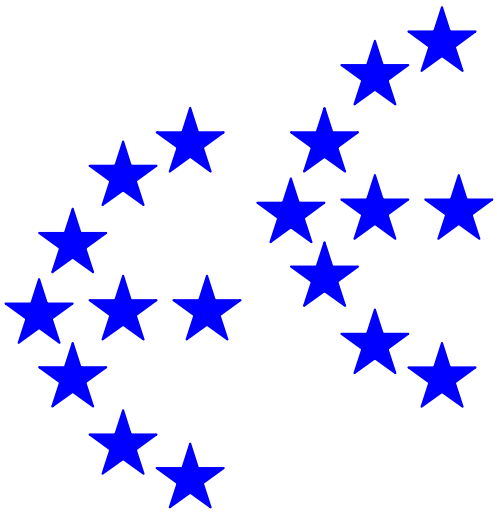
МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ДЕРЖАВНИЙ ВИЩИЙ НАВЧАЛЬНИЙ ЗАКЛАД
«НАЦІОНАЛЬНИЙ ГІРНИЧИЙ УНІВЕРСИТЕТ»

ВИЩА БАНКІВСЬКА ШКОЛА У ВРОЦЛАВІ

Єдина Європа: Погляд у майбутнє

Монографія

За редакцією доктора економічних наук,
академіка НАН України О.І. Амоші



Дніпропетровськ
НГУ
2013

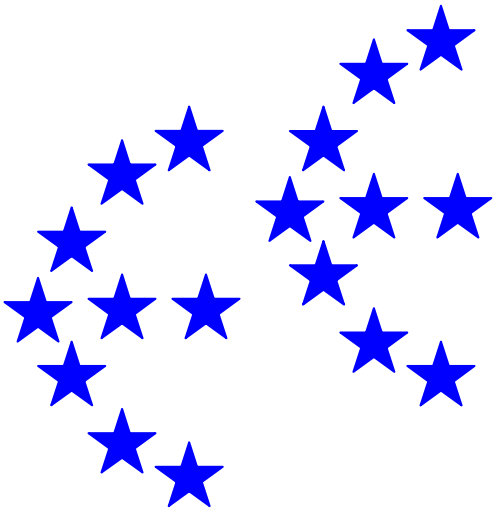
MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
STATE HIGHER EDUCATIONAL ESTABLISHMENT
«NATIONAL MINING UNIVERSITY»

WYŻSZA SZKOŁA BANKOWA WE WROCŁAWIU

United Europe: Future prospects

Monograph

Edited by O.I. Amosha, Doctor of Economics,
academician of the National Academy of Sciences of Ukraine



Dnipropetrovs'k
NMU
2013

УДК 339.92
ББК 65.5
Є33

Науковий редактор:
Амоша О. І. – д-р екон. наук, академік НАН України, директор Інституту економіки промисловості НАН України, м. Донецьк.

Рецензенти:
К.Ф. Ковальчук – д-р екон. наук, проф., декан факультету економіки і менеджменту Національної металургійної академії України, м. Дніпропетровськ;
В. М. Хобта – д-р екон. наук, проф., завідувач кафедри економіки підприємства Донецького національного технічного університету;
Н.І. Дучинська – д-р екон. наук, проф., завідувач кафедри економічної теорії Дніпропетровського національного університету ім. О. Гончара.

Редактори:
О.Ю. Чуріканова, О. Д. Швець
Проект обкладинки та комп'ютерна верстка
О.Ю. Чуріканова

Рекомендовано до друку:
вченою радою ДВНЗ «Національний гірничий університет» Міністерства освіти і науки України (протокол № 3 від 26 березня 2013 року);
вченою радою Вищої Банківської Школи у Вроцлаві (протокол № 2/01/2013 від 27 січня 2013 року).

Є33 **Єдина** Європа: Погляд у майбутнє [Текст]: моногр. = United Europe: Future prospects: monograph / ДВНЗ «Національний гірничий університет», Дніпропетровськ; Вища банківська школа, Вроцлав; за ред. О.І. Амоші. – Д.: Національний гірничий університет, 2013. – 286 с. – Текст англ. – Бібліогр. в кінці розділів.

ISBN 978–966–350–397–4

Викладено результати наукових досліджень щодо сучасних проблем глобалізації та інтеграційних процесів, участі в них українських та польських підприємств, вирішення екологічних та соціально-економічних питань, пов'язаних з інтеграційними процесами, підвищенням конкуренції та інтенсифікацією виробництва.

Видання буде корисним для наукових співробітників, фахівців-практиків, які займаються проблемами європейського розвитку, викладачів, аспірантів, студентів вищих навчальних закладів, урядових і неурядових аналітичних організацій, інституцій ЄС.

© Державний ВНЗ «Національний гірничий університет», 2013
ISBN 978–966–350–397–4
© Wyższa Szkoła Bankowa, 2013

Contents

ПЕРЕДМОВА

Процес підвищення рівня інтеграції України в європейські мережі наукових досліджень і розробок набирає динаміки. Участь науковців України та країн ЄС у спільних наукових дослідженнях та розробках дозволяє виявити проблеми на шляху інтеграційних процесів, обґрунтувати напрямки їх вирішення. У зв'язку з цим Вищою банківською школою у Вроцлаві та Державним вищим навчальним закладом України «Національний гірничий університет», а саме Інститутом економіки Національного гірничого університету, виконується спільне наукове дослідження проблем та шляхів інтеграції України у європейський економічний простір, гармонізації напрямків та рівня економічного розвитку України та країн ЄС, наближення України до європейських екологічних стандартів, стандартів якості життя, освіти та науки.

За результатами наукових досліджень Вища банківська школа у Вроцлаві та Інститут економіки ДВНЗ «Національний гірничий університет» на сьогоднішній день опублікували три монографії: «Єдина Європа: перспективи розвитку» (2010 рік), «Єдина Європа: нові виклики» (2011 рік), «Єдина Європа: розширюючи кордони» (2012 рік).

Монографія «Єдина Європа: погляд у майбутнє», яка пропонується читачеві у нинішньому, 2013 році, містить результати досліджень, спрямованих на врахування фактору глобалізації у інтеграційних процесах. В монографії розглядаються питання:

– визначення впливу глобалізації та міжнародної інтеграції на конкурентоспроможність європейських країн, регіонів та підприємств;

– обґрунтування шляхів стабілізації платіжного балансу країни, як основи забезпечення її фінансової стійкості, невід'ємної умови ефективної інтеграції країни у європейську економічну спільноту;

– аналіз особливостей функціонування ринку капіталу та закономірностей зміни руху фінансових потоків в умовах глобалізації;

– обґрунтування форм транскордонного та європейського регіонального співробітництва як фактору розвитку прикордонних територій;

– розв'язання проблем охорони навколишнього середовища з урахуванням європейських стандартів екологічної безпеки;

– обґрунтування методичних підходів побудови логістичних взаємозв'язків в умовах інтеграції;

– визначення напрямків розвитку маркетингу і менеджменту з урахуванням умов глобалізації економіки;

– формування інноваційних підходів до підготовки висококваліфікованих фахівців з метою підвищення якості кадрів європейського економічного простору.

В межах розгляду проблем, пов'язаних з впливом глобалізації та міжнародної інтеграції на конкурентоспроможність європейських країн, регіонів та підприємств в монографії аналізується польсько-український товарообіг в період 2006-2011 рр., економічний стан країн Європейського Союзу у 2002-2011 роках; особливості платіжного балансу України та завдання його реструктуризації з метою ефективної інтеграції України в Європейський Союз; розглядаються особливості міжнародного руху капіталу як фактору впливу на інноваційні тенденції розвитку економіки України та її інтеграції в світову економічну систему; обґрунтовується вибір стратегії розвитку промислових підприємств в умовах глобалізації. Крім того в першому розділі розглядається вплив європейської інтеграції на зміну фокуса аграрної політики України та конкурентоспроможність промислового виробництва; оцінюється вплив демографічної складової на конкурентоспроможність країн; підіймаються питання забезпечення енергетичної безпеки в контексті вирішення глобальних енергетичних проблем.

При обґрунтуванні форм транскордонного та європейського регіонального співробітництва автори монографії приділяють увагу безпосередньо розвитку прикордонних районів Польщі та України, як найбільш історично та культурологічно пов'язаних між собою країн.

Велика увага в монографії приділяється вирішенню проблем охорони навколишнього середовища, екологічного управління в умовах глобалізації та інтеграції. При цьому розглядаються питання прийняття рішень про стан навколишнього середовища умовах нечіткої інформації; міжнародного досвіду реалізації інвестиційної та інноваційної діяльності підприємств з урахуванням екологічної складової; аналізуються питання економічні доцільності розвитку виробництва українського вугілля з урахуванням наявності доступу до світових природних ресурсів в умовах інтеграції.

Процес глобалізації потребує інноваційних управлінських рішень, які стосуються логістики , маркетингу і менеджменту. Тому розділи 5 та 6 монографії присвячені обґрунтуванню системного підходу до управління логістикою, проблемам розвитку транспортної інфраструктури, питанням удосконалення методичних підходів до визначення ефективних зарубіжних партнерів по бізнесу, забезпеченню конкурентоспроможності управлінського персоналу, розвитку підходів до управління брендами підприємств в умовах глобалізації.

Одним з найважливіших питань інтеграції є підготовки висококваліфікованих фахівців, зближення стандартів та якості освітніх послуг. Тому сьомий розділ монографії присвячений інноваційним аспектам підготовки висококваліфікованих фахівців в процесі інтеграції; адаптації вищих навчальних програм до потреб ринку, як фактору розвитку підприємницької діяльності; удосконаленню процесу управління розвитком університетів в умовах інтеграції у світовий освітній простір; розвитку, в процесі мовної підготовки, професійно-орієнтованих комунікативних навичок мови; інноваційним аспектам підготовки фахівців з управління розробками ІТ- проектів і підвищення ефективності їх реалізації.

Автори сподіваються, що викладені у монографії результати досліджень сприятимуть підвищенню зацікавленості науковців, студентів, аспірантів, докторантів та інших читачів до питань активізації процесів євро інтеграції та пошуку шляхів ефективної участі в них Уекраїни.

FOREWORD

The process of raising the integration of Ukraine into the European R&D network is accelerating. Participation of scientists of Ukraine and EU countries in joint research and development projects can identify problems on the way of integration processes, to justify the ways of their solution.

In this regard, the High Banking School in Wroclaw and the State university of Ukraine “National Mining University”, particularly, the Institute of Economics of the National Mining University, carry out joint scientific research targeted on problems and ways of integration of Ukraine into the European Economic Area, harmonization of Ukraine’s trends and levels of economic development with EU ones, bringing Ukraine closer to European environmental and life quality standards, standards of education and science.

According to the results of researches High Banking School in Wroclaw and the Institute of Economics of “National Mining University” have already published three monographs: "United Europe: Prospects for Development" (2010), "United Europe: New Challenges" (2011), "United Europe: widening boarders "(2012).

Monograph "United Europe: Future prospects", which is offered to the reader in 2013, contains the results of studies aimed at measuring the extent of globalization in integration processes. The monograph deals with:

- determining the impact of globalization and international integration on the competitiveness of European countries, regions and enterprises;
- substantiating the ways for stabilization of the balance of payments of the countries as a basis for their financial stability, indispensable condition for effective integration into the European Economic Community;
- analyzing the capital markets functioning and patterns of movement of financial flows in the context of globalization;
- substantiating forms of cross-border and European regional cooperation as a factors of development of border areas;
- solving environmental problems according to the EU standards of environmental safety;
- substantiating the methodological approaches to building the logistics relationships in terms of integration;
- identifying areas of marketing and management with regard to the conditions of economic globalization;
- creating the innovative approaches to training highly qualified specialists to improve the quality of personnel in the European Economic Area.

Within considering issues related to the impact of globalization and international integration on the competitiveness of European countries, regions and enterprises in the monograph the Polish-Ukrainian trade turnover in the period 2006-2011 and the economic situation in the European Union in 2002-2011 were analyzed; peculiarities of Ukraine's balance of payments and its objectives for restructuring for an effective integration of Ukraine into the European Union were considered; the features of the international capital movement as a factor of influence on innovative trends in development of economic of Ukraine's and its integration into the global economic system were defined; the process of choosing the strategy of industrial enterprises under globalization was discovered. Issues corresponded with impact of European integration on the changing focus of agricultural policy of Ukraine and the competitiveness of industrial production, assessment of influence of demographic component on the competitiveness of countries as well as problems of power security in the context of solving global energy problems have been also examined in the first chapter.

When substantiating the forms of cross-border and European regional cooperation authors of the monograph focus on development of border areas of Poland and Ukraine as the most historically and culturally related countries.

A lot of attention in the monograph was given to environmental problems solutions, crucial issues of environmental management in the context of globalization and integration. Issues of decision-making on the environment in terms of fuzzy information, international experience of investment and innovation activities of enterprises considering environmental component were discovered in the monograph. Moreover, the questions of economic expediency of development of the Ukrainian coal based on accessibility of the world's natural resources in terms of integration were discovered as well.

Globalization requires innovative management decisions relating to logistics, marketing and management. Therefore, chapters 5 and 6 of the monograph are devoted to the system approach to logistics management, problems of transport infrastructure, the questions of improvement of methodical approaches to determining the effective foreign business partners, ensuring the competitiveness of management, development of approaches to brand management of the companies in the context of globalization.

One of the most important issues of integration is the training of highly qualified specialists, convergence of standards and quality of educational services. Therefore, the seventh chapter of the monograph is devoted to innovative aspects of training highly qualified specialists under the integration process, directions of adaptation of educational programs to the needs of the market as a factor of business development, improving the management of development of universities in terms of integration into the global educational community, development of the vocational oriented language communication skills in the process of language training, innovative aspects of training in IT-projects management and increase the effectiveness of their implementation.

The authors hope that the results of researches presented in the monograph will promote interest of scientists, students, graduate students and other readers to issues of activation of European integration and finding ways of effective participation of Ukraine in it.

CHAPTER 1.
INFLUENCE OF GLOBALIZATION AND INTERNATIONAL INTEGRATION ON COMPETITIVENESS OF EUROPEAN COUNTRIES AND REGIONS

POLISH-UKRAINIAN TRADE TURNOVER IN THE YEARS 2006-2011

Maria Forlicz
Agata Strzelczyk

Poland and Ukraine are two largest countries of Central-Eastern Europe, and they would seem to be natural economic and trade partners as they border on each other. In March 2005, the International Polish-Ukrainian Committee for Economic Cooperation was founded and its inaugural meeting took place on 15th November 2006 in Kiev. There is also a number of other organisations assisting entrepreneurs involved in trade turnover between Poland and Ukraine. This year is the twentieth anniversary of the Polish-Ukrainian Chamber of Commerce, and the Polish-Ukrainian Office for Economic Cooperation has been operating for twelve years now. Each year, the Polish-Ukrainian Economic Summit is organised with the participation of presidents as well as representatives of top governmental institutions and entrepreneurs of both countries. Four consuls general and eight honorary consuls of Ukraine reside in Poland, whereas four Polish consuls general work in Ukraine. Unfortunately, despite all these efforts aimed at tightening the collaboration between both countries, their trade turnover is far from a level that may be considered satisfactory.

In the year 2012,[1] Ukraine was ranked eighth among the recipients of Polish goods and nineteenth in terms of the volume of deliveries to Poland. For Ukraine, Poland is the fourth largest recipient of goods and the fifth among major suppliers. The largest share of the Ukrainian export to Poland is attributable to steel and mineral products, whereas the export from Poland to Ukraine is dominated by the products of the electromechanical and chemical industries.

Another important aspect of the problem is how the level of trade turnover between Poland and Ukraine changed in the previous years. Do the efforts undertaken by the institutions promoting the Polish-Ukrainian collaboration actually influence the trade between both countries? Table 1 contains figures illustrating how the Polish import and export (from and to Ukraine) developed in the years 2006-2011, whereas Table 2 contains corresponding data for the Ukrainian import and export (from and to Poland). Due to foreign exchange rate differences and probably slightly different systems of data acquisition and classification, the information provided below differ to a certain extent.

Table 1.
Polish-Ukrainian trade turnover in the years 2006-2011 according to Polish statistics

Year	Import [USD thousands]	Export [USD thousands]	Trade balance [USD thousands]
2006	1,319,438	3,967,792	2,648,354
2007	1,693,541	5,511,254	3,817,713
2008	2,351,734	6,436,719	4,084,984
2009	1,153,103	3,433,197	2,280,094
2010	1,818,554	3,917,347	2,098,793
2011	2,791,765	4,688,049	1,896,285

Source: author's own study based on the foreign trade statistical yearbooks for the years 2007-2012.

[1] Data covering the first 9 months of the year; source: http://kiev.trade.gov.pl/pl, accessed on 8th December 2012.

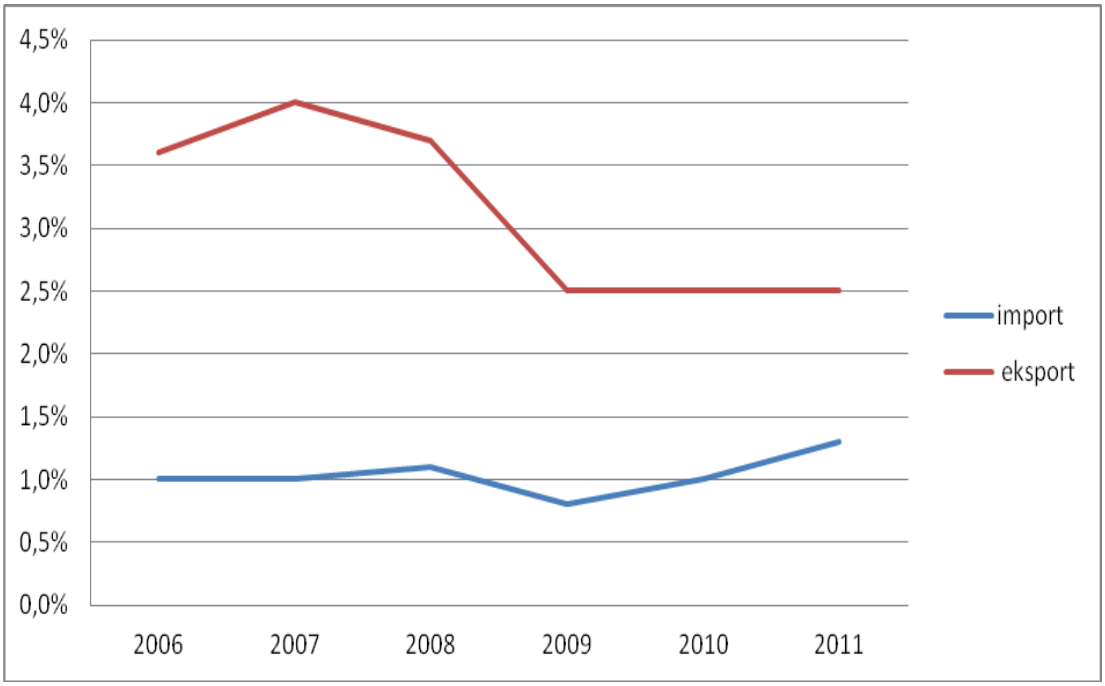
Table 2.

Ukrainian-Polish trade turnover in the years 2006-2011 according to Ukrainian statistics

Year	Export [USD thousands]	Import [USD thousands]	Trade balance [USD thousands]
2006	1,344,500	2,109,200	-764,700
2007	1,636,900	2,920,500	-1,283,600
2008	2,338,300	4,280,300	-1,942,000
2009	1,208,000	2,170,300	-962,300
2010	1,787,200	2,788,800	-1,001,600
2011	2,794,088	3,183,391	-389,303

Source: author's own study based on the data of the State Statistics Service o Ukraine

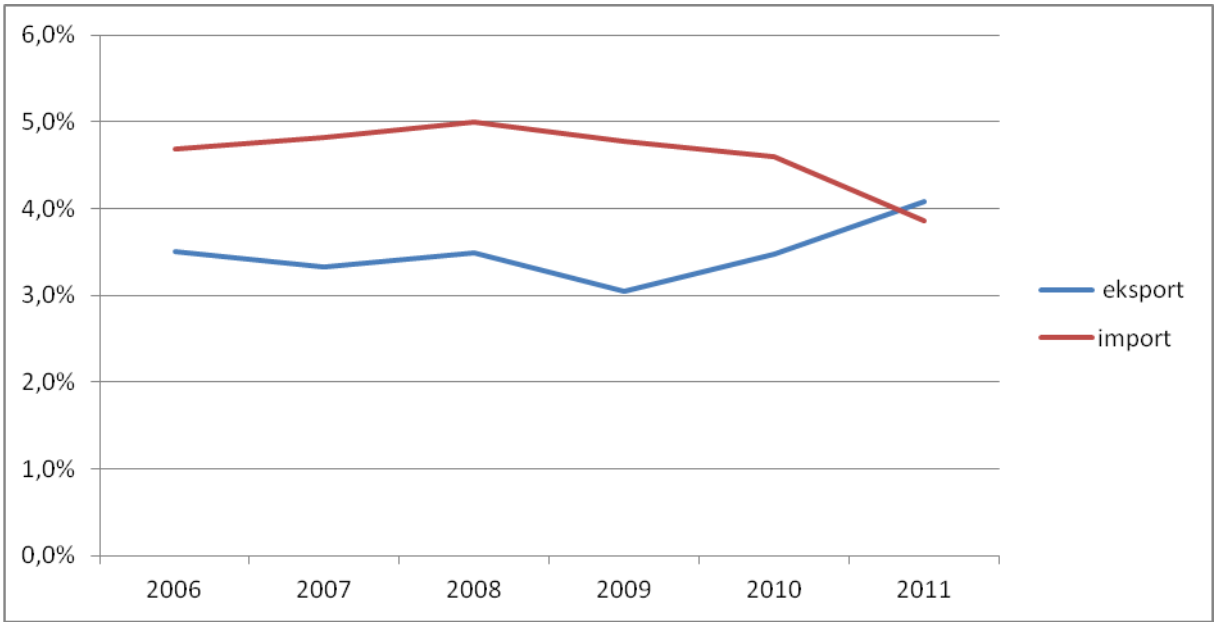
Having analysed the data contained in Tables 1 and 2, one may clearly notice the evident drop in trade turnover in the year 2009. It was surely due to the global economic crisis. In the subsequent years, as the countries were recovering after the economic depression, export and import regained its increasing trend. Poland invariably maintained a positive balance in the trade turnover with Ukraine, although the balance has been dropping for several years. Despite fairly considerable deviations in the export and import amounts, their overall share in the total export and import of both countries has recently varied rather insignificantly which can be observed in Fig. 1 and 2.



Import – Import *Eksport – Export*

Fig 1. Trade turnover with Ukraine against the Poland's combined trade based on Polish statistics

Source: author's own study based on the foreign trade statistical yearbooks for the years 2007-2012.



Eksport – Export *Import – Import*

Fig 2. Trade turnover with Poland against the Ukraine's combined trade based on Ukrainian statistics

Source: author's own study based on the data of the State Statistics Service o Ukraine (Державна служба статистики України).

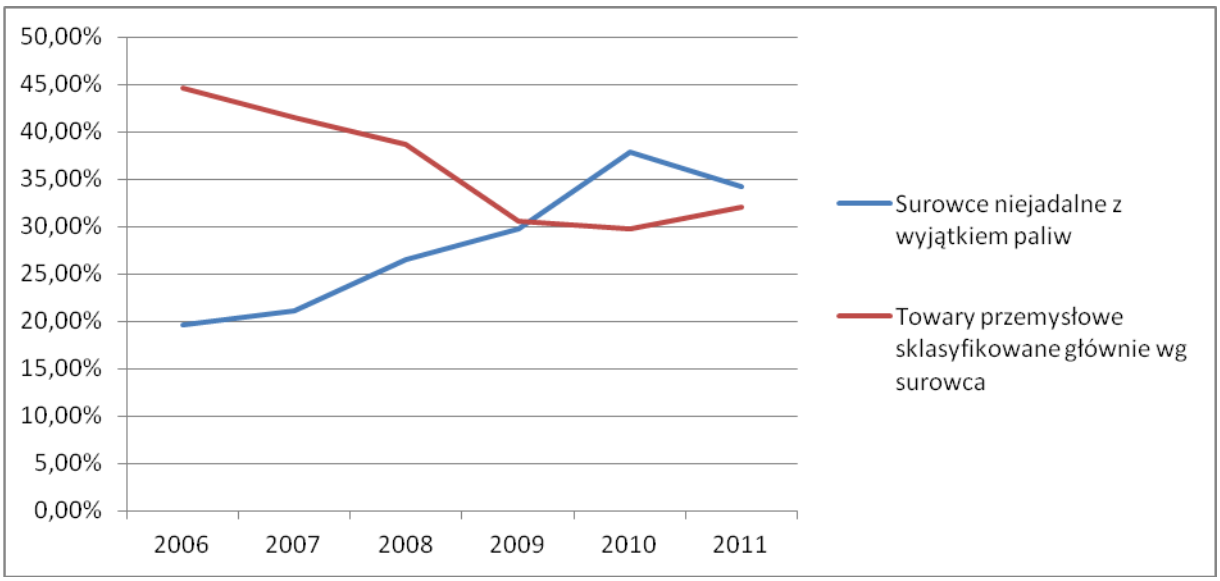
The share of import to Ukraine in the overall Polish import has remained on a fairly stable level of ca. 2.5% for several years, but the share of import from Ukraine in the overall import has grown. As far as Ukraine is concerned, the 2011 share of export to Poland compared to the overall export exceeded the share of import from Poland compared to the overall import. Bearing in mind the information on the decreasing negative balance in trade with Poland, it appears to be good news for Ukraine, and it raises hope that Ukraine will be able to benefit even more from the collaboration with Poland in the future.

The most important item of Ukraine's export to Poland within the previous years was the export of inedible raw materials except for fuels[2] (with the predominant portion of metal ores and scrap export as well as export of oleaginous seed and fruit) and industrial products mainly classified according to the raw material[3], with the largest portion of iron and steel being exported. The share of inedible raw materials except for fuels has been gradually dropping, whereas the share of industrial products mainly classified according to the raw material has been growing (see Fig 3).

Within the recent years, the share of Ukrainian export of mineral fuels, lubricants and derivative materials to Poland has been gradually decreasing (against the overall export to Poland). The export of chemicals was also dropping for a certain period, but then a rebound took place in 2011. The share of export of food and living animals has slowly been growing. Fairly stable is the share of export of oils, fats and waxes, beverages ad tobacco as well as miscellaneous industrial products. For some years, the share of export of machinery, plant and transport equipment was increasing, but it suddenly broke down after 2009 and has been dropping ever since (see Fig 4).

[2] This group of goods includes such commodities as hide, fur skin, oleaginous seed and fruit, crude rubber, cork and wood, cellulose and waste paper pulp, textile fibre and related scrap, raw natural fertilisers and mineral raw materials, metal ores and scrap, raw materials of animal and plant origin not otherwise classified.

[3] This group of goods includes commodities such as leather products, rubber products, textile yarn, wood and cork products, steel and iron, metal and paper products.

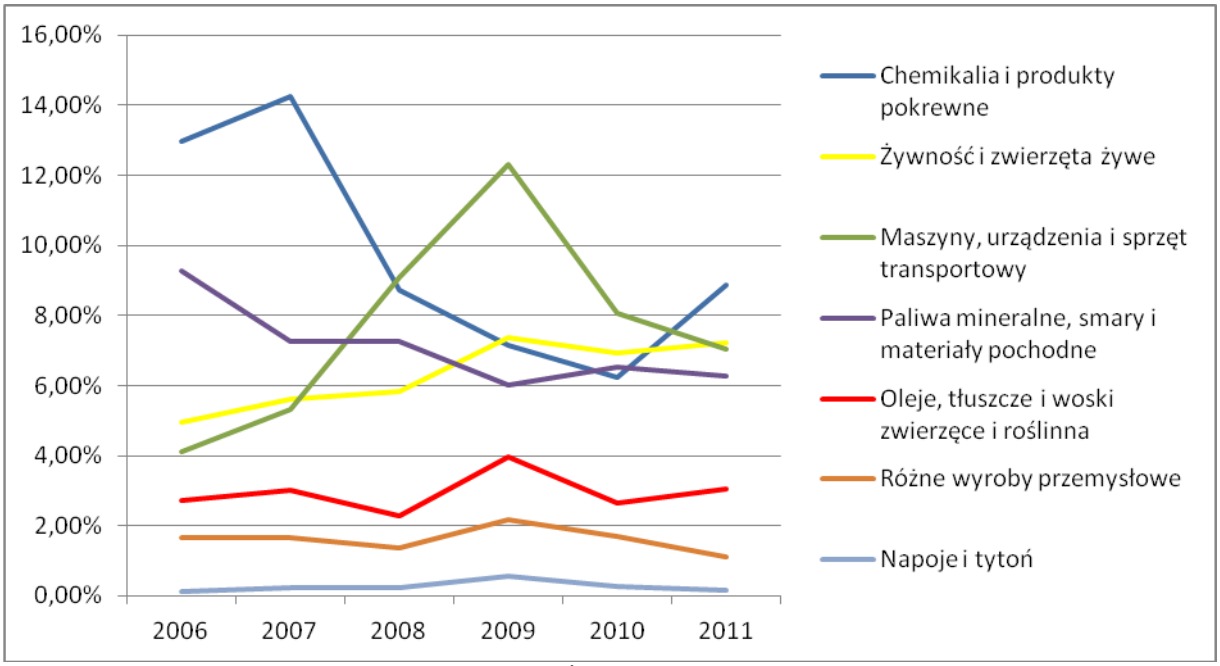


Surowce niejadalne z wyjątkiem paliw – *Inedible raw materials except for fuels*

Towary przemysłowe sklasyfikowane głównie wg surowca – *Industrial products mailny classified according to the raw material*

Fig 3. Share of export of inedible raw materials except for fuels and the share of industrial products mainly classified according to the raw material in the overall Ukrainian export to Poland

Source: author's own study based on the foreign trade statistical yearbooks for the years 2007-2012.



Chemikalia i produkty pokrewne – *Chemicals and derivative products*

Żywność i zwierzęta żywe – *Food and living animals*

Maszyny, urządzenia i sprzęt transportowy – *Machinery, plant and transport equipment*

Paliwa minertalne, smary i materiały pochodne – *Mineral fuels, lubricants and derivative products*

Oleje, tłuszcze i woski zwierzece i roslinne – *Oils, fats and waxes of animal and plant origin*

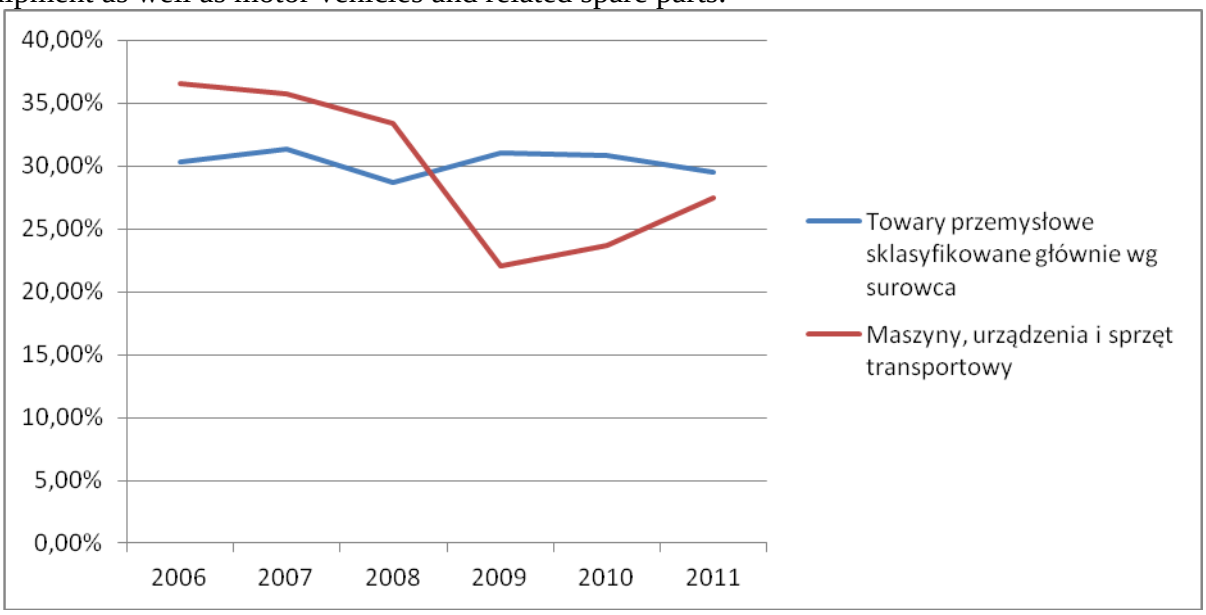
Różne wyroby przemysłowe – *Miscellaneous industrial products*

Napoje i tytoń – *Beverages and tobacco*

Fig 4. Share of export of other commodities in the overall Ukrainian export to Poland

Source: author's own study based on the foreign trade statistical yearbooks for the years 2007-2012.

The goods most frequently exported by Poland to Ukraine include industrial products mainly classified according to the raw material as well as machinery, plant and transport equipment (see Fig. 5). The share of export of industrial products in the overall export to Ukraine has remained on a more or less invariable level for years, whereas after the machinery export breakdown in 2009, it is slowly beginning to recover at present. The largest share in the export of industrial products is attributable to paper, cardboard and their derivative products as well as various metal products such as knives, for instance. In terms of machines, Poland mainly exports electrical apparatus, machinery and equipment as well as motor vehicles and related spare parts.



Towary przemysłowe sklasyfikowane głównie wg surowca – *Industrial products mailny classified according to the raw material*

Maszyny, urządzenia i sprzęt transportowy – *Machinery, plant and transport equipment*

Fig. 5. Share of export of industrial products mainly classified according to the raw material and that of machinery, plant and transport equipment in the overall Polish export to Ukraine

Source: author's own study based on the foreign trade statistical yearbooks for the years 2007-2012.

Besides industrial products mainly classified according to the raw material as well as machinery and equipment, Poland supplies Ukraine with considerable amounts of chemicals and derivative products, although after the sudden increase in the year 2009 compared to 2008, the export share of the group started gradually decreasing. The same trend can be observed as regards the share of export of food and living animals, since it was suddenly increasing in the years 2007-2009 to slightly drop afterwards. The share of other export components has remained more or less unchanged for several years.

Having compared the trade turnover between Poland and Ukraine with the overall Polish trade turnover (see Tables 3 and 4), one may observe that, in 2011,[4] as much as 13% of the import of inedible raw materials except for fuels originated in Ukraine. 9.16% of the Polish import was attributable to oils, fats and waxes of animal and plant origin. Ukraine is Poland's largest supplier of such commodities as:

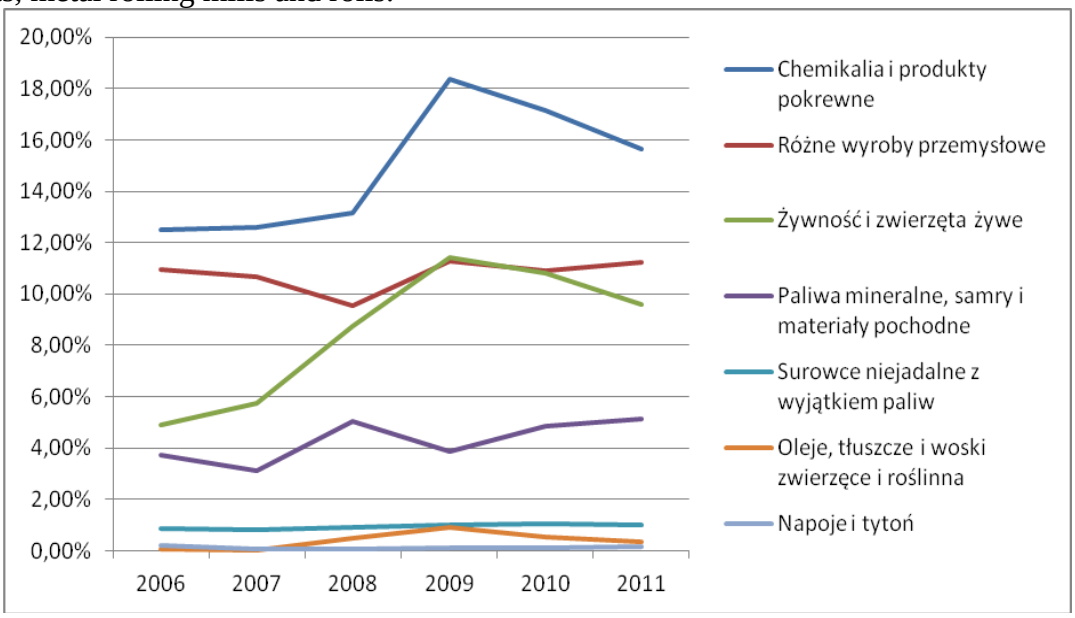
- oleaginous seed and fruit for extraction of soft solid plant oils,
- firewood and charcoal, wood in chips or lumps as well as wooden scrap, iron ores and concentrates, cast iron or steel in ingots or in other primary formats, semi-finished products made of cats iron or steel,

[4] The last year for which comprehensive data could be acquired when the article was being written.

- frozen fruit, seed of soy, flax, sunflower, rape or oil-yielding rape, including broken one, sunflower, safflower and cottonseed oil along with their fractions, molasses derived from extraction or refining of sugar, yeast, baking powder, salt (including table and denaturated salt),

- quartz (not sand), quartzite, including pre-processed one, iron ores and concentrates, including roasted ferrous pyrite, oils, other products of coal tar distillation, ammonia, both anhydrous and aqueous,

- firewood: billets, logs, branches, bundles, spills, chips, charcoal, ferroalloys, semi-finished products made or iron or unalloyed steel, hot-rolled products, flat cast iron or unalloyed steel products, metal rolling mills and rolls.



Chemikalia i produkty pokrewne – *Chemicals and derivative products*
Różne wyroby przemysłowe – *Miscellaneous industrial products*
Żywność i zwierzęta żywe – *Food and living animals*
Paliwa mineralne, smary i materiały pochodne – *Mineral fuels, lubricants and derivative products*
Surowce niejadalne z wyjątkiem paliw – *Inedible raw materials except for fuels*
Oleje, tłuszcze i woski zwierzece i roslinne – *Oils, fats and waxes of animal and plant origin*
Napoje i tytoń – *Beverages and tobacco*

Fig 6. Share of export of other commodities in the overall Polish export to Ukraine

Source: author's own study based on the foreign trade statistical yearbooks for the years 2007-2012.

Table 3.

Share of individual commodity groups imported from Ukraine in the overall import to Poland in 2011

Commodity group	Share in overall import
Food and living animals	1.46%
Beverages and tobacco	0.37%
Inedible raw materials except for fuels	13.01%
Mineral fuels, lubricants and derivative materials	0.66%
Oils, fats and waxes of animal and plant origin	9.16%
Chemicals and derivative products	0.83%
Industrial products mainly classified according to the raw material	2.33%
Machinery, plant and transport equipment	0.29%

Source: author's own study based on the foreign trade statistical yearbooks for the year 2012.

More than 4% of the Polish export to Ukraine in 2011 comprised oils, fats and waxes of animal and plant origin, and a comparable share of export accounted for chemicals and derivative products. Ukraine is Poland's largest recipient of such commodities as:

- oleaginous seed and fruit, both whole and broken, for extraction of other solid plant oils, cocoa,
- second-hand clothes, single fibres, cotton fabrics, woven fabrics, chemical fibre fabrics,
- profiled rods, sticks and sections made of plastics, nickel,
- living poultry, pork and poultry fat (fresh, cooled, frozen, salted, dried, smoked), dates, figs, pineapples, avocados, mangos, both fresh and dried, citrus fruit, both fresh and dried, grapes, both fresh and dried, seeds of sesame, cotton, poppy and other, fruit juice and extracts, cocoa butter, fat, oil, non-sweetened cocoa powder, wine made of fresh grapes,
- dolomite, both burned or pre-processed, feldspar, leucite, nepheline and fluorite, bituminous mixes, preparations used in the ceramic, enamelling and glass industry, dextrin, modified starch, starch and dextrin glue, enzymes, enzymatic preparations,
- fireproof cement, concrete and other materials (except for graphite), braking fluids etc. not containing or containing less than 70% of petroleum-based oils, vinyl ester polymers, other vinyl polymers in primary forms, acrylic polymers in primary forms,
- fibres of the cross-section smaller than 1 mm, bars, profiles, including surface-treated ones made of plastics, hygienic and pharmaceutical products made of rubber other than ebonite, newspaper paper in reels and sheets, synthetic stable fibre fabrics, impregnated, coated, plastic-laminated and rubber-coated fabrics except for cords, clothes and other second-hand products,
- ceramic building brick, hollow brick, unprocessed nickel, unprocessed tin, manual constructional spanners,
- cameras, flash lamps and bulbs.

Table 4.

Share of individual commodity groups exported from Poland in the overall export to Ukraine in 2011

Commodity group	Share in overall export
Food and living animals	2.55%
Beverages and tobacco	0.30%
Inedible raw materials except for fuels	1.03%
Mineral fuels, lubricants and derivative materials	2.64%
Oils, fats and waxes of animal and plant origin	4.42%
Chemicals and derivative products	4.34%
Industrial products mainly classified according to the raw material	3.43%
Machinery, plant and transport equipment	1.75%

Source: author's own study based on the foreign trade statistical yearbooks for the year 2012.

Despite the fact that Poland and Ukraine are geographically adjacent, the trade turnover between these countries is surprisingly low. This condition is additionally deteriorating due to the fact that both countries mainly exchange unprocessed or moderately processed goods, which particularly applies to the Ukrainian import to Poland notably dominated by raw materials. Both countries should strive to increase their mutual trade turnover and ultimately alter the said structure[5] in favour of more processed products, since it would definitely be more profitable to both parties.

[5] This, however, may prove difficult without simultaneously changing the production structure.

COMPARATIVE ANALYSIS OF ECONOMIC CONDITION OF THE EUROPEAN UNION COUNTRIES IN THE YEARS 2002-2011

Tomasz Rólczyński

Entities operating in the financial market are affected by both macro- and microeconomic factors. Depending on the degree of the financial market development, they tend to influence the activity of the said entities in different ways. Moreover, they determine the conditions of operating uncertainty and risk challenging virtually all financial market participants, affecting their current and future standing, mainly in economic terms.

By analysing the given country's economic condition, entities operating in the respective financial market may avoid the awaiting hazards. Economic condition is a complex notion for the description of which one should apply appropriate variables. Comparing values of individual variables raises some difficulties in assessing the phenomenon analysed, particularly when the assessment must entail changes taking place in time.

Having aggregated the information delivered by individual variables by establishing a synthetic indicator, one may arrange the set of data pertaining to the countries studied according to their economic condition as well as assess the trend observed in the changes occurring in time for the phenomenon examined.

INTRODUCTION

Entities operating in the financial market are affected by both macro- and microeconomic factors. Depending on the degree of the financial market development, they tend to influence the activity of the said entities in different ways. Moreover, they determine the conditions of operating uncertainty and risk challenging virtually all financial market participants, affecting their current and future standing, mainly in economic terms.

After the enlargement with ten new members in 2004 and with further two states in 2007, the European Union became an organisation incorporating 27 countries and stretching across entire Western and Central Europe. It deepened the discrepancies between individual member states, not only in the cultural sphere but also in terms of economy. "New" members of the EU are commonly believed to be inferior compared to the "old" EU states as regards their economic growth. One of the benefits resulting from accessing this "association" was to be an opportunity to boost the economy and ultimately attain such a level of economic development that "wealthy Western European countries" are known of. By analysing the state of the given country's economy, entities operating in the respective financial markets may avoid the awaiting hazards. Economic condition is a complex notion for the description of which one should apply appropriate variables. Comparing values of individual variables raises some difficulties in assessing the phenomenon analysed, particularly when the assessment must entail changes taking place in time. Having aggregated the information delivered by individual variables by establishing a synthetic indicator, one may arrange the set of data pertaining to the countries studied according to their economic condition as well as assess the trend observed in the changes occurring in time for the phenomenon examined[6].

The purpose of this article is to compare the economic condition of the European Union countries based on the trends observed in values of the synthetic indicator as well as to establish in what way the changes in the economic condition of selected EU countries develop. The article will discuss trends in the values of indices which constitute grounds for developing a synthetic variable for the chosen EU countries.

[6] T. Rólczyński: "Zastosowanie metod porządkowania liniowego do oceny zmian sytuacji ekonomicznej państw Unii Europejskiej", at: *Metody matematyczne, ekonometryczne i komputerowe w finansach i ubezpieczeniach*, 2008, Chrzan P., Dziwok E. (eds.), pp. 433-434.

1. ECONOMIC CONDITION AS A COMPLEX PHENOMENON

One will look in vain for a precise definition of economic condition in the literature of the subject. There are, however, synonymic terms used to replace the notion, such as "state of economy" or "economic standing". This notion is equally applied to describe an enterprise and an entire country, and in both cases, there is never any doubt that one speaks of a complex phenomenon, i.e. one whose description will require a set of variables to be used.

What may be understood as an economic situation (economic condition) is a status of a country as regards its finance, stability of prices, labour market and economic growth rate. All the aforementioned spheres should be subject to assessment by application of their characteristic indicators[7]. It is also a very important and equally difficult task to make an appropriate choice of indices to describe the given economic situation.

Countries aspiring to join the Economic and Monetary Union, and hence to become members of what is referred to as the Eurozone, should conform with the convergence criteria specified in the Treaty of Maastricht. They establish the required level of economic indices (i.e. variables 1-4 described below) that should characterise the given country's economy if it intends to adopt Euro as the common currency.

Therefore, one might assume that good economic condition is characteristic of such countries which satisfy the convergence criteria. Hence the indices which result from the convergence criteria will be taken into account in the economic condition analysis. What one should additionally analyse is such ratios as gross domestic product dynamics, unemployment rate and balance of the current account balance as per the GDP percentage, since having analysed all these ratios one can answer the question whether the given country has indeed reached economic stability and a "proper" economic growth level. These variables are included in what is referred to as the *macroeconomic stabilisation pentagon*, meaning that they are such properties describing the state of economy that, once they attain an "appropriate level", they will ensure economic stabilisation and economic growth[8].

The economic condition assessment and the synthetic indicator construction will be performed based on the following variables:

1) *average inflation rate* in the given member state, reported throughout one year before the assessment date, should not exceed the inflation rate attained by three countries top-ranked in this respect by more than 1.5 percentage point. From the perspective of economic development, it is beneficial to maintain this rate's values on a low, not higher than one-digit level being socially acceptable and not hampering production. For the sake of this analysis, a harmonised index of consumer prices (HICP) was applied, one that is commonly used to conduct international comparisons of consumer price inflation rates. HICP is applied by numerous institutions, including the European Central Bank, in order to monitor inflation in the Economic and Monetary Union and to assess the inflation convergence as required under article 121 of the Treaty of Amsterdam. This variable could function as a destimulant, however, due to the probability of deflation, it should rather be treated as a nominant. For the sake of the study, it was assumed that the variable's nominal level equalled 1%;[9]

2) *state budget outcome* should not exceed 3% of gross domestic product. This variable is indeed a nominant. It could have been recognised as a stimulant with an upper veto threshold, but there is a considerable issue related to its determination. Moreover, maintaining a budget surplus may imply problems involved in the state's revenue redistribution;

3) *government debt* should not exceed 60% of gross domestic product. An "excessive" value of the government debt may weaken the economic activeness due to the necessity of financing it from the state budget resources which may, in turn, result from having to increase the

[7] Rólczyñski T.: "Sytuacja ekonomiczna pañstw Unii Europejskiej w 2006 roku", at: *Prognozowanie w zarz¹dzaniu firm¹*, 2008, p. 219.

[8] See: G. W. Kołodko, 1993, pp. 47-55.

[9] It is essentially envisaged that the inflation level should be "low", hence the assumption that an optimum average annual inflation level is 1%.

state budget proceeds, for instance by raising taxes. The variable envisaged under this study is the government debt against GDP expressed in per cents. The variable is a destimulant;

4) *average nominal long-term interest rate* in the given country must not exceed the reference interest rate reported by three countries attaining the highest stability of prices by more than 2 percentage points. Interest rates constitute a tool which allows for influencing the economic growth dynamics. Decreasing interest rates accelerate the economic growth, and yet a faster economic growth may be accompanied by an inflation level increase or a phenomenon referred to as overheating of an economy. Therefore, it is important to maintain them on a balance ensuring level. The interest rate level can also be used to regulate the monetary market, or in other words, it affects the inflation level (an increase of interest rates may motivate to saving, thus reducing the consumption which, in term, should hamper the growth of prices). According to the Maastricht convergence criteria, the *earning power of ten-year treasury bonds* constitutes grounds for comparing long-term interest rates in the European Monetary Union. This variable was considered to be a destimulant;

5) *GDP dynamics* is a measure of economic growth. The countries which joined the EU in 2004 and 2007, willing to catch up with the old EU states in economic terms, must grow "faster", since the old EU countries are generally characterised by a higher absolute value of gross domestic product. This study was based on application of an actual gross domestic product change compared to the preceding year and expressed in per cents. This variable was considered to be a stimulant[10];

6) *unemployment rate* (in %) reflects the labour market standing and characterises the state of economy. High unemployment rate is particularly unfavourable as not only does it affect the level of costs incurred by the state, such as unemployment benefits and/or other social expenditures, but also the unemployed do not contribute to increasing of the budget revenue, through direct taxes, for instance, which negatively impacts the budget condition. Unemployment rate illustrates the percentage share of unemployed persons in the overall workforce. The workforce is the total number of persons employed and unemployed. The unemployed are people aged 15 to 74 without work during the reference week who are available to start work within the next two weeks (under paid employment or self-employment) and who have actively sought employment[11]. The variable is a destimulant;

7) *current account balance* is understood is a positive or negative difference between export and import of goods and services, corrected with transfer payments and net income flows between countries[12]. The current account balance applied in this study is expressed as % of GDP. This variable was considered to be a stimulant.

2. Trends observed in the values of the indices included in the synthetic indicator for the selected European Union countries

By analysing values of individual variables, one may assess the given country's standing in the spheres which jointly form the complex phenomenon of economic condition. It allows for indicating the best and the worst countries within the period of interest, tracking changes to the index values taking place in time and comparing them with values of the same indices reported by other countries. The figures below illustrate trends observed in the values of the indices included in the synthetic indicator in question in the years 2002-2011 in the selected European Union countries[13]. For the sake of clarity of figures, they illustrate trends in the values of variables in three EU countries reporting the highest index values within the last year examined and three of those which reported the lowest values in question as well as in Poland.

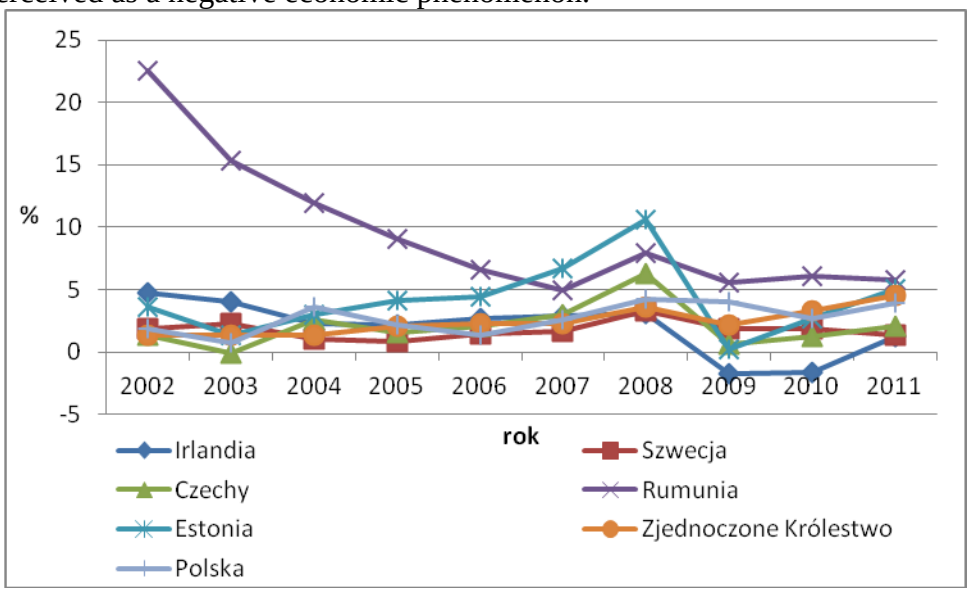
[10] For the sake of the article, the variable was considered to be a stimulant, but it commonly known that a too high rate of economic growth measured through the GDP dynamics is also far from being healthy for the economy. There is, however, an issue of how to establish the nominal variable level.

[11] Based on Eurostat's definition, see: http://epp.eurostat.ec.europa.eu.

[12] D. Begg, S. Fischer, R. Dornbusch, 2003, p. 277.

[13] All data used in the article are based on Eurostat's resources, http://epp.eurostat.ec.europa.eu. What can be regarded as a particularly important aspect of this analysis is the comparability of data, especially in terms of notions and categories. Hence the only differences in the values of individual indices published by Eurostat and national statistical institutions, e.g. the Central Statistical Office (GUS), result from having assumed a different method to calculate individual indices.

Figure 1 shows the trend in the harmonised index of consumer prices in the chosen EU countries and in Poland. What one can clearly notice is the tendency to attempt to maintain inflation on a level similar to the countries attaining the best results in this respect in the European Union. Moreover, it is also noticeable that deflation occurred, for instance in Ireland in 2009 and 2010, and it is also to be perceived as a negative economic phenomenon.

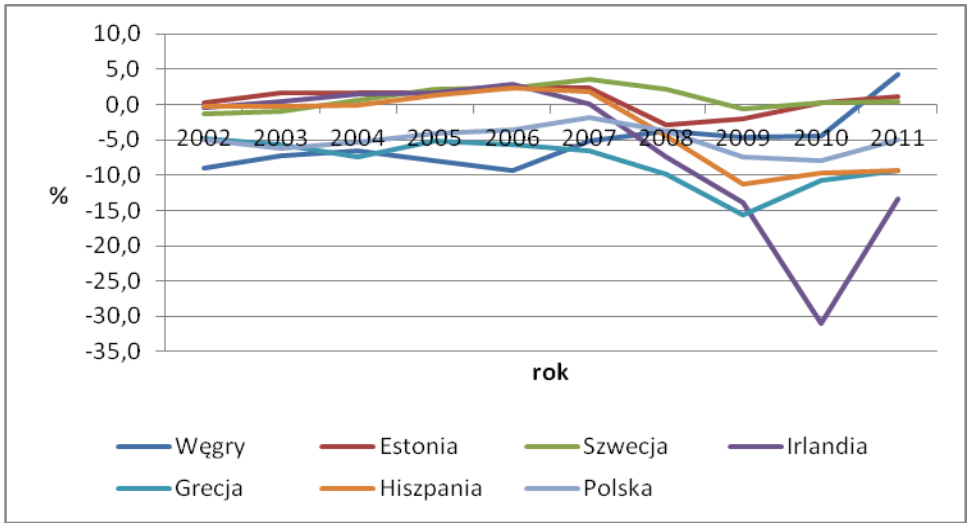


year

Ireland *Sweden*
Czech Republic *Romania*
Estonia *United Kingdom*
Poland

Fig. 1. Harmonised index of consumer prices in %.

Source: author's own study based on Eurostat's data.



year

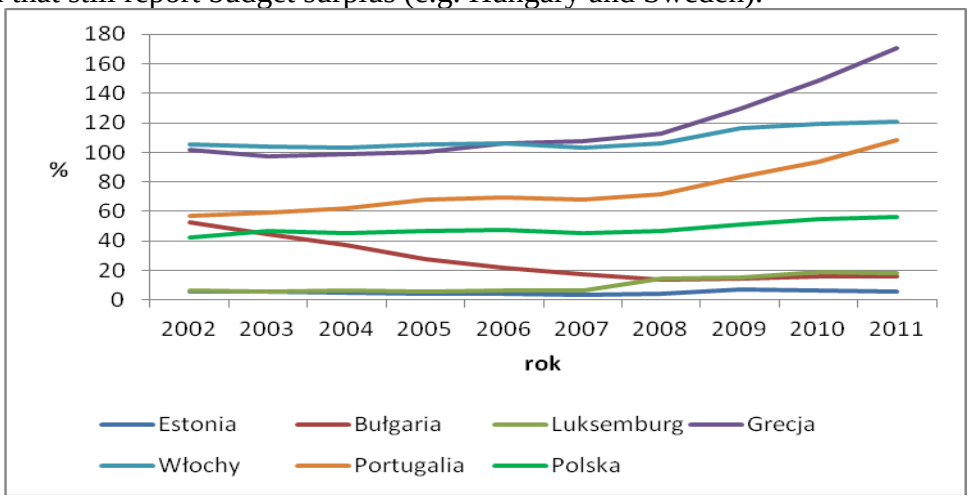
Hungary *Estonia* *Sweden* *Ireland*
Greece *Spain* *Poland*

Fig. 2. State budget outcome in % of GDP.

Source: author's own study based on Eurostat's data.

The state budget outcome is expressed in % of gross domestic product. According to the convergence criteria, budget deficit should not be lower than 3% of GDP. What may strike is the intensification of deficits compared to GDP in the EU countries since 2009. Figure 2 shows it

clearly based on the example of Ireland, Spain and Greece. However, there are countries in the European Union that still report budget surplus (e.g. Hungary and Sweden).

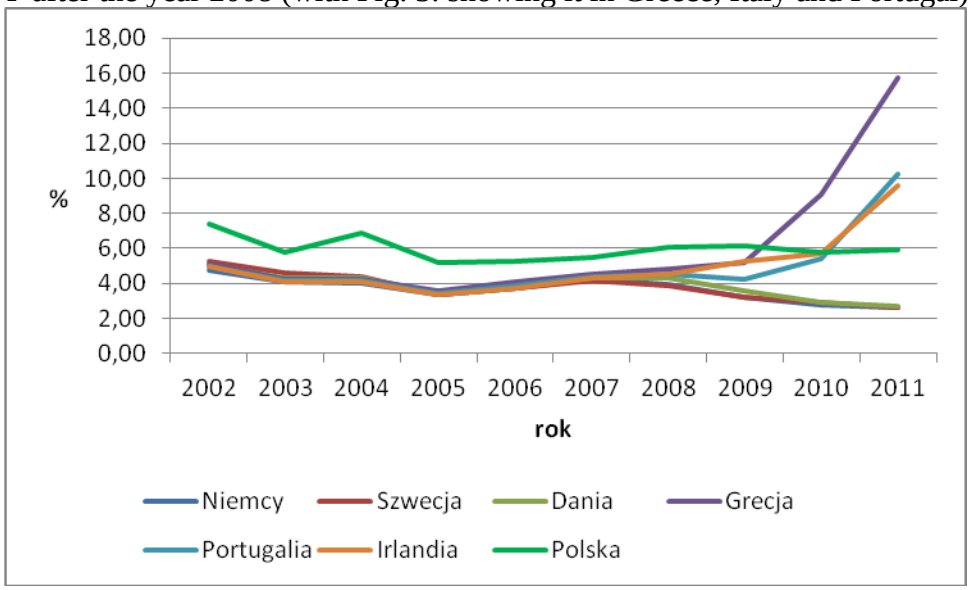


year
Estonia *Bulgaria* *Luxembourg* *Greece*
Italy *Portugal* *Poland*

Fig. 3. Government debt in % of GDP

Source: author's own study based on Eurostat's data.

Government debt is an accumulated measure comprising the loans incurred to cover the budget deficit resulting from numerous reasons, including the issue of securities for pecuniary debts, credits and loans incurred or deposits accepted. According to the convergence criteria, the government debt should not exceed 60% of GDP. One may notice the government debt increase compared to GDP after the year 2008 (with Fig. 3. showing it in Greece, Italy and Portugal).



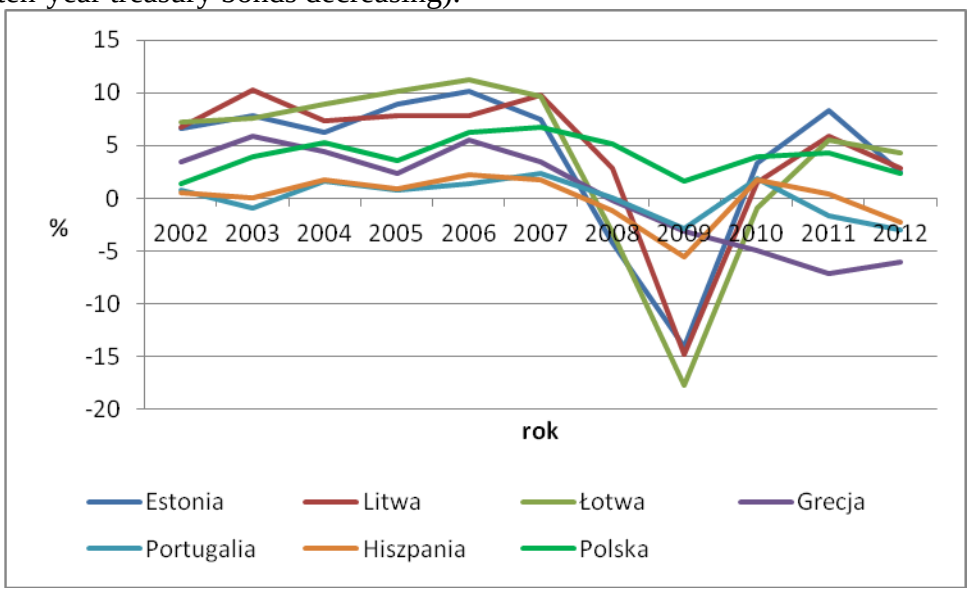
year
Germany *Sweden* *Denmark* *Greece*
Portugal *Ireland* *Poland*

Fig. 4. Earning power of 10-year treasury bonds in %

Source: author's own study based on Eurostat's data.

Interest rates constitute a tool which makes it possible to influence the economic growth dynamics. Decreasing interest rates accelerate the economic growth, and yet a faster economic growth may be accompanied by an inflation level increase or a phenomenon referred to as

overheating of an economy. Therefore, it is important to maintain them on a balance ensuring level. The convergence criteria impose a specific obligation upon the member states to make interest rates uniform. The earning power of ten-year treasury bonds, used for the sake of assessment in relation to the convergence criteria, implies that since 2009, the credit risk related to investing in treasury bonds of certain European Union countries has been increasing (see Fig. 4 indicating Greece, Portugal and Ireland), however, there are still countries whose reliability has been growing (or growing relatively compared to other countries), these being e.g. Germany, Sweden and Denmark (interest rate of ten-year treasury bonds decreasing).



year

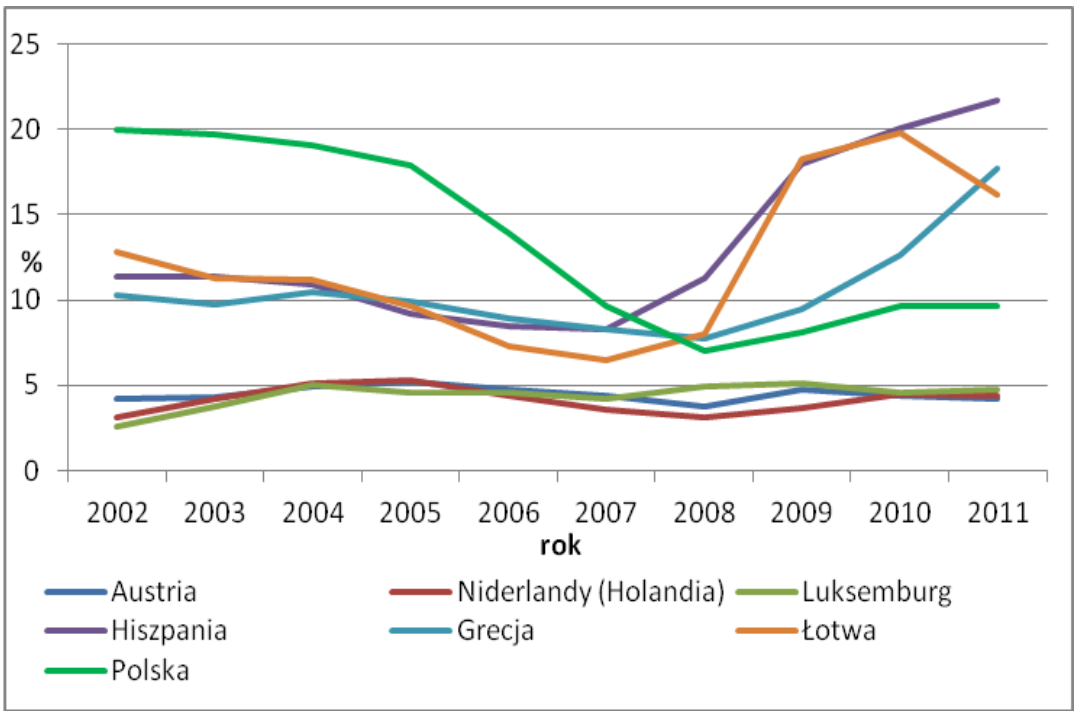
Estonia	*Lithuania*	*Latvia*	*Greece*
Portugal	*Spain*	*Poland*	

Fig. 5. GDP dynamics in %; actual change compared to the preceding year
Source: author's own study based on Eurostat's data.

The gross domestic product dynamics is a measure of economic growth. Countries such as Poland, willing to catch up with the old EU countries in terms of their economic growth, should develop faster than the latter. Since the year 2007, one could observe a change in the trend of the GDP dynamics from an increasing (or level) to a decreasing one. In 2009, all EU countries except for Poland reported negative GDP growth dynamics. The state whose GDP has been constantly falling since 2008 is Greece, which is no surprise considering the latest events taking place in this country.

There are countries in the European Union whose unemployment rate is close to natural unemployment, meaning that is has been lower than 5% since 2002 (e.g. Austria, Luxembourg, the Netherlands). But there are also countries where the unemployment rate started increasing after 2008 (e.g. Spain, Greece, Latvia) to reach or even exceed the level of 20% in 2011.

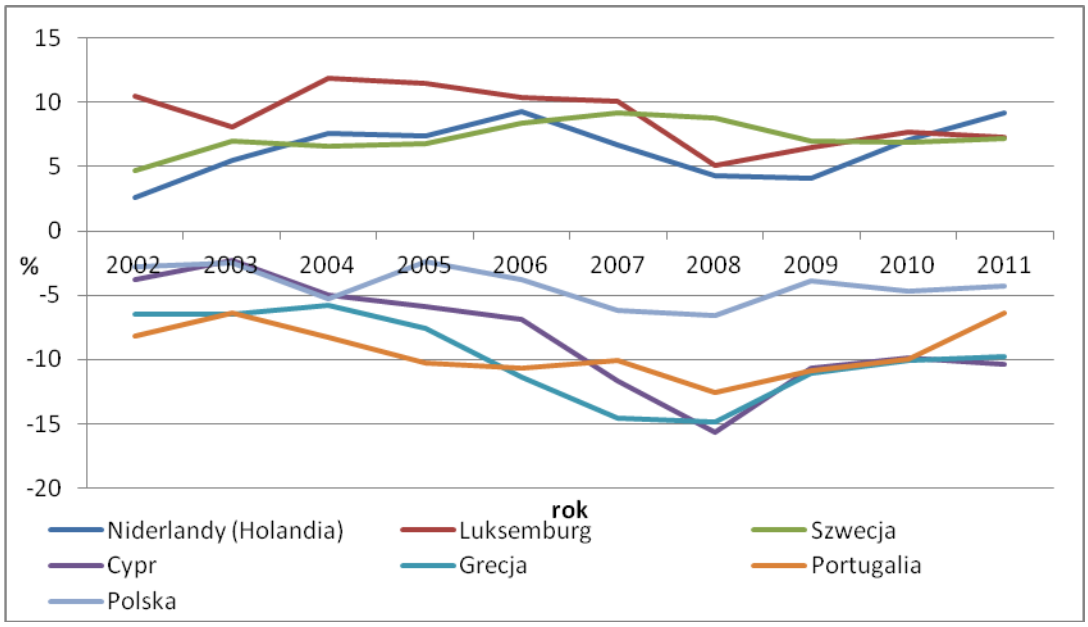
Most EU countries are characterised by a negative current account balance. Those of the highest positive current account balance include the Netherlands, Luxembourg and Sweden, whereas the poorest balance is reported by Cyprus, Greece and Portugal.



year
Austria *Netherlands* *Luxembourg*
Spain *Greece* *Latvia*
Poland

Fig. 6. Unemployment rate as of the period end

Source: author's own study based on Eurostat's data.



year
Netherlands *Luxembourg* *Sweden*
Cyprus *Greece* *Portugal*
Poland

Fig. 7. Current account balance in % of GDP

Source: author's own study based on Eurostat's data.

3. Standardised amounts method

Methods of linear arrangement enable prioritisation of the objects being analysed in an order from "the best" to "the worst", whereas the arrangement criterion constitutes the level of a complex phenomenon examined. The choice of variables used to describe a complex phenomenon is most usually of a subject matter related nature. While building a synthetic indicator describing the complex phenomenon in question, the degree of correlation between variables is irrelevant[14]. This study is based on application of a non-model method of linear arrangement, namely the standardised amounts method[15].

The variables based on which the synthetic indicator is to be built are characterised by different units of measure and orders of magnitude, therefore the application of the standardised amounts method is preceded by standardisation, following which values of all variables become dimensionless and arithmetic means equal 0, whereas standard variations and deviations equal 1.

The standardisation is usually performed according to the following formula:

$$z_{ij} = \frac{x_{ij} - \bar{x}_j}{s_j} \qquad (i = 1,2,..n \qquad j = 1,2,..m) \tag{1}$$

where:

z_{ij} – standardised value of the j^{th} variable for the i^{th} observation,

$\bar{x}_j$ – arithmetic mean of variable x_j

s_j – standard deviation of variable x_j.

The variables analysed can be divided into the following three groups:

– stimulants, i.e. variables whose value increase implies an increase in the complex phenomenon studied,

– destimulants, i.e. variables whose value decrease implies an increase in the complex phenomenon studied,

– nominants, i.e. variables whose fixed value or range of values prove the complex phenomenon positive.

No sooner may the synthetic indicator be built and the linear arrangement method applied than all variables describing the given complex phenomenon assume the nature of stimulants or destimulants. A destimulant may be easily transformed into a destimulant by multiplying its standardised values by –1. A nominant is transformed into a stimulant based on the following formula:

$$z_{ij} = \begin{cases} 1 & \text{for } x_{ij} = N_j, \\ \dfrac{-1}{x_{ij} - N_j - 1} & \text{for } x_{ij} < N_j, \\ \dfrac{1}{x_{ij} - N_j + 1} & \text{for } x_{ij} > N_j, \end{cases} \tag{2}$$

where N_j is a nominal value for the j^{th} variable.

The standardised amounts method comprises the following stages:

1. Calculation of standardised amounts of values according to the following formula:

[14] Compare Appenzeller D.: "Metodologiczne problemy opisu i prognozowania kondycji finansowej", at: *Prognozowanie w zarządzaniu firmą*, 2008, p. 130.

[15] *Ekonometria z elementami programowania matematycznego…*, 1992, pp. 256-261.

$$p_i = \sum_{j=1}^{m} z_{ij} \cdot w_j \tag{3}$$

where:

z_{ij} – standardised value of the j^{th} variable for the i^{th} observation,

w_j – weight factor of the j^{th} variable.

It is often assumed in practice that each of the variables being analysed exerts an identical influence on the level of the complex phenomenon[16], which means that weight factors of all variables are equal and amount:

$$w_j = \frac{1}{m} \qquad \text{for} \quad j = 1,2,..m \tag{4}$$

2. Calculation of the growth indicator for each object studied

$$m_i = \frac{p_i - p_{-0}}{p_0 - p_{-0}} \qquad \text{for } i = 1,2,..n \tag{5}$$

$$p_0 = \sum_{j=1}^{m} z_{0j} \cdot w_j \tag{6}$$

$$p_{-0} = \sum_{j=1}^{m} z_{-0j} \cdot w_j \tag{7}$$

$$z_{0j} = \max_i z_{ij} \tag{8}$$

$$z_{-0j} = \min_i z_{ij} \tag{9}$$

The higher the value of synthetic indicator p_i, the higher the level characterising the complex phenomenon studied for the j^{th} object. Consequently, based on the value of the p_i amounts alone, one can arrange the objects according to the level of the complex phenomenon in question. Building the m_i growth indicators is assumed to make it possible to obtain values standardised within the range of [0;1], where the closer the m_i value is to a unity, the better it says about the level of the complex phenomenon for the given object[17].

4. Economic condition of the European Union countries in the years 1998-2007 against the synthetic indicator values

Based on the data describing the aforementioned economic indices, the procedure defined in section 3 was executed in order to establish standardised values of the synthetic variable characterising the economic condition of the European Union countries in the years 2002-2011. The statistical materials collected did not make it possible to determine the synthetic variable values for all countries examined in the years 2002-2011 due to data shortage. For instance, Estonia was not entailed at all in the study with application of the standardised amounts method due to the lack of comparable data on long-term interest rates. It was also the case of Bulgaria in the year 2002 and Romania in the years 2002-2005.

Table 1 contains values of growth indicators reported by the European Union countries in the years 2002-2011[18]. One may clearly notice that the highest value of the 2011 growth indicator

[16] Compare: Appenzeller D.: "Metodologiczne problemy opisu i prognozowania kondycji finansowej", at: *Prognozowanie w zarządzaniu firmą*, 2008, p. 130.

[17] *Ekonometria z elementami programowania matematycznego…*, 1992, pp. 256-261.

[18] The order of countries was established according to the growth indicator values for the year 2011. The trends in the growth indicators for the chosen EU countries within the years 2002-2011 have been depicted in Figures 8 and 9.

was attained by Sweden and it came to 0.87. Therefore, it can be claimed that from among the EU countries, this one was characterised by the best economic condition in 2011[19]. Among the countries reporting the highest values of the growth indicator in 2011, there were also Luxembourg (0.77) and the Netherlands (0.74). It is also significant that those of the lowest growth indicator values were Greece (0.08), Portugal (0.35) and Spain (0.44).

Table 1.

Growth indicator values for the European Union countries in the years 2002-2011

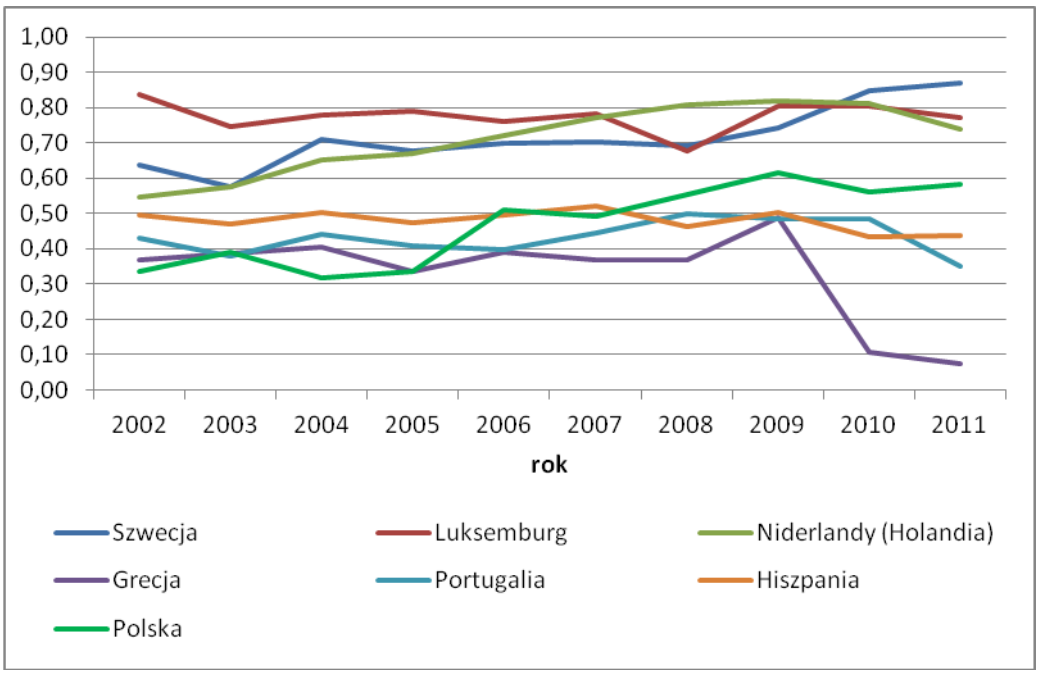
	growth indicator value									
country/year	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Greece	0,37	0,39	0,41	0,34	0,39	0,37	0,37	0,49	0,11	0,08
Portugal	0,43	0,38	0,44	0,41	0,40	0,45	0,50	0,49	0,48	0,35
Spain	0,49	0,47	0,50	0,47	0,50	0,52	0,46	0,50	0,43	0,44
Cyprus	0,49	0,43	0,49	0,45	0,56	0,60	0,61	0,62	0,52	0,49
Italy	0,40	0,36	0,42	0,41	0,45	0,50	0,48	0,59	0,55	0,50
Hungary	0,41	0,31	0,33	0,31	0,32	0,25	0,32	0,45	0,45	0,53
Romania	–	–	–	–	0,44	0,43	0,52	0,51	0,45	0,56
United Kingdom	0,68	0,61	0,60	0,53	0,55	0,58	0,59	0,63	0,55	0,56
Ireland	0,65	0,60	0,64	0,65	0,66	0,69	0,56	0,50	0,41	0,57
Belgium	0,57	0,51	0,54	0,45	0,51	0,58	0,52	0,60	0,60	0,58
Latvia	0,63	0,51	0,54	0,55	0,59	0,54	0,32	0,32	0,35	0,58
Poland	0,34	0,39	0,32	0,34	0,51	0,49	0,56	0,62	0,56	0,58
Slovakia	0,33	0,32	0,36	0,45	0,47	0,64	0,61	0,67	0,67	0,60
France	0,55	0,48	0,50	0,49	0,52	0,56	0,56	0,61	0,60	0,60
Lithuania	0,60	0,52	0,65	0,61	0,64	0,67	0,52	0,35	0,60	0,61
Malta	0,52	0,41	0,38	0,41	0,46	0,62	0,58	0,61	0,60	0,62
Bulgaria	–	0,39	0,47	0,46	0,47	0,49	0,53	0,58	0,56	0,63
Slovenia	0,43	0,42	0,56	0,57	0,65	0,68	0,65	0,72	0,65	0,64
Finland	0,64	0,62	0,62	0,66	0,69	0,70	0,64	0,66	0,72	0,67
Austria	0,63	0,59	0,57	0,57	0,65	0,66	0,71	0,72	0,71	0,67
Czech Republic	0,62	0,53	0,54	0,66	0,67	0,66	0,65	0,70	0,72	0,68
Denmark	0,59	0,58	0,66	0,64	0,68	0,70	0,69	0,79	0,72	0,72
Germany	0,58	0,56	0,51	0,49	0,56	0,59	0,68	0,69	0,79	0,73
Netherlands	0,55	0,57	0,65	0,67	0,72	0,77	0,81	0,82	0,81	0,74
Luxembourg	0,84	0,74	0,78	0,79	0,76	0,78	0,68	0,80	0,80	0,77
Sweden	0,64	0,58	0,71	0,68	0,70	0,70	0,69	0,74	0,85	0,87

Source: authors' own study.

Figure 8 depicts Poland against the best three and the worst three EU countries[20]. It can be clearly noticed that Poland's growth indicator value was rising starting from the year 2004, which proves that the Polish economic condition was improving and hence the level of the complex phenomenon in question increased. Nonetheless, Poland was ranked 15th in terms of the growth indicator value attained in 2011 (see Table 1). What strikes while analysing Figure 8 is mainly Greece, for which the growth indicator value started falling in 2009, even though its growth indicator has been the lowest in the entire European Union since 2005 (except for the year 2009).

[19] Among the countries examined.

[20] Based on the growth indicator values reported in the year 2011.



year
Sweden *Luxembourg* *Netherlands*
Greece *Portugal* *Spain*
Poland

Fig. 8. Trends in the growth indicator values for the selected European Union countries in the years 2002-2011

Source: authors' own study.

CONCLUSIONS

Having calculated the growth indicator values, one can arrange the countries examined in a hierarchy in terms of the level of the complex phenomenon in question, namely the economic condition. Monitoring the values of the said indicators in time also enables determination of a trend according to the which the given country's economic condition changes. A shortcoming of such an approach to the economic condition assessment is that one may indicate which countries are characterised by better economic condition compared to other countries studied, but without a supplementary analysis of individual economic indices, it is difficult to estimate whether the economic condition is good or bad at all. Therefore, application of linear arrangement methods should (can) be used as an auxiliary tool supporting the economic condition assessment.

Furthermore, one should note that a significant obstacle in application of the methods of multidimensional comparative analysis with regard to what is referred to as international comparisons is the lack or incomparability of data for individual countries. As far as the study discussed in this article is concerned, the foregoing led to limiting the number of countries that could be assessed based on growth indicator values.

Moreover, the synthetic indicator in question may also be applied in the economic condition forecasting[21].

[21] Compare: Appenzeller D.: "Metodologiczne problemy opisu i prognozowania kondycji finansowej", at: *Prognozowanie w zarządzaniu firmą*, 2008, pp. 133-134.

REFERENCES

1. Appenzeller D.: “Metodologiczne problemy opisu i prognozowania kondycji finansowej”, at: *Prognozowanie w zarządzaniu firmą*, Dittmann P., Szanduła J. (eds.), published by Indygo Zahir Media, Wrocław, 2008.
2. Begg, D., Fischer, S., Dornbush, R.: *Ekonomia*, Polskie Wydawnictwo Ekonomiczne, edition III, Warsaw, 2003.
3. Bartosiewicz S. (ed.): *Ekonometria z elementami programowania matematycznego i analizy porównawczej,* Wrocław University of Economics, edition III, Wrocław, 1992.
4. Eurostat website: www.europa.eu.int.
5. Kołodko G. W.: *Kwadratura pięciokąta. Od załamania gospodarczego do trwałego wzrostu*. Poltext, Warsaw, 1993.
6. Rólczyński T.: “Sytuacja ekonomiczna państw Unii Europejskiej w 2006 roku”, at: *Prognozowanie w zarządzaniu firmą*, Dittmann P., Szanduła J. (eds.), published by Indygo Zahir Media, Wrocław, 2008.
7. Rólczyński T.: “Zastosowanie metod porządkowania liniowego do oceny zmian sytuacji ekonomicznej państw Unii Europejskiej”, at: *Metody matematyczne, ekonometryczne i komputerowe w finansach i ubezpieczeniach*, 2008, Chrzan P., Dziwok E. (eds.), publishing house of the University of Economics in Katowice, 2009, pp. 433-449.

FINANCIAL ASPECTS OF THE PROSPECTS FOR UKRAINE’S INTEGRATION INTO THE EUROPEAN UNION

Olga Galushko

Factors of disproportion in financial-economic indicators of development of Ukraine and EU countries such us deficit of the state budget, state debt and level of inflation are analyzed. The influence of world economic crisis on the dynamics of these indicators is considered. Directions and prospects for achieving the required levels of financial-economic indicators of development by Ukraine in order to provide its effective integration into EU are defined.

INTRODUCTION

One of the conditions of the integration process of the countries is the convergence of their socio-economic development level. Therefore, when determining the prospects for Ukraine's integration into the European Economic Community, comparative analysis of the level of development of Ukraine and the EU, identification of trends and determination the prospects for convergence of relevant indicators, development of directions of economic reforms in order to ensure the effectiveness of the integration process are very actual.

It should also be noted that, when creating an integrated international group, integration process can be carried out both as a "bottom-up" (as a result of the evolutionary development of the sequential stages of integration: production integration, transnationalization, creation of free trade zones and the common market) and "top-down" (by including into integration process those countries development indicators of which do not fully meet the required criteria with the following targeted regulation of the convergence process).

The second method is used in expectation by interstate union of synergistic positive effect of integration. Of course, integration of Ukraine into the European Economic Community can be really carried out only in the second way.

Therefore, understanding the "gap" between the criteria indicators of development of Ukraine and the EU is the relevant scientific and analytical task.

Therefore in this chapter of the monograph, the financial and economic criteria for integration of the countries into EU are considered, a comparative analysis of development of the EU countries and Ukraine is conducted and prospects for achieving the economic criteria of the Maastricht Treaty by Ukraine are substantiated.

1. FINANCIAL-ECONOMIC CRITERIA FOR INTEGRATION OF THE COUNTRIES INTO THE EU

As stated earlier, most of the EU countries have united in the evolutionary process of the production integration, transnationalization, and at the final stage - the creation of conditions for free movement of factors of production and its results.

In order to monitor and manage the integration process the Maastricht Treaty was developed («Treaty on European Union») [4] and has been entered in force on the 1st of November, 1993. The treaty was intended to settlement monetary and political systems of European countries. Provisions of the agreement stipulated the achievement by the countries that joined the EU, of five financial and economic criteria:

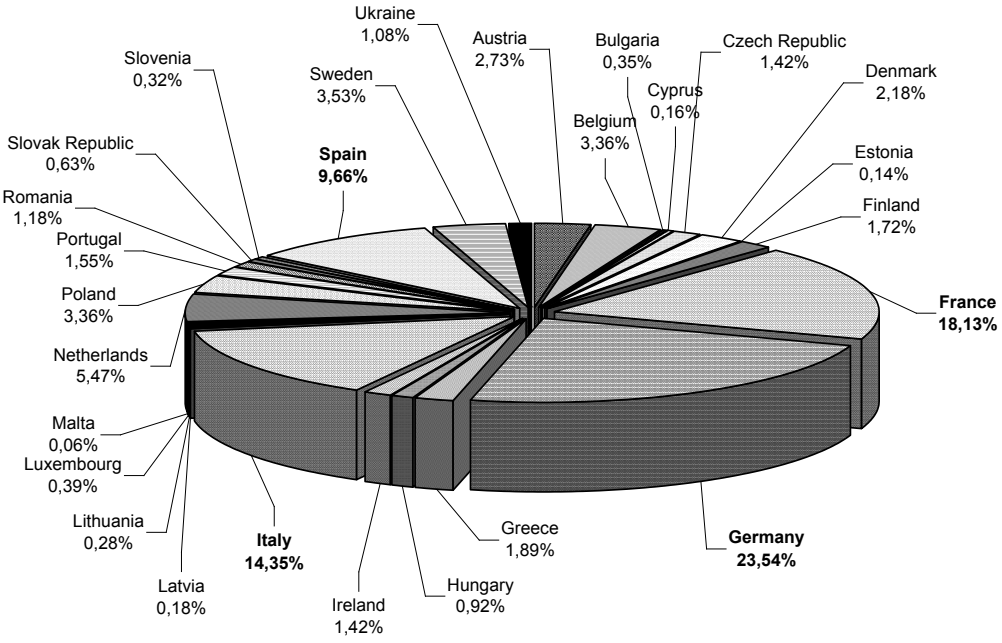
- a deficit of the state budget should not exceed 3% of GDP,
- public debt should be less than 60% of GDP,
- the state must within two years participate in the exchange rate mechanism and support the currency in a given range,
- the level of inflation should not exceed by more than 1.5% of the average values of the three EU member with the most stable prices,
- long-term interest rates on government bonds should not exceed by more than 2% of the mean value of the relevant rates in countries with the lowest inflation. [4]

Analysis of the EU economy on the stage of accession of 10 Eastern European countries shows that almost all countries integrated into the EU in 2004 have met the standard requirements set out in «Treaty on European Union». Development of the global economic crisis, symptoms of which were already visible in 2006-2007, has negatively affected the preservation by the EU countries of the indicators of financial and economic stability, the maintenance of the achieved rates of economic development, which is currently the subject of regulation of national economies of the EU countries on the supranational level.

2. COMPARATIVE ANALYSIS OF THE INDICATORS OF DEVELOPMENT OF THE EU COUNTRIES AND UKRAINE

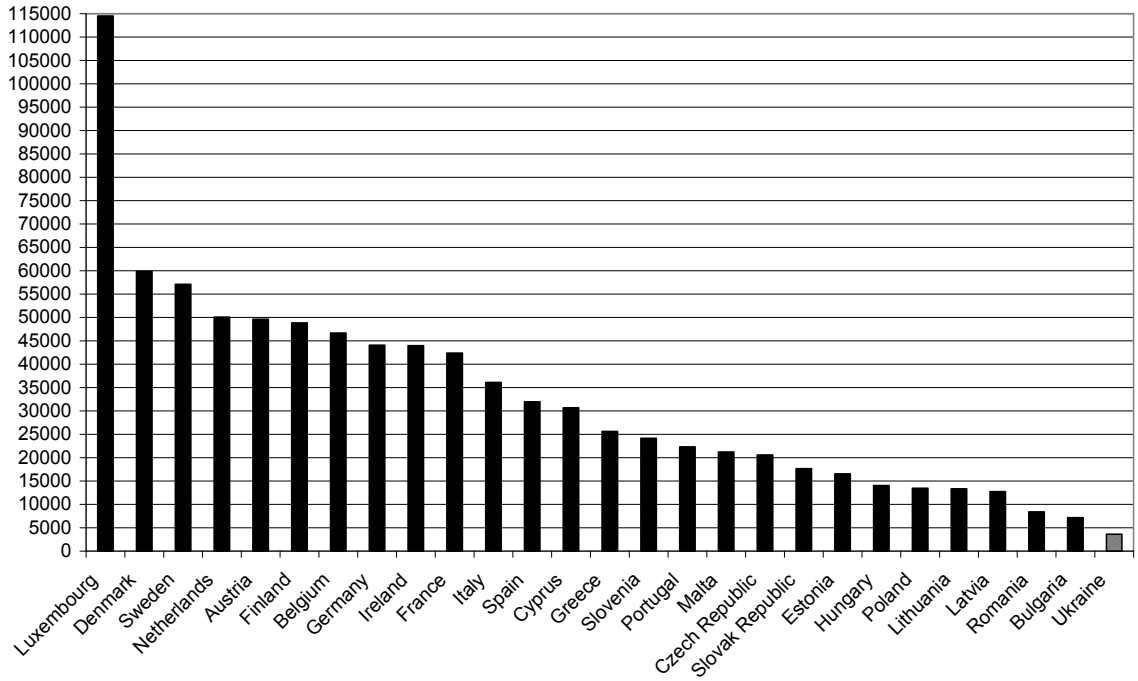
Further development of the European Union provides the abilities for joining the new countries that does not preclude the Maastricht Treaty. However, the admission of new members to the European community increases pressure on countries that already operate as full members of the EU. Therefore, Ukraine's aspirations for European integration should be reinforced with a desire to strengthen the national economy, providing high productivity of its available resources, achieving the high level of financial and economic indicators of development.

It should be mentioned that Ukraine's entry to the EU will increase its area by 14% and the population - by 9%. However, at this stage of development of Ukraine's economy, the total GDP of EU will grow by just 1.1% (Fig. 1), because the level of technological development causes the low level GDP per capita (Fig. 2).



Source: Calculated using data [2,4,5]

Fig. 1. Structure of total GDP, by the EU countries and Ukraine



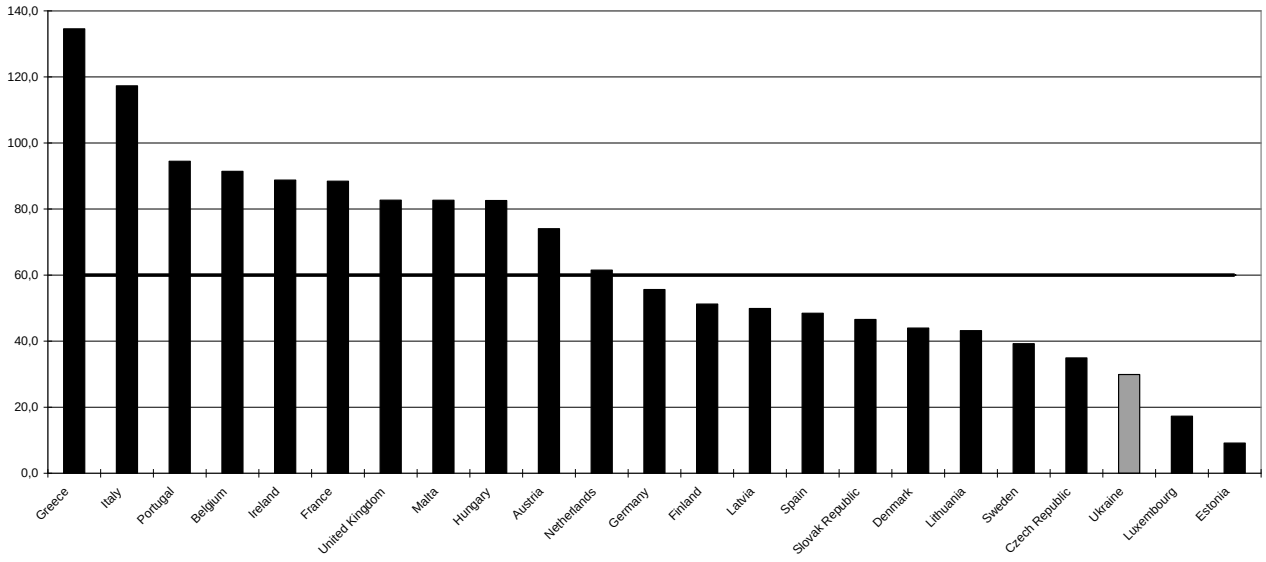
Source: Calculated using data [2,4,5]

Fig. 2. Ranking of the EU countries and Ukraine by GDP per capita (2011, USD)

It should be noted that in the EU there are members that provide 0.14% of GDP (Estonia), 0, 92% of GDP (Hungary), 0.18% of GDP (Latvia), 0.28% of GDP (Lithuania) as well, but the level

of GDP per capita is significantly higher then in Ukraine. This fact indicates a more efficient functioning of the economy of these countries. Thus, the participation in the EU of Luxembourg with a GDP of 0.39% of total EU GDP is significant, because of the highest GDP per capita among the EU countries (Fig. 2).

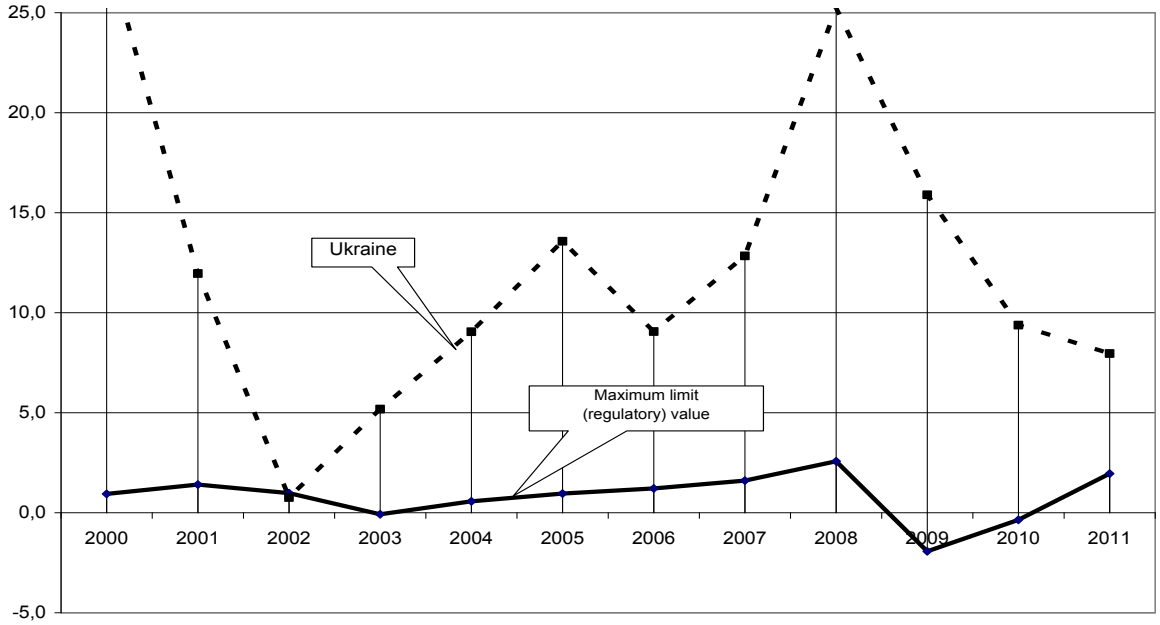
Analysis of fulfillment by the EU and Ukraine of the norm of the Maastricht Treaty on the volume of government debt indicates that, despite of significant increase comparing with previous years, the state debt of Ukraine does not exceed a maximum level (60% of GDP) and was in 2010, 29.9% of GDP (Fig. 3).



Source: Calculated using data [2,4,5]

Fig. 3. Ranking of the EU countries and Ukraine by level of state debt to GDP (2010, %)

Analyzing inflation, which, according to the Maastricht criteria, should not exceed more than 1.5% inflation in the three EU countries with the most stable economies, it should be noted that this indicator at this time was not achieved by Ukraine (Fig. 4).



Source: Calculated using data [2,4]

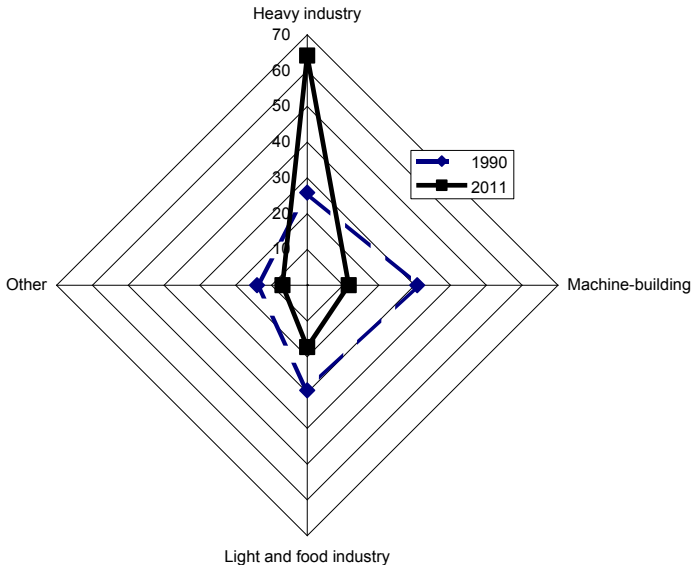
Fig. 4. Dynamics of inflation rate in Ukraine and maximum level of inflation rate according to Maastricht Treaty

According to the World Bank data [5] inflation rate in Ukraine is much higher than standard. An objective factor of inflation in Ukraine is the use of power-, material- and labor- consuming technologies, decrease in production volumes, the extent of which will be analyzed below, as well as low export potential (not compatible with the volume of imports) and lack of export diversification. To overcome the disadvantages of the chosen model of the Ukrainian economy the factors that influence the achievement of a high level of financial - economic indicators of the country should be considered.

3. FACTORS THAT AFFECT THE ACHIEVING HIGH LEVEL OF THE FINANCIAL-ECONOMIC INDICATORS OF DEVELOPMENT BY THE COUNTRIES

There is no doubt that the high level of financial and economic indicators of the country (absence of budget deficit, reducing the government debt, inflation to average inflation in the countries with the most stable prices, long-term interest rates on government bonds, which, as stated above should not exceed by more than 2% of the average value of the corresponding rates in the countries with the lowest inflation), can only be achieved by establishment of a highly productive jobs with the appropriate level of wages, development of the export potential through export of final consumption goods based on the use of high-tech, achievement of the surplus in balance of trade and balance of payments.

The analysis of the production of industrial goods in Ukraine in the period from 1990 to 2011 shows that the structure of the industry was negatively changed (Fig. 5).



Source: Calculated using data [2]

Fig. 5. Comparing the structure of industrial production of Ukraine in 1990 and 2011 years

According to the official statistics [2], on which the constructed graph is based (Fig. 5), for the analyzed period in the Ukrainian economy a sharp decline in the share of engineering products (from 30.7 to 11.6% of total industrial output) occurred, reduction of share of light and food industry in total industrial production (from 29 to 11.6%) appeared and the raw material orientation of the economy was strengthened: orientation on the products of the initial output redistribution (share of mining, chemical and metallurgical industries has increased from 25.9 % to 64.2% of total industrial output). This process proceeded to the overall decline in production (Table 1).

Data in Table 1 shows that none of the listed branches has not reached the volume (in physical terms) of production in 1990, and output of such products as "textile" has decreased from 1990 to 2011 by 93% and up to the present time is only 7% of level of 1990, production of shoes and manufacture of refrigerators has dropped by 86% for each of these products.

This, in its turn, caused a sharp increase in imports of products including machine building, light and food industries, and other industries that produce the consumer goods. Targeting of owners of the large steel enterprises on metal exports (more than 80% of steel products Ukraine [2]) deprives the economy of Ukraine of opportunities to create modern production facilities at the expense of developing their own machine building, based on the national resources.

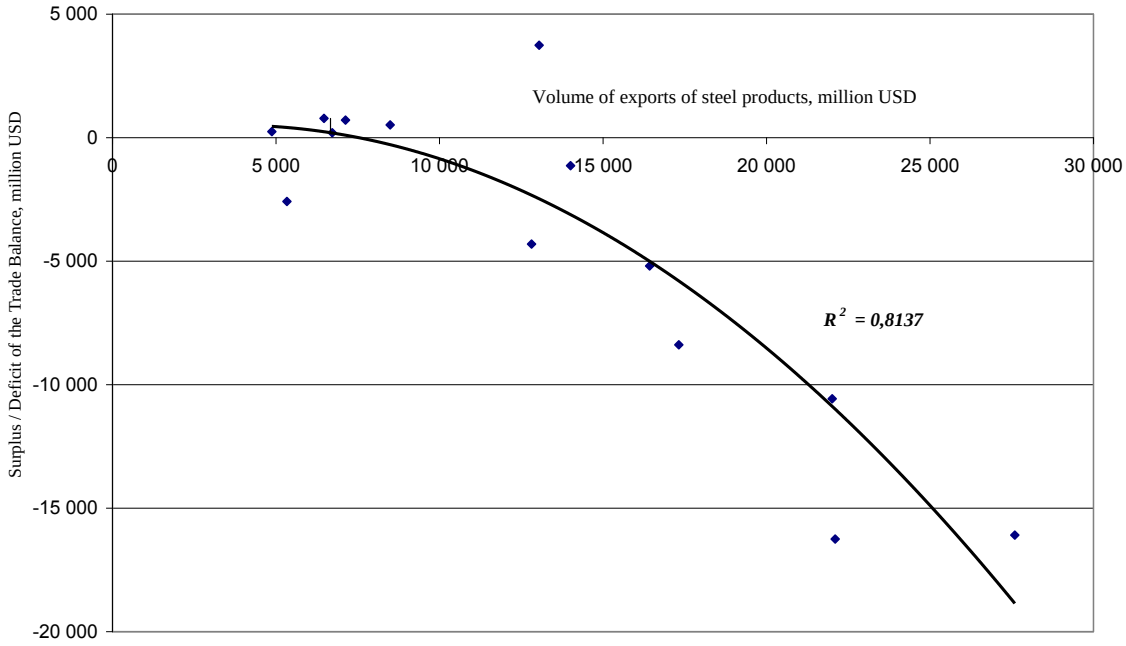
Thesis that metal exports is a positive trend, because it provides more than 40% of export earnings, is not supported by the actual situation: determined dependence of the negative trade balance of exports of metal with a high degree of reliability ($R^2 = 0{,}81$) indicates that the increase in metal exports leads to a rapid increase of the negative trade balance (Fig. 6). Such approach does not support the development of the processing industry, devastates natural resources, does not assist the formation of jobs in the national economy and provokes the necessity to import a wide range of products and, ultimately, adversely affects the payment (including trade) balance, unemployment and budget deficit. However, in Ukraine at the present there is no either established market or administrative mechanism which will direct production of lower repartition on the development of the national economy.

Table 1

Indexes natural output of certain goods in the industry of Ukraine by years (compared with 1990)

Year	Electric energy	Finished steel	Steel pipes	Motor vehicle	Refrigerators (household)	Textile	Footwear	cooked meats	Sugar
1990	1	1	1	1	1	1	1	1	1
1991	0,94	0,85	0,86	0,98	0,98	0,85	0,90	0,95	0,70
1992	0,85	0,77	0,78	0,90	0,93	0,76	0,73	0,84	0,54
1993	0,77	0,63	0,48	0,88	0,84	0,49	0,53	0,56	0,59
1994	0,68	0,44	0,26	0,56	0,72	0,24	0,20	0,49	0,50
1995	0,65	0,43	0,25	0,34	0,62	0,14	0,11	0,31	0,57
1996	0,61	0,44	0,31	0,06	0,48	0,09	0,07	0,24	0,49
1997	0,60	0,51	0,28	0,04	0,42	0,07	0,05	0,23	0,30
1998	0,58	0,46	0,23	0,17	0,43	0,07	0,06	0,17	0,29
1999	0,58	0,50	0,18	0,10	0,45	0,04	0,06	0,18	0,27
2000	0,57	0,59	0,27	0,16	0,50	0,06	0,07	0,19	0,26
2001	0,58	0,66	0,26	0,18	0,56	0,06	0,08	0,19	0,29
2002	0,58	0,68	0,24	0,25	0,65	0,07	0,08	0,23	0,24
2003	0,60	0,58	0,33	0,50	0,31	0,06	0,10	0,30	0,37
2004	0,61	0,60	0,33	0,89	0,30	0,09	0,11	0,37	0,32
2005	0,62	0,59	0,37	0,98	0,27	0,09	0,10	0,34	0,31
2006	0,65	0,58	0,43	1,36	0,37	0,08	0,11	0,33	0,38
2007	0,66	0,63	0,43	1,94	0,34	0,09	0,11	0,37	0,27
2008	0,65	0,53	0,39	2,05	0,25	0,09	0,11	0,37	0,23
2009	0,58	0,42	0,27	0,34	0,17	0,07	0,10	0,30	0,19
2010	0,63	0,46	0,30	0,38	0,18	0,07	0,13	0,31	0,27
2011	0,65	0,51	0,37	0,50	0,14	0,07	0,14	0,32	0,38

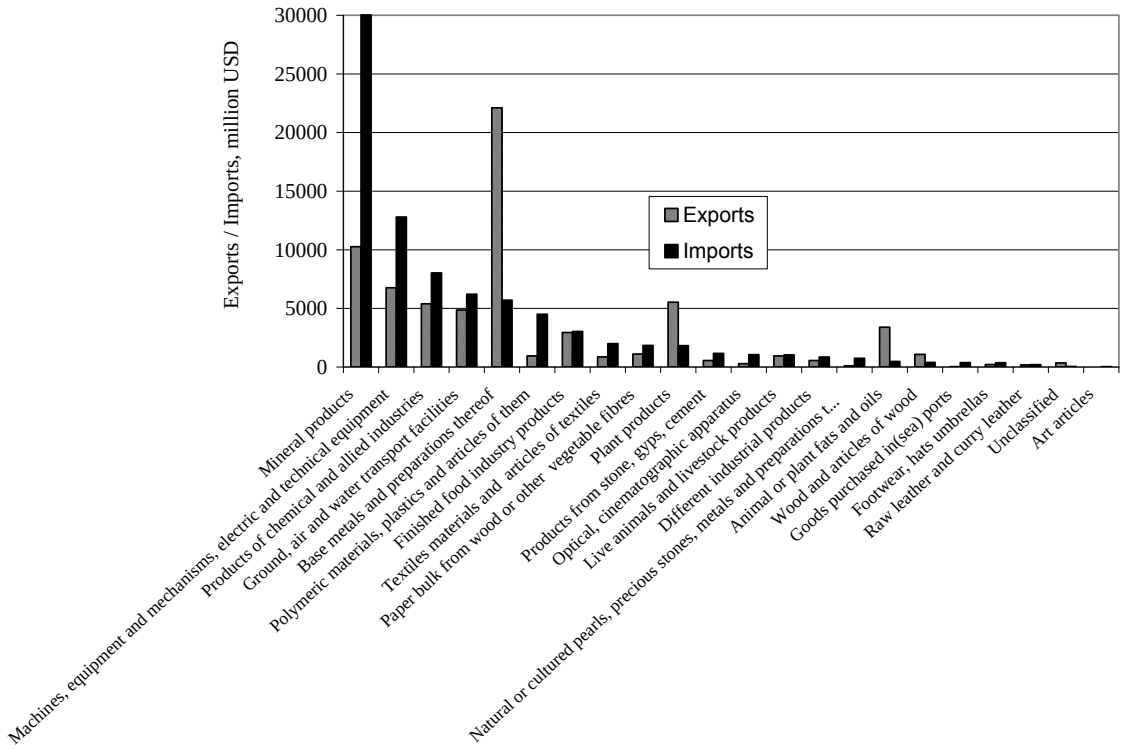
Source: based on data of the State Statistics Service of Ukraine [2]



Source: based on data of the State Statistics Service of Ukraine [2]

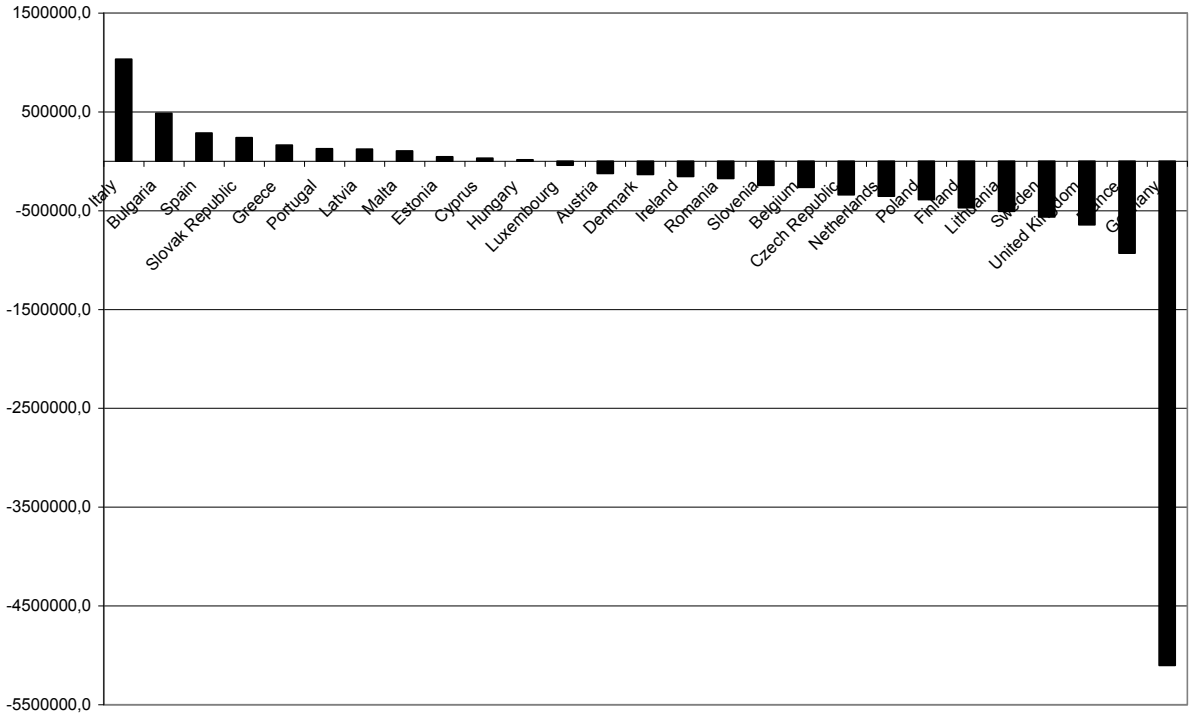
Fig. 6. Correlation of surplus/deficit of trade balance with volume of exports of steel products

Analysis of the structure of exports and imports of goods in Ukraine (Fig. 7) shows that by almost all goods Ukraine has negative balance (import costs exceed revenues from exports). This, in its turn, affects the stability of the national currency. Furthermore, as it shown in Fig. 8, Ukraine has a negative balance of trade with many countries of the EU.



Source: based on data of the State Statistics Service of Ukraine [2]

Fig. 7. Commodity Pattern of Foreign Trade of Ukraine in 2011, million USD



Source: based on data of the State Statistics Service of Ukraine [2]

Fig. 7. Surplus/deficit of trade balance of Ukraine with the EU countries in 2011, thsd. USD

According to official data of the National Bank of Ukraine [3], the balance of goods and services of Ukraine is negative and is -10,157 million USD [3]. Thus, if the services are in a small surplus (6095 million USD), balance of goods is -16,252 million USD: receipts from exports are 69,418 million USD and payments for imported goods are 85,670 million USD.

From substantiated above it is clear that Ukraine at this stage of development is a country where the "heavy industry" (mining, manufacturing and distribution of electricity, gas and water, coke and petroleum products, iron and steel industries), which is 64.2% of the total volume of industrial production, predominates. Moreover, such branches as machine building and light industry obtain only a small part of industrial production (27 - 28%). These facts are not conducive to creation of high-tech jobs, increase of employment, formation and effective functioning of S&MB and provoke the need to increase the volume of imports in order to cover decline in production volumes (in physical terms).

4. DIRECTIONS AND PROSPECTS FOR ACHIEVING THE ECONOMIC CRITERIA OF MAASTRICHT BY UKRAINE

It follows from the above that the way for achieving the economic and financial criteria by Ukraine, which will allow it to effectively integrate into the European Economic Community, is to provide a positive balance of trade and balance of payments as a whole.

For the present in Ukraine, experts offer several ways to overcome the negative trade balance. First - import restrictions by raising import duty. This way, as proven by the theory and longstanding international practice, leads to the economic isolation of the country, reducing the quality of goods and services, reducing the efficiency of the functioning of domestic enterprises, and as a result, limiting the needs of citizens and their quality of life. Import restrictions are unavailable in terms of integration and globalization: import naturally increases (and should grow) during the integration. It should be noted that for the past 60 years, international trade in nominal terms increased by 258 times [1]. Therefore, the task of the country is to develop the export

potential, the growth of which must be greater then imports, objectively determined by integration of national economies into the join global system. Besides regulatory policy should be focused on overcoming the resource export orientation, encouraging the owners of capital to supply raw materials primarily to their domestic manufacturing facilities, which is the key to creating new jobs

The second way to overcome the negative balance of trade, offered by experts - is the creation of "import substituting" products.

This thesis has been repeatedly declared during the existence of the administrative-command economy in Ukraine as well. This direction is also targeted on reducing imports, which, as mentioned above, conflicts with the principle of free movement of factors of production and its results.

The presence of exporters' already-established technologies will always be more effective than the creation and development of the similar technologies by the country-importer. So, under conditions of high rates of scientific and technical progress and the availability of powerful transnational corporations, this way is seemed to be ineffective.

Alternative for the listed direction for overcoming the negative trade balance is to create marketing based approach to creation of the new products capable to satisfy human, owners' and managers' of capital needs which are still not covered by the existing products (technologies). This direction requires a high level of development of science and education in the country-innovator, but it is the only one which can bring the country to a high level of development.

Considering the prospects for Ukraine under the proposed scenario it should be realized that now both the owners of capital and the state do not pay enough attention to development of science and education, which is reflected in the structure of the state budgets of recent years, direction of use of enterprise income.

CONCLUSION

Despite the state of production facilities in Ukrainian economy, it should be noted that Ukraine with large area, big population and high intellectual potential is the European country that is able to achieve the required level of financial and economic criteria, provided by the Maastricht Treaty and other EU regulations. Particular attention in the process of overcoming the financial barriers to integration into the European community should be paid to insuring the innovative development of export potential, providing with the market methods (creating a competitive environment, liberal tax policy) development of diversified economy, focus on the development of industries that contribute to mass creation of innovation jobs.

Using free movement of capital in the national interest, the conditions for attracting foreign investment mainly from countries that have advanced the technologies of production of goods and services and interest in increasing of their use should be ensured; the fiscal policy should be improved in order to complete by budget its nature functions: formation of skilled, healthy workforce with a high level of industrial and general culture. Given the close relationship of the national economy of Ukraine with the EU countries it is necessary to create a unified scientific, educational and industrial space, which driven by synergetic effect will increase the efficiency of the integrated economy. Listed tasks require scientific support. Exactly on these areas creative efforts of all stakeholders should be directed.

REFERENCIES

1. Алимарданов Р. Что мешает украинским компаниям конкурировать на внешних рынках / Р. Алимарданов / [Электронный ресурс]: Режим доступа http://forbes.ua/business/1344904-chto-meshaet-ukrainskim-kompaniyam-konkurirovat-na-vneshnih-rynkah#print
2. Офіційний веб-сайт Державної служби статистики України / [Електронне джерело]: Режим доступу URL:http://ukrstat.gov.ua/

3. Офіційний веб-сайт Національного банку України / [Електронне джерело]: Режим доступу URL:http://bank.gov.ua/control/uk/publish/category?cat_id=57897
4. The official web-site of The Treaty on European Union / [Electronic source]: Access mode: http://eurlex.europa.eu/en/treaties/dat/11992M/htm/11992M.html
5. The official web-site of The World Bank / [Electronic source]: Access mode: URL:http://www.worldbank.org.

THE INFLUENCE OF THE WORLD ECONOMIC CRISIS ON THE DEVELOPMENT OF UKRAINE'S METALLURGICAL INDUSTRY UNDER CONDITIONS OF THE INTERNATIONAL INTEGRATION

Liudmila Didyk, Irina Lisovenkova

The issues of consequences of financial economic crisis for metallurgy, an important industry of Ukraine, are considered. Principal reasons and consequences of the crisis for all the countries in the financial sector, foreign trade, in development of all industries are given. Development trends of the world metal market, general volumes of realization and internal consumption of domestic industry are considered. Main problems and directions of development strategies for metallurgy of Ukraine are highlighted.

INTRODUCTION

The financial economic crisis, which started in the developed countries in 2007-2009, has resulted in the global economic decline and affected developing countries the most negatively. Some of them (first of all, countries of South-East Asia and Latin America) have appeared to be less vulnerable to the world crisis factors as a result of developing relatively strong macroeconomic positions in the previous years. Instead, European countries underwent severe stroke because of the macroeconomic development imbalance, namely balance of payment deficit, fixed or strictly managed currency exchange rate, budget deficit and large-scale liabilities of state and corporative sectors as well as the low level of exchange reserve. Concerning Ukraine, its financial and economic crisis is one of the worst against both the CIS countries and states of Central and Eastern Europe.

Professor Prabhu Guptara, the Executive Director of Wolfsberg Platform for Management Training of Union Bank of Switzerland subsidiary, points out the following main reasons of the world financial crisis: surplus production and oversupply which appropriately leads to severe competition; forthcoming magacorporations and, as opposite, companies which occupy narrow niches; eight "bubbles" (among which the first are the "housing bubble" and the "banking bubble"); attempts to avoid solving the real problem: leverage; power in business; and as a result – hyperinflation [7].

The deputy director of Sociology Institute Yevgen Golovakha believes that the economy with virtual money cannot be permanently growing. These crises are consequent and even useful for the world economy in a certain way. Right now all the system is being reconsidered regarding its correspondence to the real state. The same thing goes for Ukraine. If there were not such temperate crises, there could occur a great outbreak and both the state and the world economy would burst like a bubble [2].

The development of the European liability crisis became possible due to a number of simultaneous complicated factors among which there are the following: financial market globalization; easy access to bank loans in 2002-2008 which resulted in issuing loans with a high risk level; the world finance crisis of 2007-2012; the trade balance deficit of a number of countries; bubbles which eventually burst in the real estate market; the low rate of the economic development

since 2008; the failure of tax and budget policy measures directed at managing the value of the state benefits and expenses; the wide-spread rendering of the state financial emergency aid to banking spheres and private bond holders, debt purchase or transferring the private sector losses to taxpayers.

1. NEGATIVE CONSEQUENCES OF ECONOMIC CRISIS

All the world leading countries have been affected by the economic crisis. The influence of the global financial crisis was particularly dramatic for the countries deeply integrated into the world economy. Almost all the countries including Ukraine had their industries, financial sector and international trade affected.

The main negative consequences are considered the following: decreasing volume of the GDP and additional revenue of the budget (fig. 1); industrial production decline and, as a result, decreasing sales volume, particularly in such industries as metallurgy, mechanical engineering, mining, electric-power an chemical industries; the recession in the industrial production has led to slowing rates of enterprises' foreign economic activities; the increase of the inflation level; increasing consumer price rating; the external debt growth.

All these consequences are not only interrelated, but also incorporate in one closed loop all the countries which suffered to certain extent from the world crisis.

Under conditions of the world financial crisis, which spreads across the national markets, special attention should be drawn to the foreign economic activity of every separate country. For countries with moderate economy which is open this issue is particularly topical. Ukraine is one of these countries. High dependence on energy resource supplying and conjuncture of the world markets make the domestic economy vulnerable to the changes of external environment factors.

The openness of the economy is indicated by the fact that the volume of Ukrainian enterprises' annual export makes up 60 % of the country's gross domestic product, 37% of which is metallurgic production.

At the same time most of Ukraine's import is made by supplying energy resource (natural gas) whose largest consumers are metallurgic enterprises. That is why the analysis of Ukraine's industrial enterprises' foreign economic activity should be made based on the research of the metallurgic industry.

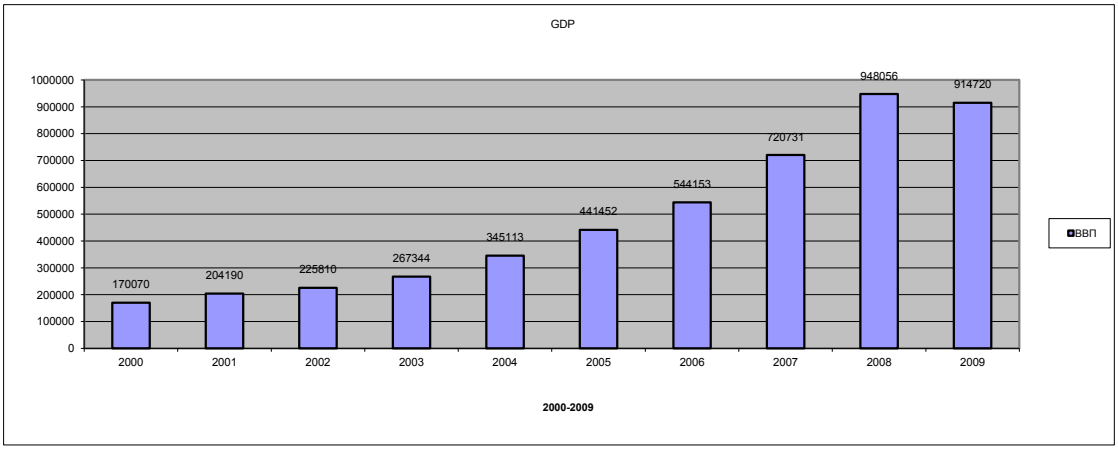


Fig. 1. GDP dynamics in Ukraine

Source: www. ukrstat. gov.ua

The demand fluctuation in the world market of metal end energy resources influences essentially the efficiency of Ukrainian metallurgists' activities and the domestic economy in general. Moreover, the negative dynamics of Ukraine's trade balance and negative balance of

foreign trade, which has developed in recent years, indicate the problem in managing the foreign economic activities of strategic sector enterprises.

The world metal market (particularly the Asian and American ones) used to consume everything produced in Ukraine and at prices much higher than in Ukraine. The decreased consumption as a result of the world finance crisis has led to extremely negative consequences for Ukrainian metallurgists. While the world largest manufacturers announced decreasing production and export volumes by 10-15%, Ukrainian enterprises had to cut down the production volume by 90%, some of them went out of business. Over half of 26 blast furnaces were closed down which has never happened since the World War II.

The metallurgists themselves consider that the reasons for the strategic industry decline are caused by the internal factors which include increasing tax burden, increasing rates for railway transportation and problems with the GDP returning. Nevertheless, a detailed analysis of the situation is advisable.

Ukraine takes the eighth place among the countries manufacturing metallurgical production.

The world financial economic crisis of 2008-2009 influenced considerably the capacity of the metallurgic complex production power and positioning of the domestic metallurgic manufacturers in the world market. Thus, steel production in Ukraine decreased by 13.3% in 2008 (compared to the previous year), by 19.4% in 2009, 2010 showed the increase by 12.4%. in other countries which are the main steel manufacturers the decrease during the crisis was smaller whereas in China and India there was certain increase in spite of the crisis (table. 1).

Table 1.

The main world steel manufacturers (mln. tns)

Country/year	2006	2007	2008	2009	2010
China	423,0	494,9	500,5	573,6	626,7
Japan	116,2	120,2	118,7	87,5	109,6
USA	98,6	98,1	91,4	58,2	80,6
RF	70,8	72,4	68,5	60,0	67,0
India	49,5	53,1	55,2	62,8	66,8
South Korea	48,5	51,5	53,6	48,6	58,5
Germany	47,2	48,5	45,8	32,7	43,8
Ukraine	40,9	42,8	37,1	29,9	33,6

Source: www. ukrstat. gov.ua, http://metallurgy.at.ua

The internal consumption of metallurgic production in Ukraine is rather limited (Chart 2). Moreover, the tendency can be seen towards its decreasing in 2008-2010 compared to the year 2007 by 8.4, 3.9 and 8.4% correspondently.

The increase of the internal consumption share in the structure of sold production in 2009 (from 21.2% to 25.7%) is explained by the considerable decrease of the volume of metal production export that particular year (by 32% compared to the previous year).

The import of the metallurgic production has increased by 64.4% compared to 2010 which has resulted in the import share growth within the structure of the internal metal production consumption (in 2010 import made up 38.5% in the general volume of metal production consumption).

The decrease of the internal consumption of the domestic metallurgic production in the crisis years 2008-2010 can be explained by several reasons.

Compared to 2007, the following years witnessed the production decrease in the economy branches which form the main demand for the metal production. The deepest decrease was seen in mechanical engineering where production volume began falling from the end of 2008. The greatest decline was registered in the fourth quarter of 2008 at the enterprises producing cars (50.2%),

household appliances (47%), machines and equipment for agriculture and forestry (35.9%), railway rolling stock (35.8%).

The negative trend became stronger in 2009, when production rate at mechanical engineering enterprises made only 54.9% to the level of 2008, including enterprises producing machines and equipment for mining and construction – 52.1%, for agriculture and forestry – 55.1%, motor transport – 19.1%. [1,7]

Table 2.

General volume of sales and internal consumption of the domestic metal production

Factor/year	2005	2006	2007	2008	2009	2010
Volume of the domestic metal production sales, bln, hrn	94,7	109,5	141,0	177,1	127,9	167,3
Including export of the domestic metal production, bln, hrn	68,3	77,8	99,3	139,5	95,0	131,9
The internal consumption of the domestic metal production , bln, hrn	26,4	31,7	41,7	37,6	32,9	35,4
Concerning the sales volume	27,8	28,8	29,6	21,2	25,7	21,2
Metal production import bln, hrn	8,6	11,2	16,5	24,9	13,5	22,2
Import in the general volume of the internal consumption bln. hrn.	24,6	26,1	28,3	39,8	29,1	38,5
General volume of the internal consumption (the domestic production plus import) bln, hrn	35,0	42,9	58,2	62,5	46,4	57,6

Source: www. ukrstat. gov.ua, http://metallurgy.at.ua

2. THE PROSPECTS FOR DEVELOPMENT OF METALLURGICAL INDASTRY OF UKRAIN'S

The prospects of Ukraine's metallurgical industry development greatly depend on how fast it can renew its positions in the world markets. The export volume for metal production of group 72 "Ferrous metals" (Ukrainian Foreign Economic Goods Classification) in 2010 were 5.8% higher than the rates of 2009. The greatest increase was in the export of ferroalloy – by 42.8%, bars and fittings – by 16.9%.

Against the continuous demand of foreign consumers, Ukrainian metal manufacturers considerably increased the production capacity in January, 2011. [7]

According to the State Statistic Service, in January, 2011 compared to January, 2010, the production increase in metallurgical and ready metal appliance manufacturing made up 13.3%, including enterprises producing cast iron, steel and ferroalloy – 8.6%, tubing – 54.7%, other kinds

of steel preprocessing – 30%, ready metal appliances – 26.7%. at the same time the volume of non-ferrous metal production decreased (by 0.2%).

Most volume of metal production in the first quarter in 2011 was dispatched to the EU and Asian countries. The export price in January and February, 2011, increased on average by 15-20 $ USA/ton, including bars from non-alloy steel – up to 715-720 $/ton; angle bars – 659-670$ / ton; processed cast iron – 500-520 $/ton. [2]

Under conditions of the world crisis the investment of updating and refitting of metallurgical enterprises dramatically decreased: the annual volume of investment into the capital asset decreased by 42% in 2010 compared to 2007 whereas direct foreign investments decreased almost in 3.5 times (tabl. 3). [7]

Nowadays, the enterprises of the industry are not ready to use global measures to reconstruct and reorganize the production whereas the investments obtained are used to complete projects launched earlier and to use short-term highly profitable measures.

The most accepted sources of financing while realizing modernization projects are the enterprise's own funds and loans.

There is an urgent need to introduce energy efficient technologies, to transfer the production cycle from open-hearth furnace to the converter method of steel production. However, requires time and considerable investment.

Table 3.

Metallurgical industry investment

Factors/year	Annual volume of investment into the capital asset, bln. hrn				Annual volume of direct foreign investment, bln. hrn			
	2007	2008	2009	2010	2007	2008	2009	2010
Metallurgic production and production of ready metal products	11234	10503	6683	2968	156,2	-240,2	44,7	383,3
Industry	64341	76618	57658	35469	1893	48,5	969,3	766,2

Source: www. ukrstat. gov.ua, http://metallurgy.at.ua

Decreasing consumption of metallurgical production by industrially developed countries makes it necessary to search for new marketing outlets. There is no point waiting for considerable growth of the internal consumption.

This is the foreign economic activity which allows metallurgists to get economic, scientific and technical and social effects from the activity. And increasing production volume, artificial reduction of financial results, insufficient provision of raw materials for production process are caused rather by the problem of managing metallurgical enterprises than by the world conjuncture or the internal market factors. By now a number of Ukrainian metallurgical enterprises have already become the property of foreign owners (the Kryvyi Rih Metallurgical Combine); others (Yenakievo Iron and Steel Works) have encountered the problem of paying foreign loans which were given for high interest rates. All these factors can cause Ukraine to lose its strategic industries. Future foreign owners are even less interested in social development or improving welfare of the country's population.

Foreign economic activities of the metallurgical enterprises make up the strategic branch of the state economy, and its efficient performance influences both macroeconomic rates and the population's welfare. Currency revenues from the metal export form Ukraine's currency reserves.

The analysis of the foreign economic activities of the metallurgical enterprises proves the necessity of changes in developing the relevant management system and mechanisms which would allow harmonizing interests of enterprises, owners and subjects of the external environment. This will let the enterprises recover from the crisis and will allow the domestic economy to overcome possible inflation growth.

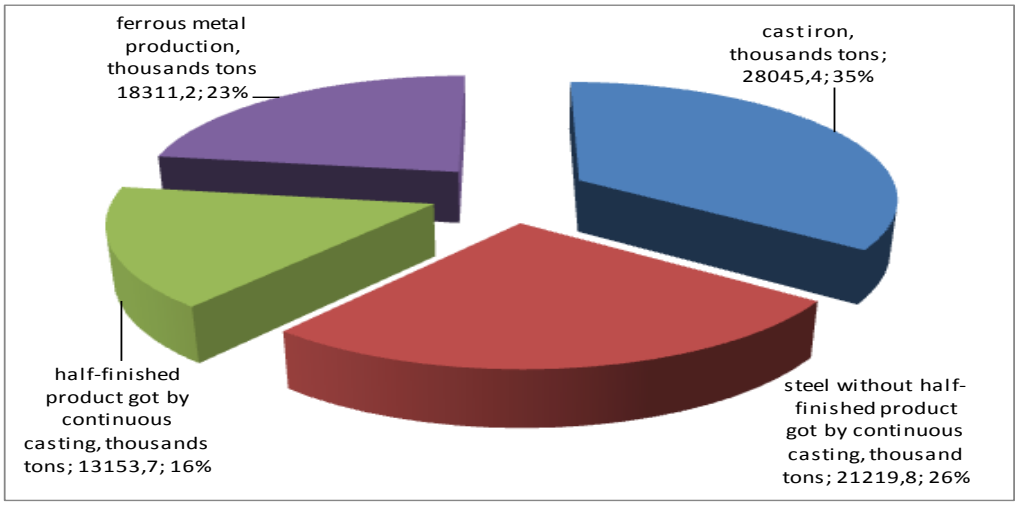


Fig. 2 – The structure of exporting metallurgic products from Ukraine in 2010
Source: http://metallurgy.at.ua

It is obvious that pre-crisis rates of development and investment capacity were not sufficient compared to the capacity of profits which companies could get due to preferential taxation and saving from acquired assets. The industry managed neither to overcome a considerable lag behind the world level of the ferrous metallurgy nor to diversify the production and develop an efficient marketing outlet for metallurgical production within Ukraine.

Taking into account the fact that metallurgy is Ukraine's leading industry, it is necessary to take urgent measures to resolve the crisis. Eliminating at least 50% of the factors which hamper the branch development, developing the demand for the production and providing preferential taxation terms will revitalize not only the metallurgical industry but also mining and mechanical engineering industries.

It is also necessary to emphasize that the main state strategy to develop the metallurgical industry includes:

- mechanisms of the state regulation of export activities in the European Union market as well as Ukraine's metal production market;
- prospects of cooperation of Ukraine's metallurgical enterprises in the most profitable segments of the metal production market of the CIS states, namely, realization of joint investment projects with manufacturers of Italy, Greece and Germany;
- developing tendencies and complex organizational and informational measures regarding the promotion of the export activity on the part of the state management, namely, founding Ukraine's Institute of Cast Iron and Steel;
- providing recommendations on manufacturers' adaptation to the demands of the regional metal production markets, promoting the production into the external markets, developing the organizational structure for the production marketing;
- regulating investment terms, conducting credit and amortization policies, including speeded amortization of capital assets;
- providing financial aid in terms of grants, subsidies, subventions, budget loans.

CONCLUSION

The world financial crisis has shown how interrelated enterprises, state establishments, economy sectors and whole countries are. In the process of globalization a global net of the world scale develops, that is why it is impossible to foresee certain breaks. Strategic planning and working out scenarios in case of negative events are vitally important even in the period of economic prosperity. The crisis brings the greatest losses to those enterprises, economies which are not ready for it. Moreover, it appears when nobody awaits. “We cannot control the internal environment, - Alfred Sloan, one of the General Motors said, - or foresee precisely all the changes in it, but we can strive for flexibility in order to overcome economic shock” [3].

REFERENCES

1. World Steel Association [Electronic resource]. – Access mode: http://www.worldsteel.org/;
2. Iron And Steel Statistics Bureau [Electronic resource]. – Access mode: http://www.issb.co.uk/;
3. Sloan Alfred P., Jr. My Years with General Motors. Currency Doubleday, NY, 1990
4. Головаха Є. Фінансова криза – витверезник для України // Україна молода.– 2008. - № 220.
5. ДП «Держзовнішінформ» // Металургійний монітор. Стальний прокат. - № 19. - 2011.
6. Статистичні, аналітичні матеріали / Портал Ukrstat [Electronic resource]. - Access mode: http:// www. ukrstat. gov.ua/
7. Шимковіч В. Короткий огляд промисловості України // Металургія України, №10, 2009: [Electronic resource]. – Access mode: http://metallurgy.at.ua/-www.kommersant.ru

THE INTERNATIONAL CAPITAL MOVEMENT AS A FACTOR OF INFLUENCE ON INNOVATIVE DEVELOPMENT TENDENCY OF UKRAINE’S ECONOMY AND ITS INTEGRATION INTO THE WORLD ECONOMY

Liudmyla Solianyk

The research results regarding Ukraine’s solving the strategic task of financial mechanisms of regulating the international capital movement and strengthening its positive effect on Ukraine’s economic development and innovative renewal of its economy are considered.

INTRODUCTION

The international capital movement in the world economy space is the most dynamic form of the economic globalization, its essential motive power which promotes the development of international political alliances, social, demographic and economic improvement in the economy of particular countries and their groups. The analysis of the world capital movement condition and investment processes gives evidence of the interrelation between the international investment development and economy globalization. The international capital movement acceleration, first of all in the form of the international investment, influences the scale and tendency of structural breaks within particular countries and regions, promotes considerable increase in economic development efficiency of most countries of the world, facilitating the countries’ access to markets and financial resources, effective corporate management experience. This is testified by increase in the world trading volume during the past 50 years by 17 times (and the world GDP by 6 times). The capital worth about 20 trillion USA dollars functions within the present-day international securities market. The annual volume of international credits makes up to 15 trillion of the USA dollars and that of

direct international investments makes up to 500 billion of the USA dollars [5] which testifies the actual scale of the international capital movement (regardless the present financial economic crisis).

Ukraine takes a minor place among the main European countries importing the international capital. This situation is conditioned by the fact that developed countries more rapidly create surplus capital which can be further invested more successfully beyond the national boundaries providing more profits. Having the national economy which is more resistant to economic crises, the developed countries bear negative effects of the world financial crisis more easily. Thus, the theme of the research can be considered topical for the present day Ukrainian economy.

The article represents the research results concerning Ukraine's solving the strategic tasks to develop the financial mechanism of regulating the international capital movement and strengthening its positive effect on Ukraine's economy development tendencies and innovative renewal of its domestic enterprises.

1. ANALYSIS OF TENDENCIES OF UKRAINE'S INNOVATIVE DEVELOPMENT

The importance of strengthening the influence of the international capital movement on the economic development of the world countries is connected with the further development and activation of the mentioned processes in the world economy. All these require their further research.

The phenomenon of the international capital movement, actual international capital flows and their influence on developing the international communication and organizing economic relations in the countries of the world was studied and described in theoretical and practical works by the following scientists: U. Balagurak, P. Buriak, Yu. Gnatenko, O.Gupalo, M. Dovbenko, S. Mocherny, O. O. Peredriy, A.Slyvotsky, A. Filipenko and others. The topicality of the issue concerning Ukraine within the international investment space at the present stage of its economic development has drawn attention of Ukrainian scientists: A. Ignatenko, L. Ryneiska, P.Sabluk, G. Kharlamov. Further research of the influence of the determiners of the international capital movement process on the tendencies of Ukraine's economic development is the part of the general problem to be solved. The outlined issues make up only a small part of the urgent problems as to identifying the tendencies of Ukraine's development in the context of the international capital movement intensification; these problems require a detailed analysis and research within particular scientific works.

Due to the current technology level of its economy, Ukraine cannot expect large-scale entering the world market since it is completely divided among the economically developed countries; the latter stand out against new competitors, and, because of the low level of the domestic enterprises' innovative development, Ukraine cannot provide the world market with competitive production in sufficient amount yet. So far Ukraine has lacked the effective mechanism of implementing completed scientific and technical works and technologies made on the basis of budgetary financing into industries. On the whole, the scientific and technological development is still uneven in different spheres of the country's economic complex which enhances the process of its destructive changes. It is well known that the prime tool for the generalized mark for countries' competitiveness is the Global Competitiveness Index (GCI). According to the rating of 2010-2011, Ukraine went 7 points down from the 82nd to 89th place. The drop in the rating can be explained by the low quality of the institutes (134) as well as the high level of inefficiency of the market of goods and services (129) which suppresses the competition. The time history of the subindex group "innovations and risk factors" for Ukraine (fig. 1) for five years shows the stability according to the significance and the lowering according to the rating (apart from 2008).

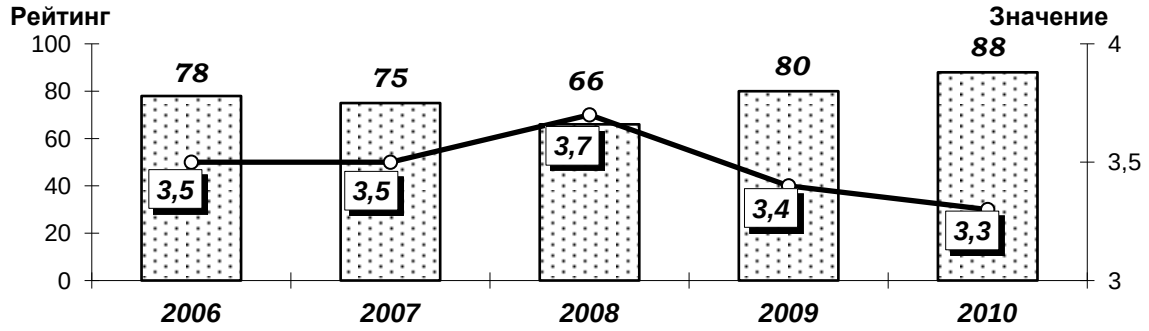


Fig. 1. The time history of the subindex group "innovations and risk factors" for Ukraine Source: compounded by [3]

Within the specified subindex in Ukraine in 2010-2011, the rating of right line indicators of the foreign investment and technology transfer is low (position 124), as well as that of firms' absorbing technologies – position 96 and implementing new technologies – position 92 which proves the existence of all the signs of the technological crisis in Ukraine.

Studying innovation activity of economic subjects in Ukraine has shown that the current economic process is going on against the general negative background when manufacturing the majority of the most important kinds of progressive efficient industrial products is decreasing radically. Lack of economic motivation, unstable financial provision whose deterioration is particularly tangible under conditions of intensification of the world financial crisis influence the innovation activity negatively. One can observe a clear tendency towards the decrease of the number of enterprises which are engaged in innovative activity and realize innovation projects (fig. 2). Compared to the year 2000 when the specific weight of industrial enterprises involved in innovation activity made up 18%, the year 2009 witnessed the decrease of such enterprises down to 12.8%. Regarding the specific weight of industrial enterprises involved in implementing innovations, it decreased in 2009 compared to 2000 by 4.1 percentage point and made 10.7%.

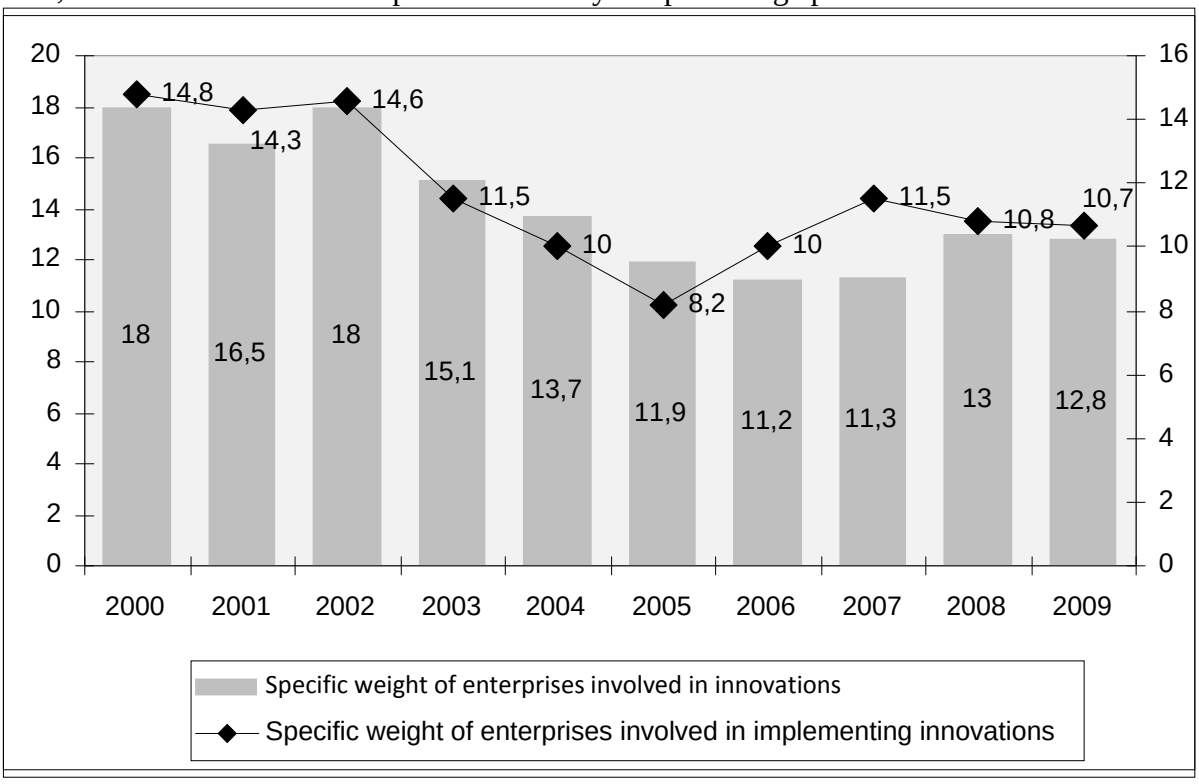


Fig. 2. Part of industrial enterprises involved in innovation activity Source: compounded by [1]

The industrial enterprises' low innovation activity causes a minor percentage of innovation production in the total volume of the industrial products sold. (fig.3).

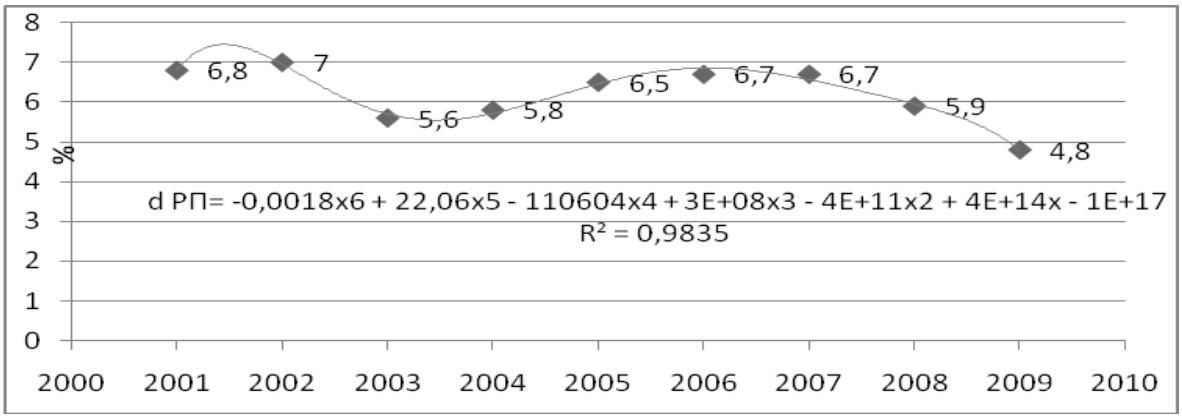


Fig. 3. Dynamics of the specific weight of innovation production in the total volume of Ukraine's industrial production

Source: compounded by [1]

The data from Figure 2 shows that the percentage of innovation production in the total volume of the industrial products during the period from 2001 to 2009 had unstable dynamics: 2003-2007 were characterized by positive dynamics towards growth, meanwhile beginning with 2008 the specific weight of innovation production in the total volume of the industrial products had a negative tendency towards decreasing by 0,8 percentage points in2008 compared to 2007 and by 1.1% in 2009 compared to 2008. The highest rating of the specific weight was observed in 2001 and made up 6.8 percentage points, the smallest part of the innovation production in the total volume of the industrial products during the period studied recorded in 2009 and made 4.8 percentage points.

The period from 2002 to 2008 observed the investment volume increase both regarding all types of economic activity by 200508 thousand hrivnas and in industry by 2009 (fig. 4). During 2008-2009 there was a slump of investment into the capital assets, but at the beginning of 2010 the situation improved. Compared to 2009 the volume of investment regarding all types of economic activity increased by 19315 thousand hrivnas, and that of the industry grew by 900 thousand hrivnas.

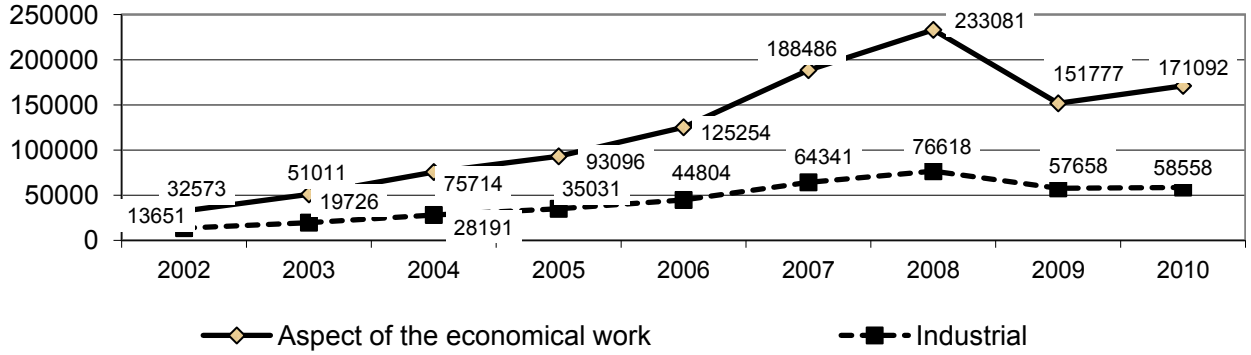


Fig. 4. Dynamics of investment into the capital asset regarding all types of economic activity and industry (in real prices; million hrivnas.)

Source: compounded by [1]

Nowadays Ukraine occupies a leading place in the world in such spheres of basic sciences as physics, mathematics, chemistry, physiology, medicine; it has significant works in the field of laser, cryogenic, and aerospace engineering, communication and telecommunication facilities, programme production. However, owning considerable intellectual and scientific and technical potential, Ukraine has low rating of the innovation development. The statistics given testifies, on the one hand, the existence of significant potential of the innovation development (considerable

opportunities for research and design works concerning factors of higher education development, of the level of research and development institutions, of number and qualification of scientists and engineers etc.), but on the other hand, low efficiency of its application which, in turn, causes the necessity to search for effective mechanisms promoting the national innovation system development. The national innovation system should become an environment where innovation programmes encouraging foreign capital are developed and realized, efficient solutions of particular innovation tasks in different spheres of the country's economic and social life are provided, priority innovation development is defined.

2. THE INFLUENCE OF THE INTERNATIONAL CAPITAL MOVEMENT ON OPPORTUNITIES OF UKRAINE'S INNOVATION DEVELOPMENT

The research has defined that the principal source of financing industrial enterprises' expenses for innovation activity is still made up by their own (reinvestment) means. The overwhelming majority of economy subjects in the industry, in mechanical engineering in particular, develop innovation production, services, provide financing of innovation processes at the expense of their own capital (chart 1). The analysis of statistics indicates that during the period of 2004-2010 their part in the total volume of expenses for financing innovation activity in 2004 made up 77.3% and in 2010 it was 59.4% which testifies the tendency towards decreasing opportunities to finance enterprises from this source.

The data of Chart 1 show an increasing role of foreign investors in financing the innovation activity of Ukraine's industrial enterprises in recent years. Limitation of their own financial resources causes a necessity to involve the foreign capital (mainly in the form of direct foreign investment) in the industrial sector. Naturally, this is the direct foreign investment which is one of the most important aspects of the foreign capital movement and its major goal is to provide realization of an investor's long-term interest in any enterprise located in our country. The direct investment serves as an indirect indicator of its efficiency, guarantee the stable market (or develop the foundation for entering other countries' markets); give the right of direct control or an active part in managing the enterprise by making use of profit reinvestment mechanism, acquiring some shares and intracompany loans abroad as well as applying nonstick forms (making subcontract and license agreements, franchise etc.).

Table 1

Dynamics of the source structure of financing the innovation activity of Ukraine's industrial enterprises

Financing sources	2004	2005	2006	2007	2008	2009	2010
State budget funds, %	1.4	0.5	1.9	1.3	2.8	1.6	1.1
Enterprise's own funds, %	77.3	87.7	84.6	73.3	60.6	65	59.4
Foreign investors' funds, %	2.5	2.7	2.9	3	1	19	30
Domestic investors' funds, %	0.2	1.4	0.4	0.2	1.4	0.4	0.4
Local budget funds, %	0	0.3	0.2	0.1	0.1	0.1	0.1
Other sources, %	18.6	7.4	10	21.7	34.1	13.9	9

Source: compounded by [1]

Let us consider the current tendencies of capital export and import in Ukraine. In 2009 the capital outflow according to the balance of payments made $12 billion, but 2010 registered a positive balance of $7.7 billion. At the same time inpayments of the direct foreign investment in 2009 made up $4.6 billion and direct investment grew up to $5.7 billion which allowed balancing the negative influence of the capital outflow from the country. In 2011 foreign investors invested $6473.1 billion of direct investment (stock capital) into Ukraine's economy. In January 2012 the volume of direct foreign investment (stock capital) into Ukraine's economy made up $49362.3 billion which is 10.2% more than the investment volume in 2010 and calculated per capita made

$1084.3. The investments came from 128 countries of the world. From the European Union countries there came $39411.2 million of investment (79.9% of the total share capital volume), from the CIS countries – $4011.3 million (8.1%), from other countries of the world – $5939.8 million (12.0%) [2]. The top ten of the major investing countries, whose total direct investment volume is over 83%, include: Cyprus – $12645.5 million, Germany – $7386.4 million, the Netherlands – $4822.8 million, the Russian Federation – $3594.5 million, Austria – $3423.1 million, Great Britain – $2508.2 million, France – $2230.7 million, Sweden – $1744.0 million, the British Virgin Islands – $1607.0 million and the USA – $1043.1 million (fig. 5).

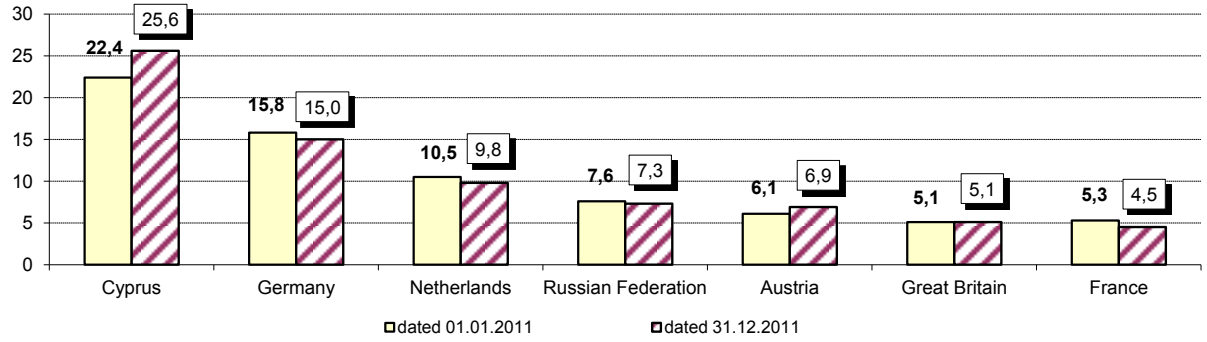


Fig.5. Distribution of direct investment (share capital) into Ukraine concerning the major investing countries (in % to the total volume)

Source: compounded by [2]

$16318.5 million (33.1% of the total volume) of the direct investments is accumulated in financial establishments. Industrial enterprises accumulate $15238.6 million (30.9%), including processing industry – $13056.8 million and mining – $1492.4 million. Regarding the branches of processing industry $6084.2 million of direct investments was invested into metallurgical manufacturing and production of finished metal products, $2065.7 million was invested into production of food, drinks and tobacco goods – $2065.7 million, chemical and petroleum chemical industries got $1375.8 million, mechanical engineering – $1226.0 million, manufacturing other nonmetal mineral production – $893.0 million. $5721.5 million (11.6%) was invested into organizations dealing with real estate, leasing, engineering and providing services for entrepreneurs, $5193.5 million (10.5%) was invested into enterprises of trade, car servicing, household appliances and articles of personal consumption.

Among the regions leading in the volume of obtained investments are the city of Kyiv – $24459.1 million (49.6% of the total volume of direct foreign investment), Dniepropetrovsk region – $8006.2 million (16.2%), Kharkivskiy – $2745.7 million (5.6%), Donetskiy – $2513.6 million (5.1%), Kyivskiy – $1718.9 million (3.5%), Lvivskiy – $1358.2 million (2.8%) and Odesskiy – $1221.7 million (2.5%).

The indebtedness of Ukrainian enterprises on credits and loans, trade credits and other liabilities (debt Instruments) to direct foreign investors made $7960.0 million in January 2012. The total volume of direct foreign investments made up $57322.3 million.

Direct investments from Ukraine were made into 47 countries of the world, most of them were directed to Cyprus (91.9%). In January 2012 the direct investment volume (stock capital) made $6898.0 million, including the EU countries – $6517.5 million (94.5% of the total volume), the CIS countries – $282.0 million (4.1%), to other countries of the world – $98.5 million (1.4%) (fig.6).

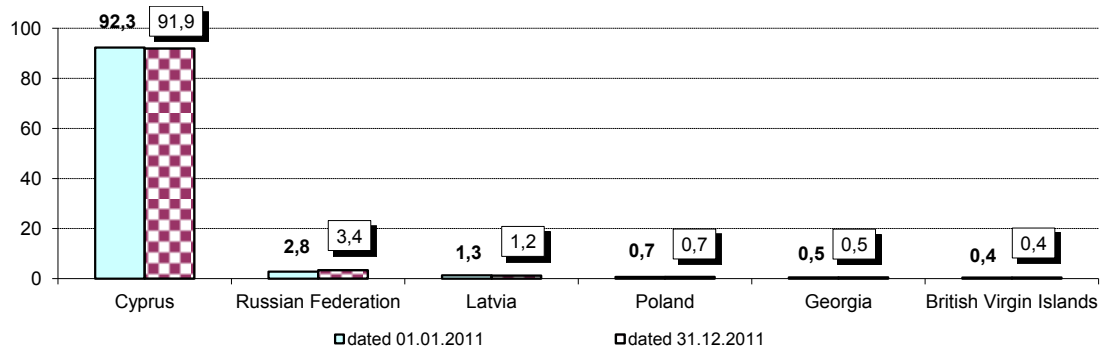


Fig. 6. Distribution of direct investments (stock capital) from Ukraine based on the major invested countries (in % to the total volume)

Source: compounded by [2]

Regarding the regional distribution, most of the investments were made by enterprises of Donetsk region – $5939.8 million (86.1%), of Kyiv – $655.6 million (9.5%) and Dniepropetrovsk region – $144.5 million (2.1%). Ukrainian direct investors' by debt instruments demands to foreign enterprises of direct investment made up $167.1 million in January, 2012. The total volume of direct investment (stock capital and debt instruments) into the economy of the world countries made $7065.1 million.

According to a great number of researchers, in the sphere of interstate capital movement to the countries with average and low income (to which Ukraine belongs) the following tendencies are dominating: changing foreign financing structure of the countries towards increasing the share of direct and portfolio investments and decreasing the share of bank loans; increasing the share of direct investments compared to portfolio ones; uneven regional distribution of foreign financing; transformation of developing countries and countries with transition economies into the world capital exporters.

The data presented testify that for the recent 10 years (against the background of considerable fluctuation of the international capital flow into Ukraine) the direct foreign investments have been the most stable factor supporting Ukraine's payment balance, providing efficient integration of the national economy into the world one and drawing domestic entrepreneurs to the leading economic experience. Today we can state that European integration and the international capital movement from developed countries, European ones in particular, have a positive effect on Ukrainian industry growth. There are numerous examples of successful cooperation between Ukrainian and European companies which encouraged Ukraine to master innovative technologies and productions, to implement international standards of cooperative management at enterprises, doing finances both on account of their own capital and foreign investments. These examples include cooperation between Ukrainian company "Techprom" and Austrian Techso GmbH, between Wirth GmbH and та "Kyivmetrobud", JSC, TH"Zvariuvannia" and German Olmaier GmbH. However, along with the positive influence on Ukraine's economic development, it is also necessary to focus attention on a number of negative consequences of the international capital movement which first appear as a temporary phenomenon, but eventually become stable. A failure to consider negative factors of the international capital movement while developing the investment strategy of Ukraine can bear certain threats to the national economy (particularly for the processing industry) and the state sovereignty, namely to impair its food security and qualitative industrial structure, have a negative effect on the nation's life quality and health. Thus, there is a certain risk concerning the integration of Ukraine's industry in not very profitable spheres, namely metallurgy and chemical industry; this can result in developing dependence on external factors and unstable development of the main trading partners. With regard to a long-term prospect, there can be considerable capital outflow (repatriation of profits to the investing countries, paying off debts) which exceeds the primary investments. Only the industrial enterprises which work in the international market and whose production corresponds to the world level will be able to adapt to the new conditions.

Studying opportunities of Ukraine's innovative development, it is necessary to note that a considerable part of the total volume of innovation expenses in the industry is made of capital costs – 62.8% (Chart 2) meanwhile specific weight of expenses for purchasing new technologies constantly decreases: from 3.16% in 2004 to 1.8% in 2010.

Table 2

The total volume of innovation expenses in the industry

Years	2004	2005	2006	2007	2008	2009	2010
Area of innovation expenses	million hrivnas	million hrivnas	million hrivnas	million hrivnas	million hrivnas	million hrivnas	million hrivnas
A total of, including	4534.6	5751.6	6160	10821	11994.2	7949.9	8045.5
Research and development	445.3	621.3	992.9	986.5	1243.6	846.7	996.4
Purchasing new technologies	143.5	243,4	159,5	328,4	421,8	115,9	141,6
Capital costs	2717.5	3149.6	3489.2	7441.2	7664.8	4974.7	5051.7
Others	1228.3	1746.3	1518.4	2064.9	2664	2012.6	1855.8

Thus, we can draw a conclusion that Ukraine belongs to the countries with a low investment activity whereas incoming foreign investments are not always accompanied by implementing modern high technologies and increasing competitiveness of domestic enterprises; in fact, they mostly pursue other objectives, namely property redistribution. This does not promote domestic enterprises' innovation development and is certain evidence of imperfect corporate management of enterprises, of the undeveloped financial market and Ukraine's weak integration into the world economy caused by the international capital movement. The current structure of Ukrainian industry is characterized by high specific weight of industries with low added value. Ukraine's investment strategy and mechanisms of its implementation have not provided investors' economic motivation yet to direct investment process towards innovative renewal of Ukraine's economy and domestic enterprises. The country's political instability and the legislation in force concerning enterprise development and investors' rights do not contribute to foreign capital flow into Ukraine either. Without developing a coordinated system of managing innovative processes at the state level it is impossible to distribute financial flows (both Ukrainian and foreign ones) efficiently directing them to innovative technologies and modernization of production facilities of domestic enterprises enhancing the positions of Ukraine's industrial production in the world market.

An increase in the competitiveness of Ukrainian enterprises based on their innovation development is possible under conditions of developing domestic transnational corporations or partial participation in foreign transnational corporations. This will provide necessary structural changes in the industry, technical reconstruction of enterprises, implementation of new economic high-quality technologies and forms of manufacturing. First of all, it is necessary to stimulate incomings of middle-term and long-term intellectual investments to the regions and to integrate the scientific sector and corresponding enterprise structures into the state innovation system. Applying to the information base Ukraine's scientific potential and market, information and marketing research, scientists will form a portfolio of orders and technical tasks to work out innovative production, such scientific work should result in innovative production ready for use.

The process of the international capital movement is increasing and becoming more organized defining the structure of the current world economy and turning financial markets into the most important factor of the world economy development. Thus, in 2010 the total volume of the world capital market almost achieved the volume of the world GDP [5]. Taking into consideration tendencies of the international capital movement and the world financial market development, it is necessary to point out such an efficient financial tool as IPO (Initial Public Offering), the usage of it will allow domestic enterprises to attract foreign capital to finance implementation of business models, entering foreign markets taking into account competition strategy at the time of

globalization. Thus, about 15% of all the investments into the capital asset in the developed markets are financed by means of the IPO; European rating reaches 10% [5]. Among Ukraine's enterprises which were the first to make the IPO are the following: Ukrproduct Group (food industry), Cardinal Resources (oil and gas), XXI Century (estate property), TMM (estate property), Dragon-Ukrainian Properties and Development (estate property), Ferrexpo (mining). At the beginning of 2011, 21 Ukrainian enterprises brought their shares into the world financial market. However, these are rather poor results compared to the European Union countries. Ukraine needs liquid, reliable and efficient stock market as well as active entering into international stock markets through the IPO which will promote its national interests and efficient integration into the world economy. This requires encouraging investments into the real sector of the economy; working out an effective system of protecting investors' rights and legitimate interests. It is necessary to develop a system of financial institutes and financial tools to attract domestic and foreign investment resources; a reliable modern system of implementation of agreements with securities and accounting of property rights for securities. Moreover, it is essential to introduce an efficient system of organized trade which should define the market value of securities issuers. Another urgent task is to provide conditions to increase the competitiveness of Ukraine's stock market with its further civilized integration into the international capital markets.

Studies prove that the most perspective trends of the stock market include the agricultural sector, telecommunication, banking, whose companies according to experts' forecast, can receive financial resources worth $2-3 billion by means of the IPO. This will diversify the stock market and allow foreign investors to enter more dynamic sectors of Ukrainian economy and integrate Ukraine efficiently into the EU and the world economy.

CONCLUSION

Studying and generalizing the theoretical bases, current state and tendencies of Ukraine's economic development and its integration into the world economy in the process of the international capital movement allowed making the following conclusions.

Ukraine possesses a rather great industrial potential in spite of its ineffective infrastructure and out-of-date production assets. Having considerable intellectual and scientific and technical potential, Ukraine demonstrates unsatisfactory rates of innovation development and low effectiveness of implementing innovation potential which calls for searching for efficient mechanisms which would promote the development of the national innovative system. Lack of economic motivation, imperfect legislation base, unstable financial provision, which is particularly tangible under conditions of the increasing world financial crisis, have a negative effect on innovative activity.

The role of foreign investors in financing innovative activity of Ukraine's industrial enterprises has increased in recent years. This is conditioned by limitation of their own capital and necessity to attract foreign capital to the industrial sector; the foreign capital is mostly used as direct foreign investments which recently have been the most stable factors to support Ukraine's payment balance and have promoted the integration of the national economy into the world economy. There is no reasonable alternative to the process of Ukraine's integration into the world capital movement, to the European economic space. European integration and the international capital movement form developed countries, namely European ones, influence the increase of Ukrainian economy. But it is important to take into consideration negative factors of the international capital movement which can cause certain threats for the national economy. There is a risk concerning the integration of Ukraine's industry into not very profitable branches (namely metallurgy, chemical industry); on the other hand, incoming foreign investments are not always accompanied by implementing modern high technologies and increasing domestic enterprises' competitiveness.

To avoid negative consequences, the European integration in the context of globalization tendencies should be gradual and reasonable, considering all industrial and financial risks which appear in the process of the international capital movement. The first and foremost task is to work

out financial mechanisms to regulate the international capital movement towards strengthening its positive effect on the economic development and innovative renewal of Ukraine's economy. It is necessary to develop a coordinated system of managing innovative processes at the state level it is impossible to distribute financial flows (both Ukrainian and foreign ones) efficiently directing them to innovative technologies and modernization of production facilities of domestic enterprises enhancing the positions of Ukraine's industrial production in the world market. In the context of the world current economic tendencies and Ukraine's integration connection development, it is essential to provide membership in influential international organizations or integration grouping to defend their own interests and to promote dynamic economic development. It is also necessary to create domestic transnational corporations or to participate partially in foreign transnational corporations along with active stimulating of intellectual investments.

We should also create conditions for increasing competitiveness of Ukraine's stock market and efficient implementation of financial tools with its further civilized integration into the international capital markets. It is important to activate domestic enterprises' entering the world stock markets by means of the IPO as the main factor Ukraine's integration into the world economy and innovative development of the state's economy.

REFERENCES

1.Державна служба статистики України. Інвестиції в основний капітал. [Electronic resource]. - Access mode: URL: http://www.ukrstat.gov.ua/

2.Державна служба статистики України. Експрес випуск №03/5-27/204 від 17.02.2012р. «Інвестиції зовнішньоекономічної діяльності у 2011 р[Electronic resource]. - Access mode: http://www.ukrstat.gov.ua/.

3.The Global Competitiveness Report 2010-2011, The Global Competitiveness Report 2009-2010. [Electronic resource]. - Access mode: URL http://www.rodon.org/society-100929102306.

4.UNCTAD, cross-border M&A database // [Electronic resource]. - Access mode: URL:// http://www. unctad. org/fdistatistics

5.WorldBank. Data profile // [Electronic resource]. - Access mode: URL://http://ddp-ext. worldbank. org/ext/ddpreports/ ViewSharedReport

SUBSTANTIATION OF THE DEVELOPMENT STRATEGIES CHOICE OF INDUSTRIAL ENTERPRISE IN THE CONDITIONS GLOBALIZATION

Yulia Nikiforova

The methodology of planning of the effective development of the industrial enterprise taking into consideration the influence of the globalization processes is developed. The effectiveness of the worked out methodology of the industrial enterprise development based on the assessment of the level influence of globalization factors on the external environment functioning of the enterprise; the enterprise's internal environment assessment, which take into account current economic indicators of the enterprise; system analysis of the enterprise's conditions is substantiated.

INTRODUCTION

Ukraine's transition to the market economy conditions is determined by the country's participation in the processes of globalization. These processes contribute to blurring economic borders, the redistribution of various industrial branches among the states, the involvement of the sovereign states in the global production through the international division of labour, the revealing

of new opportunities to the trade expansion and the intensive capital movement. Ukraine integrates into the world economy with the deformed post-industrial production structure of the national economy. Nowadays, the "competitive advantages" of Ukraine are determined by outdated industrial-production mechanism, by the potential of natural resource and profitable market for the more developed countries of the world. Participation in the international division of labour is possible only as a raw material appendage.

Therefore the urgent problem is to investigate the possible strategies of the development of domestic industrial enterprises in the processes of Ukraine's involvement in the globalized world, and to choose the most effective strategy. While choosing the effective strategies it is essential to consider the influence of globalization factors on the competitive enterprise's functioning for the purpose of further adaptation to the external conditions.

The analysis of literature and research works devoted to the study of the globalization by domestic and foreign authors is presented in research [1]. Research [2] represents the overview of the economic literature related to the study of the strategies of the enterprise's development.

The methodology of an effective development strategy for the industrial enterprises based on: 1) the assessment of the level influence of globalization factors on the external environment functioning of the enterprise; 2) the enterprise's internal environment assessment, which take into account current economic indicators of the enterprise; 3) system analysis of the enterprise's conditions.

1. RESEARCH ANALYSIS

Issues connected with the elaboration of possible strategies of development of the industrial enterprises in the conditions of globalization, have been studied in the works of the following authors: K. Petrov [3], E. Latysheva, T. Bardakova [4], K. Fedorov [5], etc.

The research [3] deals with the assessment of sustainable development taking into account the conditions caused by the processes of globalization. A unified methodology for determination of indexes and indicators characterizing the level of sustainable development is proposed. This study proposes the building models of the index formation of the sustainable country's development. This model is based on three main components: the index of economic development, the index social development, the index of the environmental state. It is essential to mark that the results of the investigation presented in item [3] are applicable for the assessment of sustainable development on a global scale. These results can not be transferred to a specific industrial enterprise.

The aspects of influence of factors of globalization on enterprises and the economy of Ukraine are investigated in item [4]. The approach which takes into account the influence of globalization on the state of the Ukrainian economy with the examples of successful integration processes in different countries and their adaptation to the conditions of Ukraine is proposed. The advantages and risks of Ukraine's integration into European institutions are analyzed. The recommendations for better integration into the global economic space are represented. The prospective possibilities of using the strategy of participation in transnational corporations in the formation of the effective policy of the enterprise are marked. Though the author [4] has not paid much attention to the study of globalization.

The author of research [5] has provided the definition of the mechanism of country's scientific and technological development as a system of relations between the state, science, technology and market forces. Innovative activity appears as the result their concerted action. The principles that are important to consider during the development of a new industrial policy were formulated. A two-step methodology to assess the potential of the enterprises, determined by the help of its level of the capital structure and its contribution to competitiveness, is proposed. A strategy of the development of innovation and production enterprise's component is devised. It is based on the planning, organization and management of the innovative activity, using the method of expert evaluation for determining the probability of successful implementation of the innovative project. However, it is necessary to mark, that the accent is made only on the introduction of an

innovation system as a mechanism for the formation of the effective structure of the economy. This mechanism ensures high competitiveness of the country during its exit on the high level of technology in the conditions of globalization. But external conditions of the enterprise themselves cost by the worldwide process of globalization are not enough investigated.

Thus, the question concerning the choice of enterprise development strategies in a globalizing world, and the substantiation of the effectiveness of the choosing directions of development, is still opened.

2. ASSESSMENT OF THE INFLUENCE OF GLOBALIZATION FACTORS ON THE EXTERNAL ENVIRONMENT FUNCTIONING OF THE ENTERPRISE

In order to assess the extent of integration of the country (particularly Ukraine) into the outer space, to analyze the external environmental conditions of the industrial enterprise, determined by globalization, in items [6] and [1] has been proposed and implemented an approach based on structural-parametric identification of the index level the country's participation in the processes of globalization, given the macro-economic indicators such as inflation, unemployment, GDP growth, the market capitalization of the companies on the stock exchange (% of GDP), the country's share in world exports, the country's share in world imports, export, import, the average index of internationalization, the average value of the index of transnationality, the ratio of foreign direct investment (FDI) to GDP, the ratio of the index of industrial production to trade in goods (% of GDP) (Figer1). Using the method of group data handling (GMDH) was constructed in the form of polynomial Kolmogorov-Gabor functional dependence on these factors the level of involvement of the country in the process of world globalization, defined the so-called "index of globalization" [1]. The analysis of the influence of the index of globalization as all the factors simultaneously, and each indicator separately was made on the basis of developed model. Let us briefly introduce the main results of the constructed models, indicating the degree of influence of globalization on the level of economic development in general, and the external conditions of operation of the industrial enterprises in particular, and justify the validity of the findings.

Thus, during the process of study it has been revealed that the effect of inflation on the level of the country’s globalization essentially appears only in combination with other factors such as the increase of real GDP per capita. There are two opposing views concerning the impact of rising inflation on the rise in the globalization of the country in the economic literature. Some scientists believe that inflation has nothing to do with increasing globalization, whereas others - that globalization causes an increase of inflation at the level of individual states. It is often occurs in developing countries with low levels of GDP. Besides this opinion finds affirmation in the results of analysis of the mathematical model constructed using the method of group data handling (GMDH).

The processes of globalization provoke the growth unemployment rate in particular countries of the world. It is established that rising inflation reduces GDP growth. The results of mathematical experiments also suggest an increase of real GDP growth by increasing the degree of the country's participation in the processes of globalization. It is evidently that in the process of globalization the leading role belongs to the highly developed countries which GDP growth rates are usually higher than ones of the developing countries.

With the increase of the index of internationalization (that is defined as the average sum of three variables: the share of foreign assets in total assets of transnational companies (TNCs), the share of foreign sales in total sales of the corporation, the proportion of staff abroad in the total number of workers TNCs) increases country’s level of globalization. Also it is marked that the index reflects the involvement degree of the separate multinationals in the production of goods and services abroad and determines the involvement degree of the country in the global economy in researches [8,9].

Fig. 1. The general scheme of selecting a strategy of industrial enterprise in the conditions of globalization

The transnationality index estimates the TNCs value for a specific country. According to researches [8,9] this index is defined as the sum of four components: the share of foreign direct investment among all capital investments of the country, the ratio of accumulated foreign direct investment in the country's GDP, the share of output of foreign affiliates in manufacturing GDP, the share of employed in these branches of all employment in the country.

So as far as one of the driving forces of globalization is the emergency of transnational corporations, the transnationality index, as well as the internationalization index, can be attributed to the factors that increase the country's level of globalization.

Export, as a separate factor, does not influence the level index of globalization. This indicator may not be taken into account in further researches.

With the growth rate of the country's share in world export its level of globalization has tended to increase. During the period from 2003 till 2011, that has been analyzed, the growth of the market capitalization of companies on the stock exchange predominantly caused a tendency to increase the country's level of globalization.

Growth of the foreign direct investment indicator to GDP ratio also contributes to the growth of the country's index level of globalization. With the growth of the ratio the index of industrial production to merchandise trade (% of GDP), country's index level of globalization tends to decline. This fact may be substantiated by the fact that in countries with a high level of globalization on the sovereign territory the industrial production base is almost absent. It is spread in the territory of the less developed countries with low GDP. A high level of this index indicates a low degree of involvement in the processes of globalization.

The analysis of the economic research literature, that contains information about the processes of world globalization and its influence on countries' economic and social development, confirms the adequacy of the results of studies which are presented in works [1, 6]. This is shown through a forecast of "estimates" that the level of Ukraine's participation in the globalization during the period from 2003 till 2010 years [6]. Therefore, the model assessment of the level globalization factors, which has been obtained on the basis of structural-parametric identification in researches [1, 6], further it is applied to the analysis and assessment of the external environment in which any industrial enterprise operates. In this case, based on the forecasted level of the country's involvement in the process of globalization, using fuzzy logic, defined fuzzy evaluation of such factors as: the level of risk, the level of competition, the access to markets, the access to markets of resources, growth or decline of inflation.

3. INTERNAL ENVIRONMENT ASSESSMENT THAT TAKES INTO ACCOUNT THE ECONOMIC INDICATORS OF THE ENTERPRISE

As the parameters, that clearly reflect the economic activity of the enterprise and thereby characterize the internal environment of the enterprise, the following indicators can be identified: the product life cycle, the life cycle of the organization, the index of solvency, current ratio, return on assets, return on equity, working capital assets and financial stability (Figure 1).

Several leading industrial enterprises such as: mining, metallurgical and machine-building industries of Ukraine have been analyzed. A methodology for assessing the internal environment of the enterprise is shown in this paper. As the example of the industrial enterprise a machine-building plant has been given. Financial statements of this plant during the period 2007-2011, the history of its formation and development, and market analysis of goods across the country and beyond have been taken as the foundation.

The enterprise is 63 years old. The life cycle of the enterprise during the period 2007-2009 can be assumed as a stage of prosperity, from 2010 - a stage of maturity.

Despite the fact that the industrial enterprise under the study has been operating for a long time and occupies a significant place on the Ukrainian market, its financial analysis shows that the solvency index sharply decreased from 2010. The situation can not be considered as critical one, but

tendency to decrease indicates of insolvency or bankruptcy. However, particular measures must be taken to restore the financial situation.

The absolute liquidity ratio shows a downward trend from 1.64 to 0.024 from 2007 to 2011 (Table 1). Taking into consideration the practice of the developed foreign countries it is obvious that the absolute liquidity ratio is calculated rarely. In the countries with transition economies its optimal value is considered at the level of 0.2 to 0.35. Value of the coefficient greater than 0.35, indicates an inefficient usage of funds.

Quick liquidity ratio is the ratio of the most liquid part of current assets (cash, accounts receivable, short-term investments) to current liabilities. In 2007, the quick liquidity ratio was 5.73, and had decreased to 0.75 by 2011. This coefficient is considered more rigid test of the liquidity, since its calculation is not taken into account the part of the least liquid current assets - slow to realize assets. There are two main reasons for which slow-realized assets are not used in the calculation of this coefficient. It is the net realizable value of such assets which being forced to implement cost much less than the assets in the balance sheet. In the second case, if the company sells the stock of materials (which are often dominate in that group), then the question how it will continue its work is opened [7]. This ratio is desired to be about 1.5. But in transition economies a sufficient value equals to 0.7 - 0.8 is recognized. In the situation of our enterprise quick liquidity ratio decreased to a critical level only in 2011.

The current liquidity ratio [7] shows how the available of current assets is sufficient to meet current liability. The calculation of this ratio lies in the fact that current assets should be completely converted to cash during one year, as well as current liabilities must be paid within a year. According to generally accepted standards [7], it is considered that this coefficient must be in the range from one to two. The lower bound is due to the fact that current assets should be at least sufficient to cover short term liabilities otherwise the company will be at risk of bankruptcy. The excess of short-term assets over liabilities of more than two (three) times is also considered to be undesirable because it may indicate a violation of the capital structure. Particular attention should be paid to its dynamics in the analysis of the coefficient. In 2007 the current liquidity ratio was high, that reveals the irrational structure of the assets. In 2008, this coefficient closed to the desirable mark of 4.17 and then increased to 7.31. The current liquidity position is spasmodic in nature, that adversely affects the financial position and shows instability. In 2011, the coefficient is aligned to 1.82, which is normal for a state enterprise.

Table 1

Indicators of the economic state of the industrial enterprise during period 2007-2011

№	**Indicators of the enterprise**	Period in Years				
		2007	**2008**	**2009**	**2010**	**2011**
1	Product life cycle	Growth	Growth	Growth	Stabilization (ripeness)	Stabilization (ripeness)
2	Life cycle of the organization	Prosperity	Prosperity	Prosperity	Maturity	Maturity
3	Index solvency	16,56	14,89	30,03	14,5	6,91
4	Absolute liquidity	1,64	0,38	0,28	0,044	0,024
5	Quick liquidity	5,73	2,13	3,25	1,18	0,75
6	Current liquidity	11,73	4,17	7,31	3,59	1,82
7	Return on current assets	10,43	0	0	0	0
8	Return on assets	4,71	0	0	0	0
9	Return on equity	2,22	0	0	0	0
10	Return on investments	4,91	0	0	0	0
11	Turnover of fixed assets (capital productivity)	2,35	0,55	0,36	0,44	0,58
12	Rate of assets turnover	1,02	0,41	0,27	0,32	0,42
13	Financial stability	[1,1,1]	[1,1,1]	[1,1,1]	[1,1,1]	[0,0,0]

Return on current assets ratio demonstrates the capabilities of the enterprise to provide sufficient income to the working capital used by the company. The higher this ratio is, the more efficient floating assets are used. On the example of machine-building enterprise, the return on current assets has had a zero level since 2008. In 2007, its mark was at 10.43%.

Return on assets characterizes the ability of the company's management to use its assets effectively to generate earnings. In addition, this coefficient represents average return obtained on all sources of capital (equity and debt). The mark of return on assets is zero, although in 2007 reached 4.71%.

Return on equity (ROE) allows to determine the efficiency of capital invested by the owners of the enterprise. Usually this indicator is compared with possible alternative investment in other securities. Return on equity shows how much currency units net profit earned by each unit invested company owners. Although the enterprise had used only its own funds until 2011, the mark rate of return on equity was zero in 2008.

Return on investment (ROI) shows the number currency units required the enterprise to obtain one unit of profit. This indicator is one of the most important indicators of competitiveness. Since 2008, it has had a zero value, although its mark was 4.91% in 2007.

Increasing the return on assets, in addition to increasing the volume of sales can be achieved both by a relatively low proportion of fixed assets, and by their higher technological level. Its value varies greatly depending on the characteristics of the industry and its capital intensity. However, the general regularities here are: the higher the return on assets ratio is the lower the costs are. The low level of return on assets indicates either insufficient level implementation or a too high level of investment in these assets. Also, the value of this coefficient strongly depends on the method calculating depreciation and asset valuation practices. It may happen that the rate of turnover of assets will be higher in the enterprise which has worn out fixed assets. The changes of the fluctuating nature of the return on assets are in the range of two to zero. Though the enterprise has existed for a long time, it effectively uses all the fixed assets at the disposal. Depreciation deductions covered by the volume of net income are performed regularly.

Asset turnover characterizes the efficiency of the company of all the resources available, regardless of the source of their attraction. This coefficient shows how many times a year, completes the cycle of production and circulation, which brings a corresponding effect in the form of profits. This coefficient also greatly varies depending on the industry. Based on the calculation of the balance sheets of asset, turnover ratio varied from one to zero from 2007 to 2011. The average assets turnover in five years is 0.48. This means that the enterprise needs at least two years to full completion of the productive cycle. The enterprise will be able to obtain the respective effects of its activities in the form of profits only at the expiration of two calendar years.

To determine the financial stability of the enterprise three-figure type of financial stability has been used, it is the following: S = {1,1,1} [7]. This type of financial stability is defined as the absolute and let us know that all the stocks covered by the enterprise's own current assets. That is, the organization is not dependent on foreign creditors. The situation of absolute financial stability is extremely rare. Moreover, it can hardly be regarded as an ideal, as it means that the company does not want to or is unable to use external sources of funds for our operations. The enterprise managed from its own funds and had no relationship with borrowed funding sources from 2007 to 2010. The situation changed in the financial crisis the state S = {0,0,0} in 2011. This state is characterized by the situation in which the enterprise has debt overdue, and overdue accounts and accounts receivable. In this case, we can say that the enterprise is on the verge of bankruptcy [7]. Though the assessment of the financial state could be considered critical, but not hopeless in 2011. The enterprise continues to work only with borrowed financial resources.

4. SYSTEM ANALYSIS OF THE ENTERPRISE'S CONDITIONS AND SUBSTANTIATION OF THE CHOICE THE DIRECTION OF ITS DEVELOPMENT

Thus, the creation of a strategy for further development of competitive enterprise in the conditions of more and more penetration of globalization processes in the national economy should be guided not only by the internal capabilities of the enterprise, but also take into account the external conditions of its operation. The research work [2] represents a methodology of choosing directions of the industrial enterprises development, which based on the mathematical apparatus of fuzzy logic. Six major areas have been identified: the plan for the technical and organizational development of the enterprise, the plan for intensive use of production capacity, the plan for the development of production and product, the development plan of logistic support, the plan to optimize the cost of production and sales of products, the plan to improve the financial stability of the enterprise. Possible actions in its turn are allocated in all of these plans. General scheme of the development strategy is shown in (Figure 1). The rule base of fuzzy logic has more than 110 fuzzy outputs according to which the estimated level of confidence in the choice of one or the other directions of the organization. Formulation of each rule is accomplished by the estimates of external factors, caused by globalization, internal estimates of financial and economic indicators, as well as the known facts, expert opinion on the economic activities that must be done under the circumstances.

The process of building some of the fuzzy inference rules about choosing the direction of the enterprise development is reflected in (Table 2).

Table 2

Formulation of base of fuzzy productions output while choosing the direction of the enterprise

№	Fuzzy Rule	Degree Confidence	References to Literature, Quote
1	IF the level of risk - average, THEN the diversification of investment AND scientific-research and experimental-constructive work	«1»	[10] "There are two basic ways to protect enterprise from risk, which can be classified into according their active to passive and active intervention response. The first strategy is the usage of insurance risks. The second one is the usage the strategy of diversification of its activities in order to reduce the risk "
2	IF the product life cycle - the growth THEN the decrease in cost of sales promotion among consumers	«0,6»	[11] The period of rapid increase in sales and profits. The increased attention of competitors is observed. The purpose of communication is the formation of preferences. Manufacturer tries to make its product more attractive.
3	IF the product life cycle - the growth THEN maintenance (improving the quality of manufactured products AND certain products AND an increase in the volume of production AND increasing the competitiveness of goods)	«0,9»	

The result of the developed work of the fuzzy inference system is the degree of certainty choosing a particular direction of the enterprise (Table 3).

By setting the defined threshold value, the most preferred directions from all possible directions are chosen. All possible directions, which were used in the economic and mathematical

modeling [2], are ranked in descending order in degree of confidence. These degrees are subjected to scrutiny in terms of financial or organizational capacity for their implementation.

To rank the direction of the industrial enterprise development here was set upper 0.654 and lower -0.595 thresholds of the significance. The threshold identified several priority directions for the development of the enterprise in a globalizing world (Table 4). The characteristics of the results of choosing directions of the enterprise with the upper threshold significance means to "follow" or "follow the upwards under the certain circumstances". The characteristics of the results of choosing directions of the enterprise with a lower threshold significance means that in these conditions enterprise needs to take measures to reduce certain actions and "not follow" the chosen path of development or "follow to decrease."

Table 3

The result of the fuzzy inference system while choosing the direction of the enterprise

The Direction of the Industrial Enterprise Development	Specialty Code Direction	The Direction of the Industrial Enterprise Development	Period in Years				
			2007	2008	2009	2010	2011
	A1	Improving the quality of products	0,5	0,734	0,734	0,734	0,72
	A2	Carrying out research and development work	0,639	0,64	0,639	0,628	0,639
	A3	Introduction of progressive technology of mechanization and automation of industrial processes	0,024	-0,05	0,024	0,182	0,024
	A4	Changing strategic area management	-0,595	-0,039	-0,595	-0,595	-0,595
	B1	Increase of the efficiency of power equipment	0,657	0,65	0,657	0,657	0,657
	B2	Timely delivering of major repairs	0,26	0,2	0,14	0	0,26
	B3	Headcount optimization	0,646	0,65	0,646	0,646	0,646
	B4	The introduction of the scientific organization of labor (SOL)	-0,595	-0,39	-0,595	-0,599	-0,595
	C1	Increase (decrease) of equipment needs	0,588	0,6	0,585	-0,52	0
	C2	Increase (decrease) of demand for logistics	-0,604	-0,6	-0,6	-0,59	-0,604
	C3	Increase (decrease) of production	0,6	0,595	0,595	-0,16	0,6
	C4	Increase (decrease) of payroll	-0,595	-0,39	-0,595	-0,59	-0,595
	D1	The discovery and usage of new technologies and energy sources	0,62	0,61	0,61	0,596	0,62
	D2	Creation and widespread distribution of new materials with predetermined properties	0,635	0,57	0,6	0,561	0,635
	D3	Predicting and measuring the needs of all types of material resources, scheduling optimal economic ties	0,613	0,61	0,613	0,613	0,604
	D4	Optimization production stores	0,639	0,63	0,639	0,639	0,639
	E1	Purchase of raw materials at low prices	0,655	0,588	0,588	0,588	0,669
	E2	Exploitation of energy-consuming equipment	0,698	0,698	0,698	0,693	0,698
	E3	Improvement of competitiveness	0,667	0,656	0,667	0,667	0,667

E4	Realization of production in new markets	0,655	0,643	0,655	0,655	0,655
F1	Increase of the equity capital	0,654	0,654	0,654	0,654	0,654
F2	Involvement of short-term and long-term loans	0,673	0,672	0,673	0,673	0
F3	Diversification of the investments	0,626	0,626	0,626	0,626	0,626
F4	Attraction of investments	0,5	0,58	0,5	0,5	0,5

Table 4

Recommended directions of the enterprise development with the level of the country's participation in the processes of globalization

Period in Years									
Specialty Code Direction	2007	Specialty Code Direction	2008	Specialty Code Direction	2009	Specialty Code Direction	2010	Specialty Code Direction	2011
The characteristics of the results of choosing directions of the enterprise with to "follow" or "follow towards increase "									
E2	0,698	**A1**	0,734	**A1**	0,734	**A1**	0,734	**A1**	0,72
F2	0,673	**E2**	0,698	**E2**	0,698	**E2**	0,693	**E2**	0,698
E3	0,667	**F2**	0,672	**F2**	0,673	**F2**	0,673	**E1**	0,669
B1	0,657	**E3**	0,656	**E3**	0,667	**E3**	0,667	**E3**	0,667
E1	0,655	**F1**	0,654	**B1**	0,657	**B1**	0,657	**B1**	0,657
E4	0,655	**B1**	0,65	**E4**	0,655	**E4**	0,655	**E4**	0,655
F1	0,654	**B3**	0,65	**F1**	0,654	**F1**	0,654	**F1**	0,654
The characteristics of the results of choosing directions of the enterprise with "does not follow" or "follow the towards reduction"									
C4	-0,595	**B4**	-0,39	**C4**	-0,595	**A4**	-0,595	**C4**	-0,595
C2	-0,604	**C2**	-0,6	**C2**	-0,6	**B4**	-0,599	**C2**	-0,604

The Direction of the Industrial Enterprise

CONCLUSION

The recommended directions of the enterprise's development according to the proposed method of planning the effective development of the industrial enterprise with the impact of globalization in 2007 relate to the plan for intensive use of production capacity, the plan for the development of logistic support, the plan to optimize the cost of production and sale of products, the plan to improve the financial stability of the enterprise. The characteristics of the results of choosing directions of development is meant to "follow," according to the priority in the direction of increasing the usage of energy-consuming equipment, bringing short-term and long-term loans, increasing product competitiveness, increase of the efficiency of power equipment, procurement of raw materials at low prices, the selling the products in new markets, increase their equity capital. During 2007, the enterprise has made the costs for the implementation of some of these areas for development, but not in full size, and not in all the recommended areas.

In 2008 the prime directions for the development of the plan related to the technical and organizational development of the enterprise, the plan for intensive use of production capacity, the plan to optimize the cost of production and sale of products, the plan to improve the financial stability of the enterprise. The characteristics of the results of choosing directions of development is meant to "follow," according to the priority in the directions of increasing improving the quality of

products, exploitation of energy-consuming equipment, involvement short-term and long-term loans, improve competitiveness, increase of the equity capital, capacity utilization of equipment, staff optimization. And through 2011 the choosing direction of development practically remained unchanged, except 2010. In 2010, the lower threshold of significance changed the direction of the "plan of intensification of production capacity" as "not follow" or “follow to decrease”. It should be noted that from 2007 to 2011, the level of Ukraine's participation in the processes of globalization was not changed, the trend fluctuations were at an average level compared with other countries. That is why the recommended directions of development during 2008-2011 have slight differences.

Further studies are based on forecast information concerning the conditions of the external environment and the operation of the business of determining the stock costs for implementation of all development in the total amount and the distribution of these costs so that all the directions of the development of the industrial enterprises would be appropriate and effective in adapting to the conditions of the industrial enterprise globalization.

REFERENCES

1. Забезпечення конкурентоспроможності промислових підприємств на базі інноваційного розвитку: монографія. / за ред.. О.С. Галушко. – Д. Національний гірничий університет, 2012. - 212 с.
2. Галушко О.С. Вибір ефективних напрямків розвитку промислового підприємства в умовах глобалізації на основі економіко-математичного моделювання О.С. Галушко, Ю.В. Никифорова, Л.С. Коряшкіна // Науково-теоретичний та інформаційно-практичний журнал «Економічний вісник» Національного гірничого університету. – 2012. – № 3. – С.103-115.
3. Петров К.Э. Компараторная идентификация модели формирования индекса устойчивого развития // Міжнародний науково-технічний журнал «Системні дослідження та інформаційні технології» Навчально-науковий комплекс «Інститут прикладного системного аналізу» НТУУ«КПІ» МОН та НАН України. – 2009. – № 1. – С.36-46.
4. Латышева Е. В., Бардакова Т. В. Исследование влияния факторов глобализации на экономику Украины // Научный Вестник Донбасской государственной машиностроительной академии. 2009. – № 2 (5Е). – С.243-247.
5. Федоров К.А. Развитие и совершенствование инновационной деятельности промышленного предприятия: автореф. дисс. на соискание науч. степени канд. экон. наук: спец.08.00.05 – «Экономика и управление народным хозяйством» (Управление инновациями) / К.А. Федоров – Москва, 2012. – 27с.
6. Никифорова Ю.В. Планування розвитку промислового підприємства з урахуванням рівня участі країни у глобалізаційних процесах // Науковий вісник Національного гірничого університету. 2013. – №2
7. Кононенко О. Анализ финансовой отчетности. - 3-е изд., перераб. и доп. - Х.: Фактор, 2005. - 156 с.
8. Электронный режим доступа http://archive.unctad.org/sections/press/docs/pr07037_ru.pdf
9. Электронный режим доступа http://www.vavt.ru/glossecon/glossecon/LSPECDAC8
10. Устенко О.Л. Предпринимательские риски: основы теории, методология оценки и управление [Текст] : монография / О.Л. Устенко. - К.: Всеувито, 1996. - 146 с.
11. Захаров С.В. Маркетинг / С.В. Захаров, Б.Ю. Сербиновский, В.И. Павленко. – Ростов н/Д.: «Феникс», 2009. – 361 с.

THE INFLUENCE OF EUROPEAN INTEGRATION ON CHANGING THE FOCUS OF AGRARIAN POLICY OF UKRAINE: INCREASING THE COMPETITIVENESS

DARIA KOZAR

Base factors of development of agrarian policy of Ukraine in connection of its membership in the WTO and European integration are studied. Bases of Common Agrarian Policy of European Union and possibility of their application in the agrarian policy of Ukraine are analyzed. Problems of budget financing as a component of a state adjusting of agrarian sector of Ukraine are examined. Measures to optimize the structure of state support for agriculture as a factor that will increase the competitiveness of the state are proposed.

INTRODUCTION

Agriculture is one of the priority sectors of the national economy of Ukraine. Development of the agricultural sector contributes to the financial well-being, strengthen economic and food security, increase its export capacity and competitiveness among other countries.

The agrarian sector (agriculture, food and processing industry) provides food safety and food independence of country; forms 8% gross domestic product (for 2009) and about 60% of population consumption fund. In addition, an agrarian sector is one of major budget-making sectors of national economy, which takes in the consolidated budget of Ukraine in the last few years presents 8 - 9%, and it is the second largest economic sectors in the commodity structure of exports.

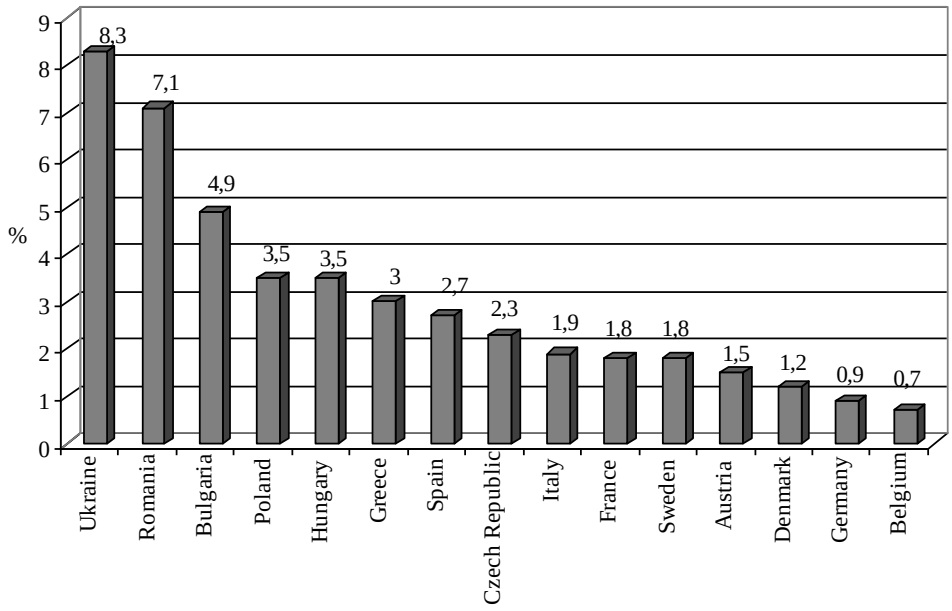


Fig. 1 - A contribution of agriculture in general GDP of Ukraine and European Union countries in 2011 year.

Source: The Official site of the World bank (www.worldbanc.org)

As shown in Figure 1, the contribution of agriculture in the GDP of Ukraine in comparison with some European Union countries is rather high. This special role of agriculture in the socio-economic life is caused by a unique combination of favorable climatic conditions, geostrategic location and Ukraine's ability to occupy an important place in the international food market [1].

About 11% of agricultural enterprises are unprofitable at the present stage of development of Ukraine (Fig. 2).

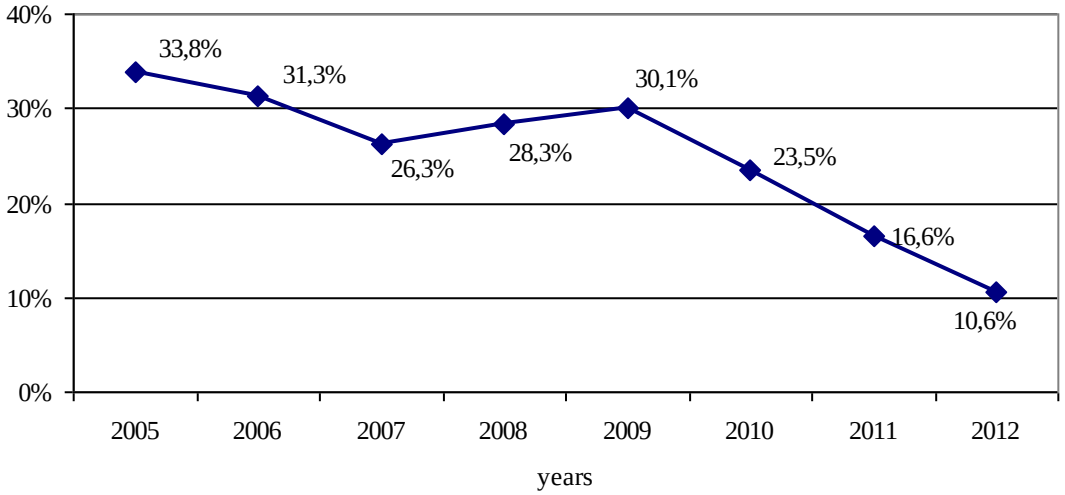


Fig.2 - The dynamics of unprofitableness of agricultural enterprises of Ukraine in 2005-2012 years

Source: Statistical annual of Ukraine for 2012 (www.ukrstat.gov.ua)

Figure 2 shows that the reduction in share of unprofitable enterprises started in 2010, which, in our opinion, is the result of Ukraine's accession to the WTO and the start of implementation of the New Agricultural Policy.

Based on these data, we can conclude that Ukraine needs to implement New Agricultural Policy, which must be export- and integrative-oriented. It has to be adapted to the Common Agrarian Policy of European Union (hereinafter - the CAP EU), which is the special system of state support and regulation of agriculture, which determines the character of development of this sector. Introducing of such system in Ukraine is a prerequisite for ensuring the competitiveness of domestic agricultural sector in the European market, and to ensure an appropriate level of competitiveness of Ukraine as a whole.

The aim of this research is to determine the influence of European integration on changing the focus of Agrarian Policy of Ukraine and identify measures to optimize the structure of state support for agriculture as a factor that would increase the country's competitiveness.

1. COMMON AGRARIAN POLICY OF THE EUROPEAN UNION AS A SPECIAL SYSTEM OF STATE SUPPORT AND REGULATION OF AGRICULTURE

The system of state support and regulation in Ukraine is still very undeveloped compared to European standards. An interconnection between the aims of policy and expenses of budget is absent. Formally, the budget is based on the medium-term prognoses of socio-economic development and it is represented in directions of budget policy. Therefore, determination of sum of agrarian sector budget expenses is not quite transparent, that requires the further improvement of structure of expenses in accordance with international standards. In addition, support to agriculture in Ukraine is provided by direct budget subsidies, tax deductions and high import quotas. Such government support is still remains unsatisfactory. A modern agribusiness needs stable, consistent and sustained policy to be able to make right management and investments decisions. Unstable political environment also reinforces uncertainty and reduces the efficiency of the agricultural economy sector.

Two priority directions of a new agrarian policy are obvious in the near future:

- improvement of budget support of the agricultural;

- improvement of the price policy which would restore price parity and provide positive support of agricultural manufacturers.

In both areas, the system of agriculture state support must be improved in direction of bringing it into compliance with WTO and new EU Common agrarian policy standards. At the present stage of development , Ukraine copied so-called "old" CAP EU model, whose essence is in the formal support of producer. This model of agrarian policy of the EU was aimed at supporting prices and production, but it did not stimulate the business struggle between manufacturers and destabilize fiscal standards of EU which ked to intergovernmental trade conflicts. In addition, it is known that "old" common Agrarian Policy of the European Union was extremely ineffective, harmed to the environment, resulted in trade conflicts.

However, by entering to WTO (May 2008), Ukraine had achieved a unique chance to understand the new direction, in which is developing the CAP of EU and agrarian policies in other countries, and to work out a new effective agrarian policy, which will be aimed at improving the welfare of the rural population and stimulating private investments and budgetary subsidies in agriculture, improving the competitiveness of agricultural products.

During its approval (since the Rome Agreement in 1956) Common Agrarian Policy of the European Union reformed gradually, according to changes in economics within and outside of the Union, but it was always focused on development of competitive agriculture in countries, whose main task was the gradual strengthening of requirements to her safety for a man and defense of natural environment.

Each stage of the CAP inherents disadvantages which in time pushed the need for reform.

The first phase of CAP reform was implemented in the period from 1983 to 1991 and basics of the reform were the following principles:

- establishment of limit of production for particular products to each farmer. If the farmer exaggerated this quota, he could not sell this surplus for a guaranteed price;
- products with large reserves purchased at lower prices than before;
- reduction of import of agrarian products from the third countries.

The second phase of CAP reform (1991-1999 years) was aimed at increasing the competitiveness of farmers, the balance between demand and supply, supporting those farmers who really need it, and protecting the environment.

The main elements of the reform of this phase were: a further price-cutting of basic agricultural products, leadingout farmers from the agricultural production of croplands, the transition from the system of supporting prices into supporting the incomes of farmers.

The third stage of CAP reform started in 1999 and lasted until 2003. According to the basic provisions of the reform at this stage, Union went across from indirect support of standard of prices through support of incomes of farmers to direct payments on the hectare of particular crop. Directing efforts to solve the problems of environmental protection and improvement of food safety and agricultural raw materials was a major change that occurred in this period. But the analysis of this phase of the first three years showed that the new approaches to reforming the CAP are needed. Therefore in 2003 began the fourth stage of reform of agricultural policy, which operates today. At this stage the primary purposes of the Common Agrarian Policy of the European Union are:

- efficiency of agriculture on the basis of technical progress and rational organization of production;
- eliminate the gap in earnings of rural and urban population with equitable income farmers;
- stabilizing the domestic market of agricultural products by supplying food at reasonable prices;
- self-sustaining population of EU by the products of agriculture of own production.

Thus, the CAP EU, which postulates were first formulated more than 50 years ago, is constantly evolving. At the same time its main objectives is to ensure that agricultural production in

the necessary volumes, enabling agricultural producers to function independently in the EU markets and the world, and ensure them a decent standard of living, remain actual at all times.

2. IMPROVEMENT BUDGET EXPENSES FOR AGRICULTURE

After joining the WTO agricultural policy support in Ukraine should be focused on effectiveness of budget support programs, clear definition of impact indicators of each budget program. Government decisions in the agrarian sector must take into account the requirements, which presented to Members of WTO because the organization imposes certain obligations on its members. Agreement on Agriculture, the GATT Uruguay Round, which is the main agreement of WTO, which regulates the obligation to its members on domestic support for agriculture, implements the classification of public policy [2]. Thus, in accordance with Annex 2 to this Agreement, all measures of state support for agriculture conventionally divided into three groups, or colored boxes: "green", "blue" and "yellow"(or "Amber").

"Yellow box" includes fiscal transfers, which stimulate production, affecting trade and suggest means of redistribution from consumers to producers. Such events are subject to reduction commitments after joining the WTO.

According to the agreement with WTO, the rate of aggregate measure of support (hereinafter - the AMS), which accumulates some programs of the "yellow box" for the agriculture of Ukraine shall not exceed 3,43 billion grn. Additional services could be spent on these programs up to 5% of annual monetary value of gross agricultural output [3].

At present time amount of "yellow box" support of Ukraine's state budget is much lower than the allowed amount of support. Thus, that the problem of limited support of agriculture according to the WTO "yellow box" programs is not actual for Ukraine because of very limited budget support for agriculture.

Ukrainian farmers are concerned about the WTO requirements to reduce the supporting the agriculture using "yellow box" programs. Their concerns is exonerated, because almost all state support to Ukrainian agriculture, due to which industry has evolved over the past ten years, belongs to "yellow box" programs, which must be reduced.

By the way, one of the results of negotiations between Ukraine and WTO is that certain time Ukraine is not obliged to reduce domestic support provided through the "yellow box". So after joining the WTO state support of agricultural through the "yellow box" programs won’t be less than the support that was given to agriculture in recent years.

"Green box" is a state support programs that do not affect or minimally affect the production and trade. They are not intended to support volume production and producer prices, and therefore do not violate principles of fair competition. "Green box" measures financed from the State budget in any desired amount, depending on budget needs [4]. There are no any restrictions because of WTO obligations.

Public spending within the "green box" can be implemented in the following areas:

- research, training and retraining of personnel, information and advisory services;
- veterinary and phytosanitary measures, control of food safety;
- promoting the marketing of agricultural products including harvesting, processing and dissemination of market information;
- improvement of infrastructure (construction of roads, electricity and reclamation facilities) except of operating expenses for their maintenance;
- maintenance of strategic food reserves, domestic food aid;
- providing guaranteed income farmers, improving land use, etc.;
- supporting farmers' incomes, not related to the type and volume of production;
- promote the structural transformation of agricultural production;
- Environmental Protection;
- Regional Development Program.

The main criteria of "green box" program are the absence of price support to producers. While becoming member of the WTO, Ukraine has shown strong tendency to increase the proportion of "green box" programs in the structure of state support for agriculture (Fig. 3).

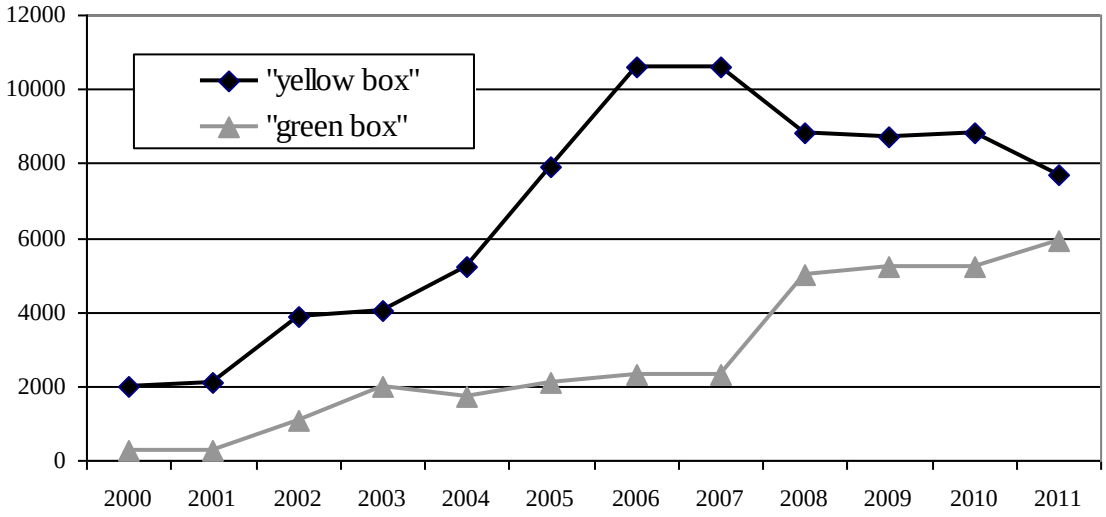


Fig.3 - Dynamics of state support level of agriculture in Ukraine (million grn.)

Source: Calculated by author based on an analysis of the literature [6, 10, 11].

The tendency of increasing support to agriculture through "green box" programs is characteristic for developed countries. In particular 2000 and 2005 the percentage of "green box" in the EU countries increased by 56%, in the U.S. - 26%, Australia - 53% [5].

Increase of contribution of "green box" in the structure of state support of agriculture of Ukraine means that gradually support will shift from budgetary support of farms into support of infrastructure development. As in Central and Eastern Europe, these trends will intensify in the course of European integration of Ukraine, for Rural Development in the EU are equally parity of agricultural policy along with support for agricultural producers.

None restrictions for direct payments from the budget included in the "blue box", since such transfers are paid to producers because of the production cuts. While joining the WTO, countries are obliged to reduce domestic agricultural support, if it meets the «de minimis» principle.

The most controversial issue in the negotiations with the WTO is an issue of poor classification indicators to divide "green / yellow box" programms. As mentioned, these programs aimed at stimulating production and increasing profitability (lowering costs, support for product pricing, etc.) [4]. Classification of domestic spending budget does not fully meet the criteria set by countries with market economies and are reflected in the Agreement on Agriculture. Besides, the non-transparent financing schemes makes almost impossible to evaluate the value of support. Development and implementation the "green box" new programs should become a definitive direction of government policy support. Instead, they are worst represented in the national budget. First of all, they are not yet widespread in Ukraine and, secondly, some of them are part of other budget expenses in the hidden form. For example, expenses on science and education in agriculture is presented not only under the costs of the Ministry of Agrarian Policy of Ukraine, but also in other sections of the budget.

Also, in the State Budget of Ukraine for 2010 by code 6590000 is shown financing of the Ukrainian Academy of Agrarian Sciences, while the remaining costs associated with the financing of education and science in agriculture are reflected in KPKVK 2801080, 2801180, 2801130. Using separate item in the budget expenses for comprehensive rural development, particularly in rural infrastructure (roads, utilities, reclamation facilities, etc.), services and more must be indicated.

Also there is no transparently indicated costs of food safety programs, costs for promoting sales of agricultural products and providing information services . These costs are essential to the calculation of budget support according to the "green box".

Improvement of budget support for agricultural sector requires a gradual separation from supporting the production into focusing on overall development of rural areas. Benefits of budget support to rural development support of producers are:

- development of village infrastructure opens up new areas of employment of peasants: rural construction, municipal, domestic, social services, etc.;
- provides support for all farmers regardless of their ownership and management, specialization of production, market conditions;
- upport high quality life of rural population in general, including agricultural workers, labor force industry to increase its skills, etc. [6].

And this concept of budget support for agriculture is already incorporated in our country. In adopted in 2005 Law of Ukraine "On fundamental principles of government agricultural policy until 2015" defined the main priorities of government agricultural policy, including:

- developing and implementing state and regional programs of integrated rural development;
- creating conditions for qualified agriculture, education, culture, health and consumer services;
- state support for the development of competitive agricultural production through cooperation and integration;
- creation of equal conditions for the different organizational forms in agriculture;
- implementation of modern mechanisms and methods of transparent market for agricultural products, foodstuffs, capital, particularly productive resources, and labor, creating favorable conditions for realization of export potential and several others.

Also, this law provided by 2015 the employment of rural working population not worth than that in the European Union and increasing rural incomes and average wages of workers of agriculture to a level not below average in other areas of the state economy [7].

Counteracting possible negative consequences for the rural population by facilitating access of imported goods on the domestic market of the country and possible benefits will support the financing and development of market and social infrastructure, service cooperatives, extension services and so on.

In addition to that the "yellow box" programs deforming the production, trade and consumption of agricultural products, there are other problems of government subsidies of agriculture in Ukraine:

- lack of long-term financial plan;
- under-funding of planned programs;
- a sub-optimal allocation of subsidies;
- reduction of the budget for certain programs [8].

The data given in Table 1 show that Ukraine has no long-term strategy of agricultural subsidies. Some budget items are unstable and from year to year ranged from zero to a hundred million. This instability prevents the farmers to make long term plans and investments. However, a large proportion of "green box" is a very positive indicator of the agricultural budget of Ukraine (Articles 8-16 in Table 1). The largest volumes of these activities are spent on training, education, science, inspection, food safety and selection program.

Overall effectiveness of the majority of "green box" is very low, so private farmers and agribusinesses are not getting enough support in the form of public benefits from scientific and regulatory agencies [8].

Table 1

Government subsidies of agriculture, million grn.

	2007 year	2008 year	2009 year	2010 year	2011 year
Production subsidies (support measures of the "yellow box"), %	**31,3**	**38,7**	**17,9**	**25,5**	**38,5**
(1) Financial support for livestock and crop	2188,5	2368,0	369,3	2987,9	2130,0
(2) Support for horticulture, viticulture and hop	350,0	407,6	379,2	498,1	655,0
(3) Food reserve	12,6	15,2	120,9	205,4	234,4
(4) Share compensation lending rates	551,3	1021,3	373,8	621,6	531,4
(5) Financial support forfarmers and cooperatives	131,6	97,1	2,6	30,0	10,0
(6) Support for construction of cattle farms	0	0	0	373,0	500,0
(7) Support for building greenhouses	0	0	0	0	50,0
Development expenditures (the support measures of the "green box"), %	**56,0**	**54,8**	**71,9**	**66,5**	**57,7**
(8) Rural development	27,8	50,6	44,9	23,9	16,5
(9) Research	240,9	324,1	228,5	256,9	357,1
(10) Education	1352,0	1999,8	2150,2	2651,6	2821,4
(11) Government stocks	67,6	17,6	0,9	1,1	5,0
(12) Plant quarantine	44,5	40,0	20,4	26,6	20,9
(13) Quality and food safety	861,2	1139,8	1197,5	1400,5	1513,9
(14) Extension	9,8	12,4	7,5	14,4	11,2
(15) Compensation cost of insurance premiums	47,8	60,1	12,2	40,0	10,0
(16) Land reform	5,0	7,7	0,8	1,0	525,5
TOTAL	**5890,6**	**7561,3**	**4908,7**	**9132,0**	**9392,3**

Source: Institute of Economic Research and Policy Consulting in Ukraine (2011 year)

CONCLUSION

State regulation can both stimulate and inhibit the development of agriculture in Ukraine. In Ukraine there is no strategic vision of the industry and of the agricultural sector and, as consequently, there is no competitive position of the state. Announced by the government support program was implemented only partially or not implemented at all. Actual expenditures for the development of the field are often lower than planned in the state budget.

In the new market environment, which is caused by Ukraine's WTO membership and integration processes with the EU, the state must be coordinator, which develops and ensures compliance with the rules by which private and state enterprises of the agricultural sector of Ukraine work.

Adaptation of the Agricultural Sector of Ukraine to the new requirements and principles of the EU Common Agricultural Policy would allow avoid mistakes in the process of reform and streamline the system of state support to producers of agricultural and food products, including modern principles of the CAP: the environment protecting, ensuring a gradual waste-free

production, protecting animals health, reorientation of agriculture on high quality products and environmental protection.

REFERENCES

1. Постанова КМУ "Про затвердження Державної цільової програми розвитку українського села на період до 2015 року" від 19.09.2007 р., №1158. /Електронний ресурс/. – Доступний з: http://www.zakon.rada.gov.ua
2. О.Шик, Н.Карлова. Совершенствование классификации бюджетных расходов на аграрный сектор и приведение ее в соответствие с требованиями СОТ // Бюллетень Центра АПЭ. - 2003. - №3 (17)
3. Кобута І. АПК: СОТ. Шанс, яким треба ефективно скористуватися // Урядовий кур'єр. - №56. - 26 березня 2008 р.
4. Губенко В.І. Диверсифікація та підтримка експорту продукції АПК в умовах членства України в СОТ // Вісник Білоцерківського державного аграрного університету: Збірник наукових праць (економічні науки). - Біла Церква, 2009. - №21. - с.6-13
5. Сільське господарство та продринок України після вступу до СОТ // Агроперспектива. - 2005. - №9
6. Гайдуцька П.І. Україні потрібна нова аграрна політика // Економіка АПК. - 2005. - №10
7. ЗУ "Про основні засади державної аграрної політики на період до 2015 року" // Урядовий кур'єр. - №218. - 16 листопада 2005р.
8. Меєрс, С Дем'яненко, Т.Джонс, С.Зоря. Зміна фокуса аграрної політики та розвитку села в Україні: висновки та перспективи для руху вперед. - К.: КНЕУ, 2005. - 172 с.
9. Офіційний сайт Світового банку // Електроний ресурс/. – Доступний з: www.worldbanc.org
10. Статистичний щорічник України 2012 рік // Електроний ресурс/. – Доступний з: www.ukrstat.gov.ua
11. Дем'яненко М.Я. Державна підтримка як фактор забезпечення конкурентоспроможного аграрного виробництва/ М.Я.Дем'яненко, Ф.В.Іваннина// Економіка АПК. - 2009. - №9

EFFECT OF INTEGRATION PROCESSES ON THE COMPETITIVENESS OF INDUSTRIAL PRODUCTION IN UKRAINE

Svetlana Sannikova
Marina Ivanova

The competitiveness of the Ukrainian industry is studied in terms of resource use of the gross value added and innovation activity of the enterprises. With the methods of mathematical modeling the efficiency of the use of industrial resources is examined. The influence of foreign capital on the results of industrial production is evaluated.

INTRODUCTION

The relevance of the competitiveness of domestic industries is without any doubt, as it is this that determines the long-term economic growth and dynamism. The relevance of the competitiveness of domestic industries raises no doubt, as it determines the long-term economic growth and dynamism. In recent decades, practical directions to solve this problem are widely

discussed. Competitiveness of the economy, the methods for its measurement and relationship to the dynamics of growth were the focus of many world-renowned scientists, including R. Solow, R. Nureyev, E. Chamberlain, R. Vernon, V. Leontief, Y. Poluneev, O. Shvydanenko. Fundamentals of competitiveness of the world economy subjects have been laid by such famous scientists as J. Keynes, M. Tugan-Baranovsky, J. Schumpeter, A. Weber, M. Porter, V. Geets, A. Galchinsky, R. Fatkhutdinov, S. Glazyev and others.

A characteristic feature of the last century was the transformation of the world economic community in a coherent economic system - the global economy. As a result, the adequate assessment and study of many national problems at the level of individual states is not possible. Their formulation in terms of international relations and integration is needed. The most powerful factor in globalizations is believed to be the economic one. It manifests itself in the increasing international competition as a result of redistribution of the world market. Typically, it refers to industries that are dominated by multinational corporations. The high efficiency of their economic activities is due to economies of production scale, a broad scientific and technological research, innovation.

Thus, international integration leads to an objective necessity of competitiveness evaluation of countries globally. Of course, a universal criterion of comparability of competitiveness factors and their impact on the status of a country can not be found. However, the current methodology for calculating economic competitiveness brings together in one measure a wide range of socio-economic characteristics of the state. The most well-known international institution, which defines Index of Economy Competitiveness, is the World Economic Forum. This methodology calculates [1] Global Competitiveness Index, the Growth Competitiveness Index and Business Competitiveness the Index. According to these ratings the competitiveness of Ukraine in recent years has been losing its position, beeng in the ninties position in the list of about 120 countries.

The low competitiveness of the Ukrainian economy with high industrial and scientific potential of the state raises the need for deep analysis of the efficiency of production resources use and national competitive advantages.

1. THE INFLUENCE OF PRODUCTION RESOURCES USE EFFICIENCY ON THE PRODUCTIVITY OF INDUSTRIAL PRODUCTION IN UKRAINE

Since the foundation of the economy is the production of goods, we will analyze the dependence results of industrial production on the operating costs.

To analyze the efficiency of resources usage we can use the production function as follow:

$$y = f(x_i), \tag{1}$$

where y – the volume of production;

x_i – usage of production resources.

In Fig. 1 the dependence of the gross value added [4], established in the industry, on the material, labor and capital costs is shown [22].

These relationships are described by a linear regression with a high degree of accuracy of approximation. To assess the degree of dependence between variables is calculated the elasticity coefficient [12]:

$$E_i = \frac{\partial y}{\partial x}\frac{x_i}{y_i}, \tag{2}$$

where $\frac{\partial y}{\partial x}$ – derivative of a given function in the x argument;

x_i, y_i, - corresponding values of the argument and the function at a given point.

For the linear dependence of the type $y=ax+b$ the elasticity coefficient can be summarized as:

$$E_i = a\frac{x_i}{y_i}. \qquad (3)$$

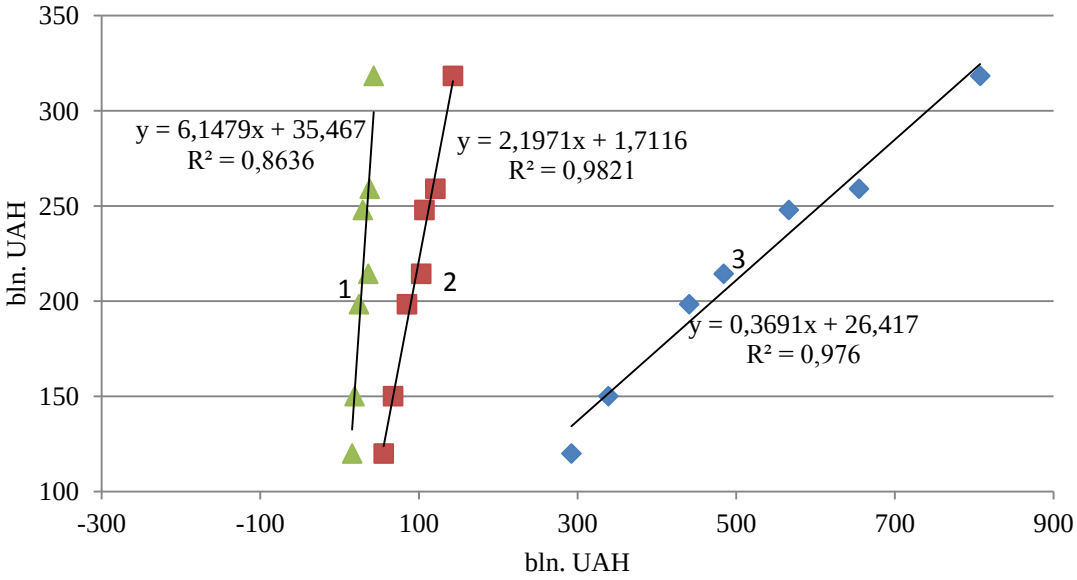


Fig.1. - The dependence of the gross value added in the industry on operating expenses: 1 – depreciation charges, 2 - labor costs and social security contributions, 3 - material costs

The dynamics of the elasticity coefficients of the gross value added on the used resources is shown in Fig. 2.

The highest elasticity of gross value added was observed in labor force, and its variations are not as large as, for example, the depreciation charges. Maximum increase in the gross value added of the dependence curves on the increase of investment in labor resources and basic capital in the crisis year of 2009 is probably related with a reduction in the value of these resources, whose savings due to their conditional permanent nature are more possible than those of material costs. The ratio of average elasticity values on the resources is presented as:

$$E_{LP} > E_{MR} > E_{DC}$$

$$0.99 > 0.87 > 0.83$$

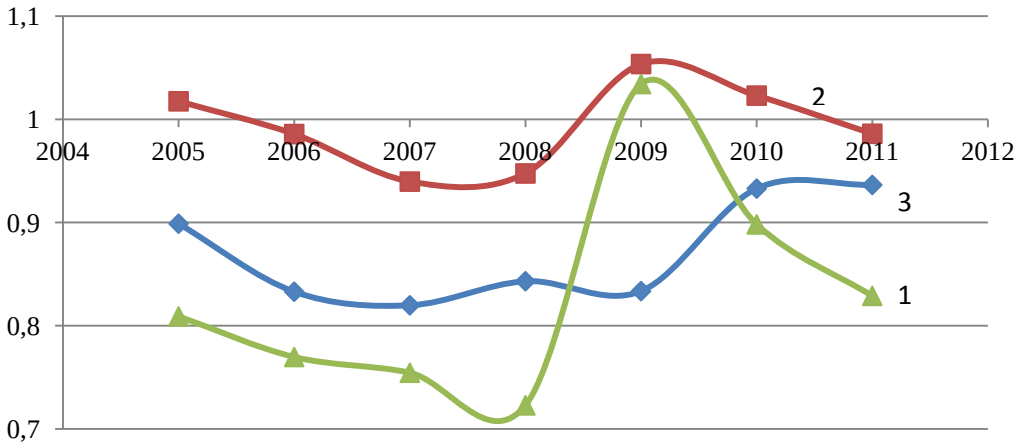


Fig. 2. - Dynamics of elasticity coefficients of gross added value in industry on the used resources: 1 - depreciation charges, 2 - labor costs and social security contributions, 3 - material costs

This leads to the conclusion about the irrational use of material costs and fixed assets in industry. The relative increase of these resources by 1% results in production increases to a lesser extent (0.87 and 0.83%, respectively).

According to M. Porter [24], in the global economy the separate states compete but not the industry or sector. If one follows the structure of the Ukrainian industry, it is clear that the dominant role (60%) in the creation of gross value added belongs to the sector of processing industries, which are the most dynamic and progressive production, such as: mechanical engineering (10%), chemical industry (6 %), metallurgy (18%). It is these industries technically supply the entire economy and deliver advanced technology for other industries. Considering the fact that the share of processing industries in the developed countries and their contribution to scientific and technical progress increase, it is advisable to identify the vector of development of Ukrainian processing industry. In Fig. 3 the dependence of the gross value added [4], created in the processing industry, on the material, labor and capital costs [22] is shown.

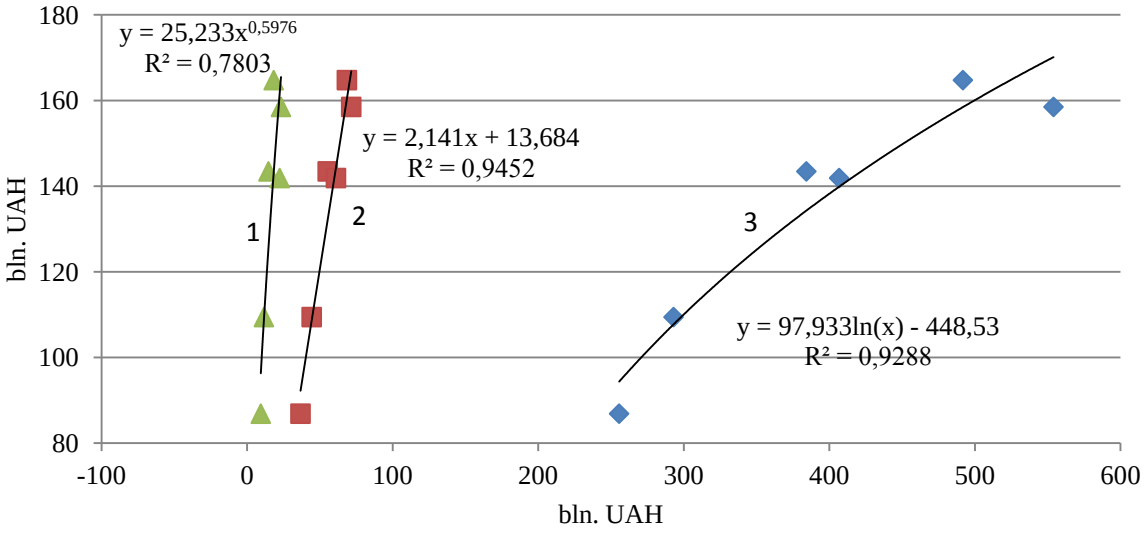


Fig. 3. - The dependence of the gross value added in processing industry on operating costs: 1 - depreciation charges, 2 - labor costs and social security contributions, 3 - material costs

It is seen that these curves describe both the linear and non-linear dependencies. The parameters of the mathematical models of the presented functions are given in Table. 1. The calculation of elasticity coefficients for nonlinear models is made by equation 2.

Table 1

Parameters of the mathematical models of production functions for the processing industry

Productive resources	The model of the production function	The determination coefficient R^2	Formula of elasticity coefficient $E_{i,\,proc}$
Material resources (MR)	$y = 97.933lnx - 44.53$	0.929	$\frac{97.933}{y_i}$
Used capital (DC)	$y = 25.233x^{0.5976}$	0.780	0.5976
Labor (LP)	$y = 2.141\,x + 13.684$	0.945	$2.141\frac{x_i}{y_i}$

The dynamics of the elasticity coefficients of the gross value added in the processing industry on the used resources is shown in Fig. 4.

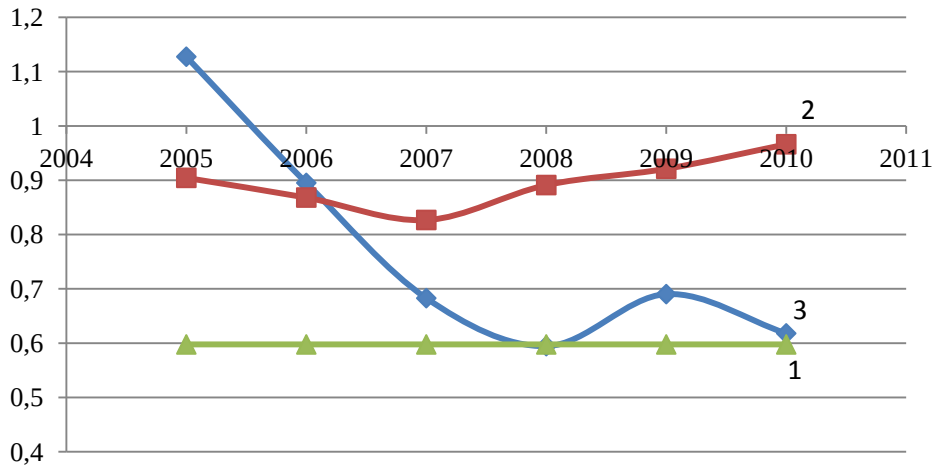


Fig. 4. - The dynamics of the elasticity coefficients of gross value added in the processing industry on the used resources: 1 - depreciation charges, 2 - labor costs and social security contributions, 3 - material costs

The data given show that the output is more elastic in labour costs, relatively to other factors of production - material resources and the use of capital - the output is less elastic. Establishing a relationship between the average elasticity coefficients in the processing industry also indicates the time-consuming and extensive nature of the production:

$$E_{LP} > E_{MR} > E_{DC}$$
$$0.89 > 0.76 > 0.59$$

To determine the effect of individual production resource on economic result of an industrial activity let's compare the elasticity coefficients estimated for the processing industries E_{proc} and average for the industry E_{ind}:

- for material resources $E_{MR\ ind} > E_{MR\ proc}$, i.e. the involvement of additional materials in the processing industry will lower economic output than in the average for the industry. Therefore, for the effective functioning of the processing industry, it is advisable not to increase output but produce products with a higher degree of processing, and as a result of higher added value;
- labour $E_{LP\ ind} > E_{LP\ proc}$, indicating less labor and the contribution to gross value added by processing enterprises. This is quite understandable by greater automation and mechanization of production processes in these industries. On the other hand - it states the fact of more labor intensive and extensive type of production in the primary industries;
- on the used capital $E_{DC\ ind} > E_{DC\ proc}$, indicating the fact less capital productivity in processing industries, and, probably, their smaller load than the average for the industry.

Thus, the lowest elasticity of industrial production is shown by the factor of capital, although it is known that this factor is a guarantee of production intensification [18, 19]. Inelasticity effect of fixed capital operation (depreciation charges) on the formation of the gross value added of industry shows a decrease in their importance as a factor of production.

The concept of "investment" as a resource for the production can be regarded both the cost of capital consumption (depreciation) and the cost of inputs of fixed productive assets (investment). Since the beginning of reforms in Ukraine, many assets are outdated and have not been used to full capacity. In this situation, average expenditure estimates of the old and new assets are not quite correct. Therefore, according to the authors [2], an objective assessment of the effectiveness of the use of newly established assets of companies can be given by investment. As part of the latter it

makes sense to stress direct investment. Foreign direct investment is the part of the balance of payments and the form of the international position of a country.

It is traditionally believed that the influx of foreign capital in the economy is extremely important for the economic growth of the state. However, some experts question the positive influence of foreign capital in the national economy [13, 20, 21, 38].

Let us consider in more detail the impact of investment (I), including foreign ones, on the result of the production function, and build the dependence:

$$y = f(I), \quad (4)$$

where y – the volume of industrial production объем производства промышленной продукции.

Fig. 5 shows the dependence of the gross value added in the industry on the investment in fixed assets [10], and foreign direct investment [30].

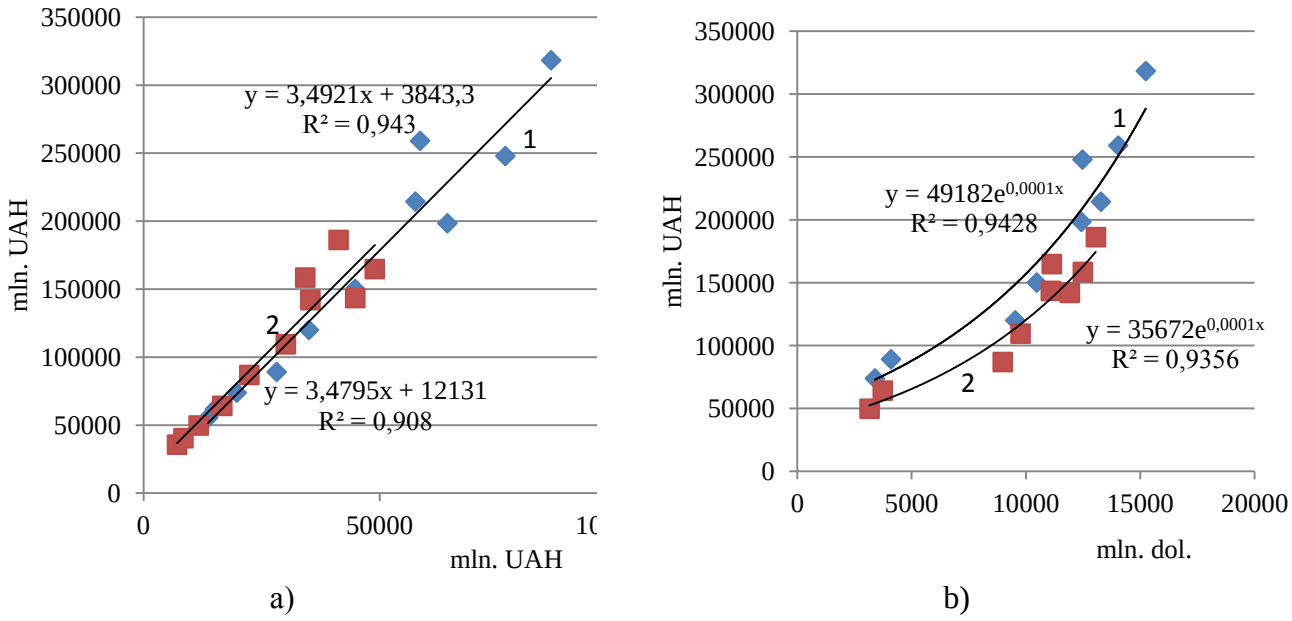


Fig. 5. - The dependence of the gross value added in industry as a whole (1), and the processing industry (2) on the capital: a) capital investment, b) foreign direct investment

As can be seen from Fig. 5, the production functions for investment in fixed assets can be described as a linear relationship, and foreign direct investment as exponential. The parameters of these functions are presented in Table. 2.

Table 2

Parameters of mathematical models of production functions on investment

Modeling object	Production resources	The model of the production function	R^2	Elasticity	
				Instant (at the point)	Average
Gross value added in industry	Investment in fixed assets	$y = 3.492x + 3843.3$	0.943	$3.492\frac{x_i}{y_i}$	0.945
	Foreign direct investment	$y = 49182e^{0.0001x}$	0.943	$4.918e^{0.0001x_i}\frac{x_i}{y_i}$	1.031
Gross value added in the processing industry	Investment in fixed assets	$y = 3.479x + 12131$	0.908	$3.479\frac{x_i}{y_i}$	0.864
	Foreign direct invest	$y = 35672e^{0.0001x}$	0.936	$3.567e^{0.0001x_i}\frac{x_i}{y_i}$	0.887

Graphical analysis of elasticity on capital shows that since 2005 they essentially have not changed and can be averaged. The comparison of these values, presented in Table. 2, indicates a greater sensitivity of the gross value added of industrial production to foreign direct investment and greater efficiency of these investment. On the other hand, lower values of the elasticity coefficients for investment in processing industries can, according to researchers [7, 36, 37], indicate the preservation of technological backwardness of Ukrainian production. Indeed, if we trace the dependence of industry profitability [28] on the value of the invested capital [10, 30], the unique correlation does not show up.

To sum up, we note that the greatest influence on the formation of the gross value added in the industry is labour and capital investment. The ratio of the elasticity coefficients of labour and investment $E_{LP} > E_{I}$ (Fig. 2, 4 and Table. 2), however, indicates a low intensity of labour and inefficient mechanisms industrial resources usage.

2. EFFECT OF INNOVATIVE ACTIVITY OF INDUSTRIAL ENTERPRISES ON MACROECONOMIC INDICATORS OF UKRAINIAN ECONOMY

Modern civilization is man-made, and its development is due to the massive technological innovation. Yet globalization expands scientific and technological development and selection of partners for cooperation at the international level. Currently, European countries receive some benefits from the fact that Ukraine has its own raw materials, a large area, an educated population, strong industrial infrastructure and financial system [6]. This allows developed countries to reduce their risk of recurrence by shifting economic crises in developing countries, including in Ukraine. The mechanism and consequences of such a transfer of crises are described in [33]. Subsequent forecasts [16, 17, 32, 34, 39], unfortunately, also confirm the inertial model of development of the Ukrainian economy and increase the technological gap.

Fig. 6 shows the dynamics of the technological coefficient of production for the industry as a whole and separately for the processing industries. Calculation of technological coefficient is performed according to [35]:

$$K_{TEC} = \frac{GVA_i}{B_i}, \tag{5}$$

where GVA_i - gross value added of the investigated sectors of the economy;
B_i – total output in the sectors.

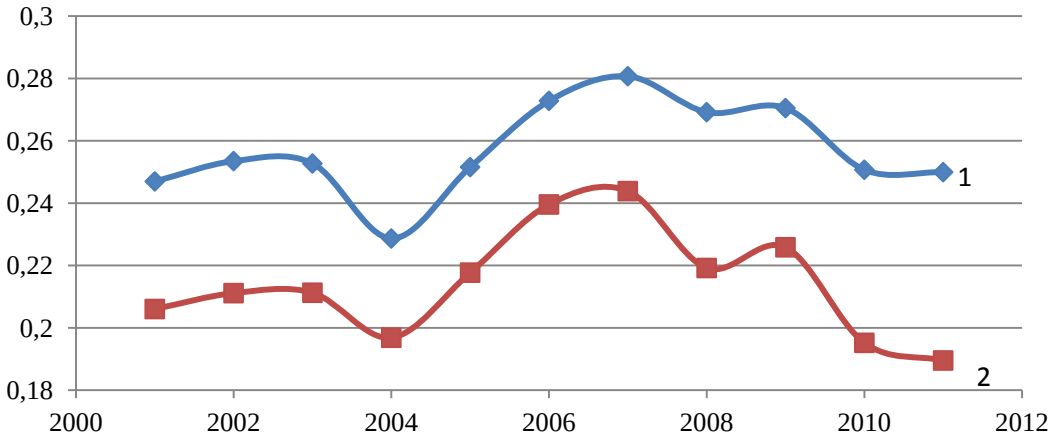


Fig. 6. - Dynamics the technological coefficient in industry (1) and in the sectors of processing industry (2)

The low values of technological coefficients show high share of intermediate consumption (material costs) in industrial production and its weak innovation component. And in the post-crisis

period its technological coefficients is reduced. This is seen especially clearly in the processing industries. However, statistics show the growth indicators of innovation activity in the industry. Fig. 7 shows the cost of industrial innovation and results [31]. It also indicates the relative cost-effectiveness of these characteristics, obtained from the formula:

$$K_{ef} = \frac{SVin._i}{C_i}, \quad (6)$$

where $SV\,in_i$ - the volume of sales of innovative products of the researched sectors;

C_i - the cost of innovation in the sectors.

The total cost of technological innovation consists of current and capital expenditures aimed at carrying out research and development, acquisition of new technologies, production planning and other types of preparing for the production of new products, including marketing and advertising.

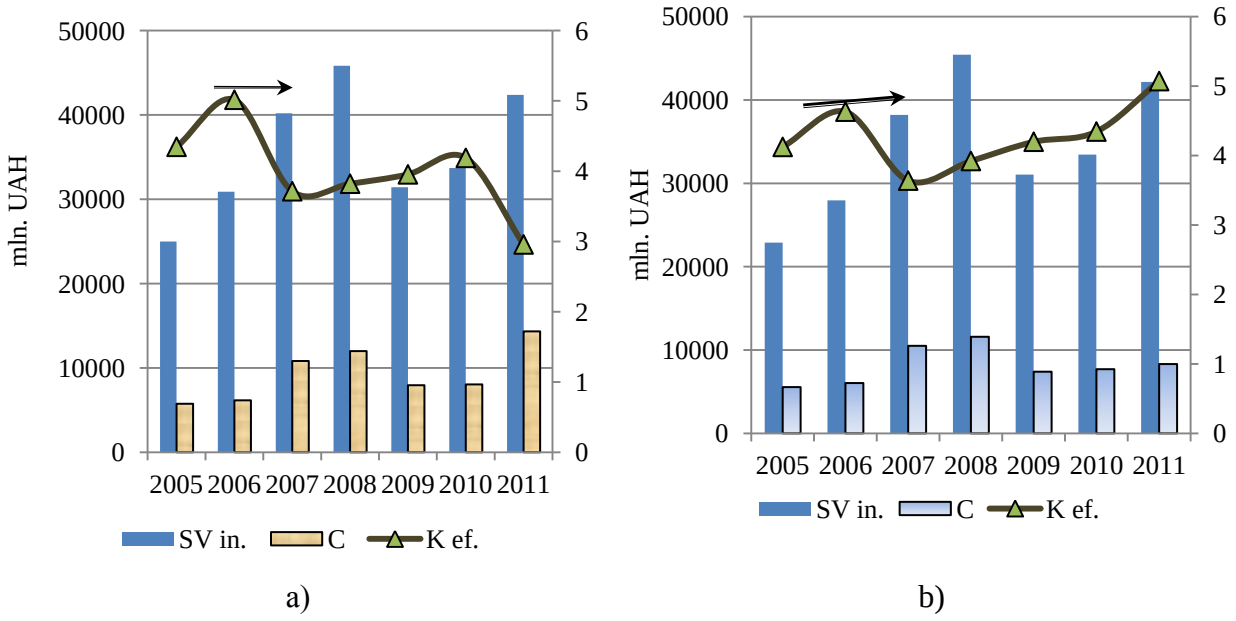


Fig. 7. - Costs of innovation activities of enterprises and sales volume of innovative products: a) average in industry, b) in processing industry

The data presented show the greater efficiency and better dynamics of innovative advances in processing industry. When comparing the sales volume of innovative products to the amount of foreign investment in innovation industry, the correlation was not found. This points to the fact that foreign investors are showing some interest in innovation in the Ukrainian industry, but this factor has not become fundamentally important and systematic.

The advanced countries are focused on the development of high-tech industries and the specific requirements for innovation. Therefore, the basis for competitive advantage of subjects of economic systems is innovation activity of enterprises. Globalization and integration processes between states influence it directly. The objective basis of globalization is a new level of productive forces on the basis of scientific and technological progress, and international economic relations are transformed into the new quality, adequate to current level of productive forces. The role and place of a country in the world community, the living standards of the people are more dependent on the use of new knowledge and technologies.

Let's analyze the impact of the innovative activities of industrial enterprises on the macroeconomic indicators of the Ukrainian economy. Table. 3, based on the official statistics [4, 31], shows the analysis of the dynamics of GDP, sales, the cost of innovation and its share in GDP.

Table 3

Dynamics of economic performance of industrial enterprises of Ukraine

Year	The total costs of innovation, mln. UAH	GDP, mln. UAH	Sales, mln. UAH	Growth rate, %			Share of innovation costs in GDP, %	Share of expenditure on scientific and technical work in GDP, %
				The total costs of innovation	GDP	Sales		
2000	1757.1	170070	-	-	-	-	1.03	1.14
2001	1971.4	204190	210842.7	112.20	120.06	-	0.97	1.13
2002	3013.8	225810	229634.4	152.88	110.59	108.91	1.33	1.11
2003	3059.8	267344	289117.3	101.53	118.39	125.90	1.14	1.24
2004	4534.6	345113	400757.1	148.20	129.09	138.61	1.31	1.19
2005	5751.6	441452	468562.6	126.84	127.92	116.92	1.30	1.13
2006	6160	544153	551729.0	107.10	123.26	117.75	1.13	1.00
2007	10850.9	720731	717076.7	176.15	132.45	129.97	1.51	0.93
2008	11994.2	948056	917035.5	110.54	131.54	127.89	1.27	0.90
2009	7949.9	913345	806550.6	66.28	96.48	87.95	0.87	0.90
2010	8045.5	1082569	1065108.2	101.2	118.53	132.06	0.74	0.90
2011	14333.9	1316600	1120325.4	178.16	121.62	105.18	1.09	0.80

It is established, that up to 2008, there has been an increase in the volume of GDP, sales and the cost of innovation. A considerable influence of the world financial crisis on these indicators is shown as reflected in the reduction of the GDP volumes and sales in 2009 compared to 2008, and a significant decrease (by 33.7%) of the expenses on the innovative activities. Graphical analysis of indicators in the table. 3, conducted by us in [28], showed a strong correlation between the cost of innovation and the economic result of the functioning of the economy (gross domestic product). Moreover, starting from 2005, there is ahead of GDP growth rates with respect to growth in sales.

The main problem in the implementation of innovation activities, which in its essence is very risky, is financial security. Table 4 presents the main sources of financing of innovative activity of Ukrainian enterprises [11].

Table 4

Sources of financing of innovation activity in Ukraine

Year	The sum of costs on innovation, mln. UAH	Including the following costs				Structure of sources, %			
		Own	State budget	Foreign investors	Other sources	Own	State budget	Foreign investors	Other sources
2000	1757.1	1399.3	7.7	133.1	217	79.64	0.44	7.57	12.35
2001	1971.4	1654	55.8	58.5	203.1	83.90	2.83	2.97	10.30
2002	3013.8	2141.8	45.5	264.1	562.4	71.07	1.51	8.76	18.66
2003	3059.8	2148.4	93	130	688.4	70.21	3.04	4.25	22.50
2004	4534.6	3501.5	63.4	112.4	857.3	77.22	1.40	2.48	18.91
2005	5751.6	5045.4	28.1	157.9	520.2	87.72	0.49	2.75	9.04
2006	6160	5211.4	114.4	176.2	658	84.60	1.86	2.86	10.68
2007	10850.9	7999.6	144.8	321.8	2384.7	73.72	1.33	2.97	21.98
2008	11994.2	7264	336.9	115.4	4277.9	60.56	2.81	0.96	35.67
2009	7949.9	5169.4	127	1512.9	1140.6	65.02	1.60	19.03	14.35
2010	8045.5	4775.2	87	2411.4	771.9	59.35	1.08	29.97	9.59
2011	14333.9	7585.6	149.2	56.9	6542.2	52.92	1.04	0.40	45.64
average	79422.7	53895.6	1252.8	5450.6	18823.7	67.86	1.58	6.86	23.70

The data given (table. 4) show that the main part of the financing of innovative activities of domestic enterprises belongs to the own assets of economic entities. For the last years (2008-2011) the share of these assets decreased to 52.9 - 65%, while in the period of 2000-2007 fluctuated in the range of 70.2-of 87.7%. The own assets of the enterprises include profit and depreciation charges. Profit of operating activities of Ukraine industrial enterprises over the last decade is very low and does not exceed 4-6%, including for processing industry of 3-5% [28]. Analysis of the structure of operating costs of the industrial enterprises [22] points to considerable material expenses (61.2%), low wages and social contributions (within 10% of production costs) and the extremely low values of depreciation charges by 2.6 %. Such a meager reinvestment of depreciation inhibits the reproduction of fixed assets and technical re-equipment of enterprises.

A significant constraint is the banking investment of the real sector of the economy, not the market of long-term credits does not work [8, 14, 15]. Aggravation of the problems of financial support of the innovation activity of the enterprises arose due to the practice of the abolition of tax privileges, which were provided for by the Law of Ukraine «On innovation activity» [26], as well as the benefits that are provided to the innovation projects in accordance with the provisions of the Law of Ukraine «On special regime of innovation activity of technological parks» [27]. With regard to foreign investors' assets, the analysis of the data table 4 shows their low weight, except for the crisis 2009-2010.

In absolute terms, the costs of innovative activity of industrial enterprises grow (Fig. 7, table 4), with the exception of the crisis years. However, if these costs are corrected by inflation index [23], the situation would look different [9]. That is, in bringing the cost to the innovative activity to the same period of time (2001), it becomes obvious, that the average annual volume of investment resources in innovative activity remains practically stable.

Therefore, the innovation activity of economic entities is the most effective factor of competitiveness of the national economy. Globalization of the world economy initially affects the specific country, and further economic policy of the country influences innovative activity of the enterprise. For Ukrainian enterprises, the absolute growth of expenditures on innovative activities, however, is not accompanied by the growth of the technological coefficient in the processing industry (Fig. 6). Appreciable influence of foreign capital on the results of the innovative activity of enterprises have not been identified.

3. CLUSTER POLICY IN INCREASING THE COMPETITIVENESS OF THE NATIONAL ECONOMY

One more factor of influence of globalization on the innovative activity of economic entities is the cluster policy. The cluster associations of the enterprises of competitive industries are concentrated on individual countries and regions. Authoritative scientific research in the field of cluster policy convincingly proves that at the national level innovation processes should be considered to strengthen from the positions of the cluster groups [3, 5, 24, 25]. The cluster form of cooperation includes enterprises, which are at different levels of the value chain, from the supplier of raw materials and ending with the producers of final products. Within industry consortia the transfer of technologies, the development of the market position and diversification of the existing enterprises is more effective. The competition between the enterprises of the cluster stimulates research approaches to the modernization and improvement of technical level. As a result of all these factors innovation spread very quickly.

Calculations made in [5] show that combining the two companies may have a synergistic effect on the level of 9-28%. When joining a cluster of four enterprises to synergetic effect on the level of 15-50% can be expected. The advantages of the policy of formation of industrial-innovative clusters are as follows:

- improving the competitiveness of the industrial sector on the basis of purposeful combination of technologically connected industrial entities;

- the cluster is able to increase the profitability of the other industries due to the reorientation of the industry on the production of the science-intensive hi-tech production;

- the cluster of association may become a powerful factor of resolving a number of problems in the interests of national economy, such as: the protection of the domestic market of domestic products; the consolidation of the financial resources of the enterprises with the purpose of investing in the projects of development of own raw-material base and the revival of the domestic market of many kinds of products through the support of consuming industries - machine building, chemical and light industry, pharmaceuticals; stabilization of social situation due to the creation of new jobs and an increase in taxable base at the expense of loading of existing and the deployment of new industries; the improvement of the situation in the «related» with a machine engineering industry sectors - energy, transport, construction, etc.; increase of investment attractiveness of the enterprises of a machine-building complex, included in the integrated structures, as a result of growth of their market capitalization.

All this is obviously very positive, however it is necessary to take into account the real state of Ukraine in the chain of international division of labour. All this, of course, is very positive, however it is necessary to take into account the real state of Ukraine in the chain of international division of labour. The integration of Ukraine into the world community, export growth leads to an increase in the dependence of the state on the changes of the world market, and not to the growth of the welfare of the population and the development of the economy. This dependence shows that the technological gap between Ukraine and the industrialized countries is constantly increasing. Today in Ukraine, unfortunately, dominated by the reproduction of traditional technological schemes and this has a negative impact on the level of production costs and quality of production, thus reducing the competitiveness of Ukrainian producers in the world space.

As world experience shows, the effective and purposeful use of the investment is achieved only when their structure provides for priority development of high technological modes, and otherwise the increase in the volume of investment may lead to deterioration in the structure of the economy. It is this fact that in the conditions of the global division of labour promotes conservation of the economy in the underdeveloped technological structure of [7, 20, 36, 37]. This very fact in the conditions of the global division of labour promotes conservation of the economy in the underdeveloped technological structure of [7, 20, 36, 37]. Under such circumstances, the creation of the cluster groups for production of final consumption with a high share of added value is very problematic. The most successful principle of regional clustering can be demonstrated on the example of modern agro-industrial complexes of Ukraine. In this sphere, the production passes its way to the selling through a complete processing: from cultivation of raw materials to the manufacture of a commodity output. In other industries, it is very likely that the cluster associations will only extend the range of existing plants - primary enterprises, cooperating with the processing, which produce goods with a low degree of processing (semi-finished products).

Under such conditions the first step to improve the efficiency of the functioning of the industrial sectors is the improvement of the technical level of enterprises and priority of the development of processing industries - mechanical engineering, chemical and light, is capable of producing highly-profitable high-technology products, oriented to the internal market with a view to import-substitution. Under such conditions as the first step to improve the efficiency of the functioning of the industrial sectors we see the improvement of the technical level of enterprises and priority of the development of processing industries - mechanical engineering, chemical and light, is capable of producing highly-profitable high-technology products, oriented to the internal market with a view to import-substitution.

CONCLUSIONS

The ccompetitiveness of industrial production directly determines the competitiveness of the national economy and the level of social standards. The analysis of the carrying capacity of the gross value added in the Ukrainian industry showed that human and material resources remain the

main factors of competitiveness. The analysis of the carrying capacity of the gross value added in the Ukrainian industry showed that human and material resources remain the main factors of competitiveness. The methods of mathematical modeling set the ratio of the average values of the elasticity coefficients resources (Ei < 1), that testifies their irrational use.

At the relative growth of these resources at 1% the result of production increases to a lesser extent (0.99; 0.87 and 0.83% respectively). However, the value of the gross value added in industry is influenced by the impact of the capital investment, including foreign ones. The comparison of the elasticity of these resources testifies to a greater sensitivity of the gross value added to foreign direct investment, that is, the greater effectiveness of these investments. On the other hand, the lower values of the coefficients of elasticity for investment in the sectors of the processing industry can testify to the conservation of the technological backwardness of the total Ukrainian production.

This allows us to conclude that the greatest influence on the formation of the gross value added in the industry have human resources and capital investments. The correlation of elasticity coefficients of labour and investment $E_{LP}>E_I$ indicates a low capital-labour ratio. Thus, investment is not yet the main factor of competitiveness in the industry.

Taking into account the strengthening of innovation as a factor of competitiveness in the world economy, we have studied the influence of innovative activity of industrial enterprises on the macroeconomic indicators. For Ukrainian enterprises, the absolute growth of expenditures on innovative activities have been established, however, it is not accompanied by the growth of the technological coefficient in the processing industries. Appreciable influence of foreign capital on the results of the innovative activity of enterprises has not been identified.

As a factor of globalization impact on the innovative activity of economic entities the cluster policy is examined. Creation of clustered groups in Ukraine for the production of final consumption with a high share of added value is very problematic. In such a situation, the most rational is the improvement of the technical level of enterprises and priority of the development of processing industries oriented to the domestic market, and the gradual substitution of imports.

Integration of Ukraine into the world community is developing in disadvantageous scenario: the technical level of domestic production decreases, and the technological backwardness is preserved, resources are spent in large volumes and inefficiently. All this hinders the economic development and competitiveness of the industrial production. Foreign investments, received in exchange for the national resources, do not give the economic result.

REFERENCES

1. The Global Competitiveness Report 2011-2012 [Electronic resource] - access Mode: http://reports.weforum.org/global-competitiveness-2011-2012/#
2. Бессонов В.А. Проблемы построения производственных функций в российской переходной экономике [Текст] / В.А. Бессонов, С.В. Цухло // Анализ динамики российской переходной экономики. М.: Институт экономики переходного периода, 2002. – С. 5–89.
3. Великий Ю.В. Роль малого бизнеса в становлении и развитии кластерных инновационных систем [Текст]/ Ю.В. Великий // Економіка, фінанси, право. – 2010. - № 3. – С. 13-16.
4. Виробництво та розподіл валового внутрішнього продукту за видами економічної діяльності [Электронный ресурс] – Режим доступу: http://ukrstat.gov.ua/
5. Волосюк М.В. Формування регіональних пріоритетів у контексті державної промислової політики [Текст] / М.В. Волосюк // Формування ринкових відносин в Україні: Зб. наук. пр. Науково-дослідного економічного інституту. – К.: НДЕІ, 2007. - Вип. 10. – С.110-115.
6. Глушко О.О. Технологічний розвиток економіки України з позицій світових тенденцій [Текст]/ О.О. Глушко // Проблеми науки. – 2010. - № 1. – С. 2-9.
7. Голіян Н.Б. Вплив прямих іноземних інвестицій на технологічні зміни у країнах Центральної та Східної Європи [Текст]: автореф. дис. на здоб. наук. ступ. канд. екон. наук. / Н.Б. Голіян. – К.: Б.в., 2008. – 21 с.

8. Дацій О.В. Фінансування інвестиційної діяльності підприємств [Текст] /О.В. Дацій // Економіка та підприємництво. – 2006. – № 4. – С. 117-121.
9. Іванова М.В. Аналіз динаміки ресурсних складових потенціалу промислових підприємств [Текст] / М.В Іванова., С.Ф. Саннікова // Сучасні тенденції, передумови та перспективи розвитку підприємств України /колективна монографія під заг. ред. К.Ф. Ковальчука. – Донецьк: ЛАНДОН-ХХІ, 2012. – С. 45-56.
10. Інвестиції в основний капітал за видами економічної діяльності [Электронный ресурс] – Режим доступу: http://ukrstat.gov.ua
11. Інноваційна активність підприємств [Электронный ресурс]. – Режим доступа: http://www.ukrstat.gov.ua
12. Клебанова Т.С. Економіко-математичне моделювання [Текст]: навч. посіб./ Т.С. Клебанова, О.В. Раєвнєва, С.В. Прокопович [та ін.]. – Х.: ВД «ІНЖЕК», 2010. – 352 с.
13. Котляр А. Механизм кредитования технологической модернизации [Текст] / А. Котляр // Экономист. – 2005. - №9. – С. 44-49.
14. Красовська О.В. Стан фінансового забезпечення інноваційної діяльності в Україні [Текст] /О.В Красовська // Проблеми науки. – 2002. - № 10. – С. 12-21.
15. Кузнєцова А. Банківський сектор України як джерело фінансування інвестиційно-інноваційної діяльності [Текст] / А. Кузнєцова, Я. Карпа // Вісник НБУ. – 2004. – №1. – С. 60-63.
16. Лубчук І.В. Ідентифікація технологічного розриву в економічній теорії [Текст]/ І.В. Лубчук // Наукові записки. Сер. Економічні науки. – 2005. – Т. 44. – С.55-59.
17. Мочерний С. Інтернаціоналізація виробництва і сучасні тенденції світового господарства [Текст] / С. Мочерний, С. Комішін // Економіка України, 2006. - № 7. - С.47-55.
18. Нуреев Р. Теории развития: дискуссия о внешних факторах становления рыночной экономики [Текст] /Р. Нуреев // Вопросы экономики. – 2000. - № 7. С. 141-156.
19. Нуреев Р. Теории развития: кейнсианские модели становления рыночной экономики [Текст] / Р. Нуреев // Вопросы экономики. – 2000. - № 4. С. 137-156.
20. Оболенский В. Технологическое соперничество на мировом рынке [Текст]/ В. Оболенский // Мировая экономика и международные отношения. – 2003. - № 7. – С. 3-12.
21. Одотюк І.В. Трансформаційна роль іноземного капіталу в розбудові економіки та сфери наукомісткого виробництва в Україні [Текст] / І.В. Одотюк // Проблеми науки. – 2010. - № 5. – С. 9-17.
22. Операційні витрати з реалізованої продукції (робіт, послуг) за видами економічної діяльності [Электронный ресурс] – Режим доступу: http://ukrstat.gov.ua
23. Основні показники соціально-економічного розвитку України [Электронный ресурс] – Режим доступу: http://ukrstat.gov.ua
24. Портер М. Конкуренция [Текст] / М. Портер. - М.: Вильямс, 2003. – 496 с.
25. Портер М. Международная конкуренция: конкурентные преимущества страны [Текст] / М. Портер. – М.: Международ. отношения, 1993. – 896 с.
26. Про інноваційну діяльність: Закон України від 04.07.2002 №40-IV (зі змінами станом на 25.03.2005) [Электронный ресурс]. – Режим доступу: www.zakon1.rada.gov.ua.
27. Про спеціальний режим інноваційної діяльності технологічних парків: Закон України від 16.07.1999 №991-XIV (зі змінами станом на 12.01.2006) [Электронный ресурс]. – Режим доступу: www.zakon1.rada.gov.ua.
28. Рентабельність операційної діяльності підприємств за видами промислової діяльності [Электронный ресурс] – Режим доступу: http://ukrstat.gov.ua
29. Саннікова С.Ф. Напрямки підвищення інноваційно-інвестиційної активності промислових підприємств регіонів України [Текст] / С.Ф. Саннікова, М.В. Іванова // Інноваційно-інвестиційна політика сталого розвитку регіонів України: від теорії до практики/колективна монографія. Т.2/ під заг. ред. К.Ф. Ковальчука. – Дніпропетровськ: ІМА-прес, 2012. – С. 109-125.

30. Статистичний збірник «Інвестиції зовнішньоекономічної діяльності» [Текст] / За ред. Л.М. Овденко – К.: ДП «Інформ.-видавн. центр», 2012. – 67 с.
31. Статистичний збірник «Наукова та інноваційна діяльність в Україні» [Текст] – К.: «ДП «Інформ.-видавн. центр», 2012. – 305 с.
32. Структурні перетворення в Україні: передумови модернізації економіки [Текст]: Аналіт. доповідь/ за ред. Я.А. Жаліла. – К.: НІСД, 2012. – 104 с.
33. Сухоруков А. Антикризисна політика розвинутих країн Економіка України [Текст] / А. Сухоруков// Економіка України. – 2004. – № 8. – С. 16-27.
34. Теоретичні та прикладні питання економіки: збірник наук. праць [Текст] / за ред. Ю.І. Єханурова, А.В. Шегди. – В. 27. – Т. 2. – К.: Вид.-поліграф. центр «Київський університет», 2012. – 474 с.
35. Тищук Т.А. Економіка України у 2011 році: прогноз динаміки, виклики та ризики [Текст]: Аналіт. доповідь/ Т.А. Тищук. – К.: НІСД, 2011. –88 с.
36. Федулова Л. Перспективи інноваційно-технологічного розвитку промисловості України [Текст] / Л. Федулова // Економіка України. – 2008. – № 7. – С. 24-36.
37. Федулова Л. Технологічна готовність економіки України до нових викликів в умовах відсутності технологічної політики [Текст] / Л. Федулова // Економіка України. – 2010. – № 9. – С. 12-25.
38. Швиданенко О.А. Ризики іноземного інвестування в економіку України [Текст]: автореф. дис. на здоб. наук. ступ. канд. екон. наук. /О.А. Швиданенко. – К.: Б.в., 1999.–19 с.
39. Якубовський М. Концептуальні основи стратегії розвитку промисловості України на період до 2017 року [Текст] /М. Якубовський, В. Новицький, Ю. Кіндзерський //Економіка України, 2007.- №11.-С.4-21.

COMPETITIVENESS UNDER THE CONDITIONS OF INTERNATIONALIZATION

Tatiana Chumachenko
Valeriya Tykhonenko

Dynamic changes of international competitive situation connected with the use of human capital as the basis for accumulation of technical knowledge and change of technological structure of the economy are studied. It is shown that modernization develops on the principles of new knowledge and innovative technological activity.

INTRODUCTION

Under conditions of increasing internationalization competitive situation of all the countries change continuously. Intense competition in the world market has become the main phenomenon in the process of their industrialization. It is natural on the background of international economic development as competitive advantages change as the result of global processes of economic growth.

Ability to fit itself to international changes of competitiveness is becoming more and more important for each country. Economic growth is influenced by two mechanisms: growth of saturation with factors and technical progress. Both components of economic progress result in dynamic changes of comparative advantages of some definite country. These advantages determine competitive situation under the conditions of economic openness. Two different models should be used to analyze the competitive situation in the world markets: Heckscher-Ohlin model of factor propositions and the model of technical changes by D. Ricardo which illustrate structural economic changes connected with the process of internationalization. Their basis is formed by the model of economic growth within long-term development. Permanent or constant structural changes of fields

can be studied using Solow economic growth model [1]. Dynamic of long-term balance of competitive standing of small power under the condition of open economy is of definite interest.

TECHNICAL KNOWLEDGE AS THE BASIS OF COMPETITIVE ADVANTAGES

The analysis of classic models of economic development results in the conclusions explaining continuous structural changes and successive change of international competitive situation within the process of adaption to a long-term balance. In other words while moving to the stable balance within the long-term period change of intensity of using human capital results in changes of manufacturing structure (due to the change of comparative advantages). Here the economy implements new competitive advantages in new branches. This is changing structure in economy that explains dynamic changes of current competitiveness positions of countries.

Current economic orientation to innovative development means intense use of technologies. That is technical knowledge W is taken into account along with such factors as labour L and human capital H while calculating manufacturing capabilities of any country [2].

The influence of these factors upon technical changes can be illustrated best by the example of small open (as relative to the rest of the world) and technologically backward country in which as a rule the supply of both factors L and H is inelastic. Here the economy of the studied country consists of two sectors. In the first one manufacturing factors – simple labour and human capital – allow producing homogeneous end product X. The second sector is a purely research one – it includes only human capital to expand the available technical knowledge W.

Thus, the available human capital is distributed over two sectors:

$$H = H_x + H_w$$

Manufacturing capabilities are described with the help of Cobb-Douglas production function:

$$X = WL^{\alpha} H_x^{1-\alpha}$$

All these factors influence economy in a similar way like in Solow model. However, unlike Solow model technical knowledge grows not along with constant norm but depending on simulation activity in research sector. At the same time W defines technological saturation of end product as the increment of the parameter “technological knowledge” allows manufacturing technologically capacious products. To overcome its technology gap a country has to import technologically capacious products. Research sector being as a rule supported by the government is the basis for technology incorporation. For example, in Asian countries governmental bodies of national level are initiators and operators of innovative structures. As for Europe here active state participation in developing and financing such structures can be seen as well. Thus, research and development sector forming research potential is the national economic asset. To some extent technological advance of a country has the character of public benefit that is the ground for the further use of technologies (or simulation) in the sector of manufacturing end product. The more human capital is implemented into research sector, the more technological gap is in relation to the leading countries of the world. The more new technologies are developed, the more significant knowledge increases.

The way of technological development of Ukraine can be illustrative here. Economic growth data within the independence period shows that purely innovative approach connected with the increase of research intensity of production using out-of-date industrial base is premature; research intensity economy in Ukraine was never developed [3]. With the course of time structural deformation towards raw material sectors becomes more intense, scientific potential reduces, and economic agents show constantly low economic activity [4]. It is no wonder that the position of Ukraine in world rating of competitiveness worsens dramatically.

According to World Economic Forum in Davos Ukraine has lost 10 points within the last five years having shifted from the 72nd to 82nd position among 144 countries. The fall is the result of all the most important constituents – from the quality of innovative environment up to the level of new technologies being available. Some deterioration of the situation can be observed in the sphere of education of Ukraine as well: first-level education has ranked 74 comparing to the 60 in 2008, higher education has ranked the 51 position comparing to the 43.

Despite relatively high quantitative figures Ukrainian system of education does not ensure the growth of competitiveness of the country regions. Thus, Ukraine is among the twenty members of the rating of global competitiveness of WEF as for the index of higher and secondary education coverage (Table 1).

Table 1.

Higher Education and Professional Training and Its Constituents for Ukraine

Index	2008 (of 134)	2009 (of133)	2010 (of 139)	2011 (of 142)
	Rating	Rating	Rating	Rating
	Points	Points	Points	Points
Higher Education and Professional	43	46	46	51
Training	4.46	4.38	4.61	4.58
- Education Coverage	21	16	13	14
	5.58	5.59	6.23	6.23
- Education Quality	55	61	67	72
	4.09	3.92	3.95	3.97
- On-the-job Training	83	89	97	103
	3.70	3.64	3.65	3.54

According to relative number of students of higher educational establishments (79.4%) the country ranks eight among 142 countries. Value of index of higher education quality would grow within last three years (Fig.1).

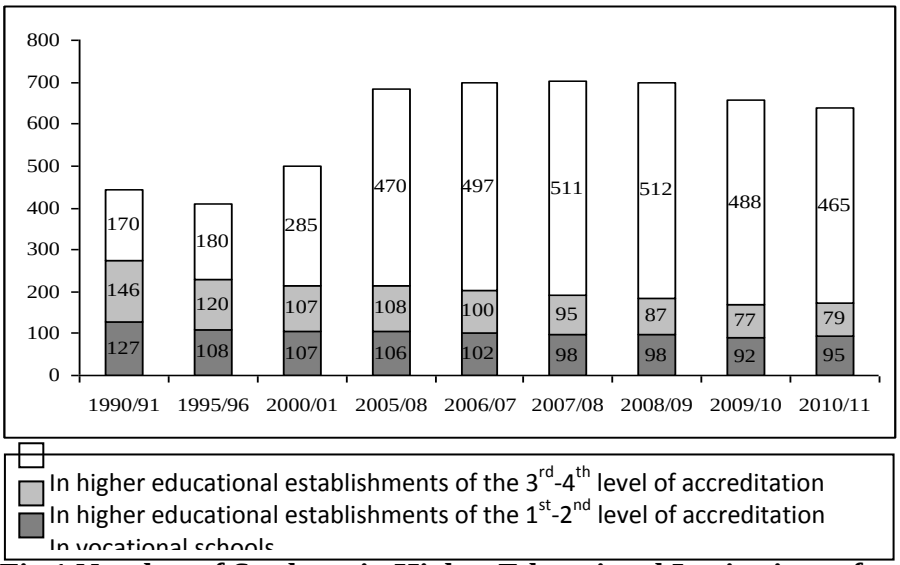


Fig.1 Number of Students in Higher Educational Institutions of Ukraine, people per 10 000. Source: State Agency of Statistics of Ukraine, calculations of the foundation "Effective Management"

However Ukraine loses out to other countries not only in absolute indices but in the rate of their improvement. Loss of positions as for the component "Higher education and professional training" decelerates growth of competitiveness of national economy.

The reason here is low quality of education and further on-the-job training. Year by year these factors reduce general national assessing (Fig. 2).

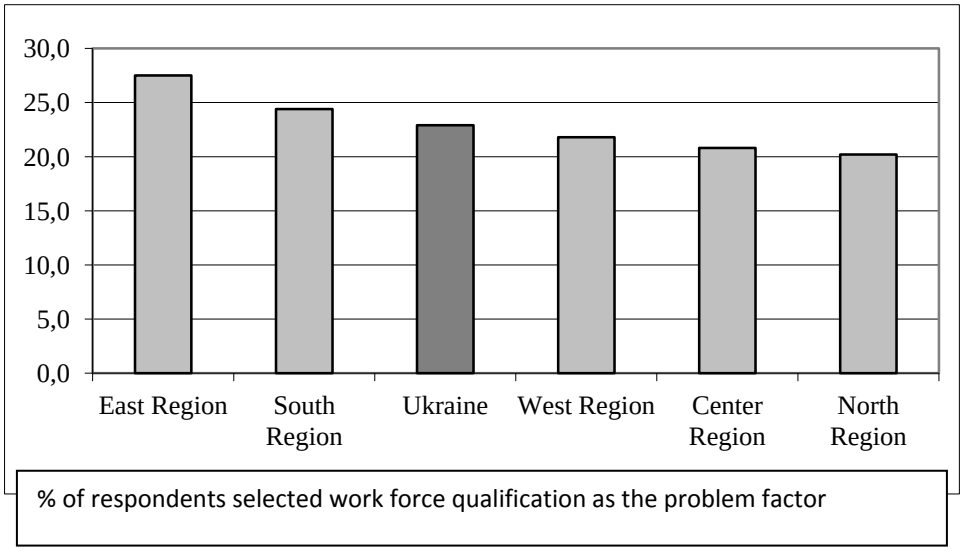


Fig. 2. Low Qualification of Work Force as a Problem Factor for Employers in Ukrainian Regions. Source: polling of company's chief executives in 2011, foundation "Effective Management"

Growth of competitiveness of Ukraine and its welfare will be challenging without development of educational system – first of all increase of education quality and possibility to have on-the-job training. Current imbalance in labour market is explained mostly by the problems on the part of the demand for work force. Salary level of qualified specialists is low. Nowadays it is not profitable to invest into higher education. Employers are also responsible to some extent for low qualification of the work force. As it has turned out companies in Ukraine do not invest into professional development and staff retention. Average value of staff professional development is very low - 3.25 points comparing to worldwide average one – 3.96. Average value of "on-the-job training" in Ukraine is the lowest among all the indices of higher education and professional training (3.81) that is lower than the world average one by 0.22 points

For example, in average 10% of registration number of regular staff (including 2% of professional training, 8% of advanced vocational training) has in-service professional training. At this, interval of advanced vocational training for work force in Ukraine is 16 years while in Western Europe and Japan it is 3.5 years. [5] Employers do not invest into staff because in particular they do not consider human resource as their strategic one or competitive advantage; moreover they also do not invest because their plans are short-term, not long-term due to high national risks. Analysis of rating dynamics as for the given constituent has shown that the country is losing its positions due to low quality of education and poor on-the-job training that is connected directly with the decrease of labour efficiency. Nowadays speaking about the level of manufacturing coefficient of efficiency Ukraine ranks 88 among 212 countries tested by International Labour Organization. The represented formulas show that competitive education forms (directly or indirectly) significant part of general competitiveness of the country through the accumulation of human capital in the research sector. Today scientific activity in Ukraine is concentrated in 1303 scientific organizations representing four different sectors (Fig. 3):

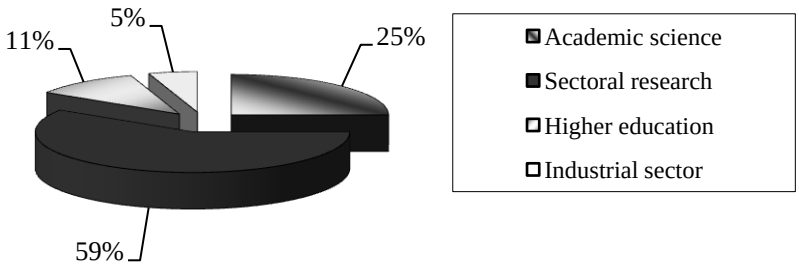


Fig. 3 Sectors of Scientific Research

Index of research intensity of gross domestic product is not more than 0.3%. Underfinancing in its turn is the most important obstacle in improving qualification of staff of research formations. Orientation of science towards self-sufficiency was not successful. Despite the fact that one could observe the growth in amount of research carried out by order of real economic sector share of financing at the expense of this has not increased. This fact shows that there is definite division of the performed operations into minor parts in the research sector and as a result – worsening of human resource qualification.

The following factor is equally important: implementation of innovations and development of research sector in Ukraine remain to be extravagant, unprofitable and nonremunerative. Incentive for development of innovative activity of economic agents which had been implemented in some Ukrainian laws never turned into integral system. Ukrainian business itself has quite moderate resources for investment into enterprise modernization favouring the increase of enterprise efficiency. In 2010 average working Ukrainian contributed 17.8 thousand $US into country's gross domestic product while Russian contributed 37.6 thousand $US, and American contributed 103 thousand $US. Besides, Ukrainian enterprises did not have and still do not have access to cheap financial and credit resources which are quite necessary for the development of innovations. As it is known there are almost no really operating venture capital funds. Though, these are the resources in developed countries which serve as powerful instruments of innovative activity. It is no wonder that the level of scientific research results being in demand is constantly decreasing. As a result last year 12.8% of surveyed enterprises carried out innovative activity in the industry. Number of enterprises implementing innovations is not more than 10% along with that 2.5 as little of general number of innovatively active enterprises deal with technological innovations. Share of implemented innovative products is not large in general volume, just 3.5% [6]. Meanwhile index of innovative activity of not less than 25% is the required one under the conditions of current economy. Its average European level is 40%, in Ireland it is even 74%. In its turn developmental lag of entrepreneurial infrastructure limits attraction of large foreign capital. If foreign investors have objective interest for the regions there is the situation when it is possible to have the following economic feedback exceeding the investments at relatively low initial costs.

Ukrainian innovative infrastructure is not developed enough; it does not cover all the links of innovative process and does not have system approach to the providing corresponding services in the sphere of innovative activity.

To increase competitive positions of Ukraine with the basis on economic theory and international experience first of all it is necessary to develop industrial base, remodeling it by means of purchasing technologies and developing innovative activity as the constituent part of modernization. It will result in change of economic structure towards its efficiency as the expense of proportional development between manufacture, consumption, and accumulation [7]. This statement can be confirmed by mathematical calculations.

Define the available knowledge by V then technological gap can be expressed as:

$$q = 1 - w, \text{ at } w = \frac{W}{V}$$

It follows thence: $\dot{W} = H_w \operatorname{Im}(1-w)$

To provide efficient integration (allocation) of non-qualified workforce into the given national economy its re-training is required that stipulates definite financial costs expressed by p_w – the assumed "shadow" price of public benefit as the result of development of new technology:

$$X'_L = (1-\alpha) W L^{\alpha} H_x^{-\alpha} = p_w \operatorname{Im}(1-w).$$

This condition means that the cost of marginal product of human capital in research sector and end production sector should coincide. Suppose that the decision concerning the share of research expenditures in economic total income can be defined as:

$$p_w W = \lambda \left(X + p_w \dot{W} \right)$$

If we define consumer spending of national economy for domestic consumption by C_x and exogenously assigned world market price of imported goods measured in national units of end product by P then we will obtain the following as the condition of equilibrium trade balance:

$$X = C_x + P \operatorname{Im}$$

As a result we obtain differential equation describing change of technical knowledge:

$$\dot{W} = \frac{\delta}{P} W H_x^{2-\alpha} L^{\alpha} (1-w)$$

This equation shows that the country can increase its own technical knowledge at the expense of simulation of internationally available technologies.

Modern development of competitiveness theory being based on the dynamics of international market functioning has shown that it is more profitable to produce not relatively cheap products but the products that no one can produce so far but is necessary for almost everyone. However to do it one should possess sufficient scientific potential both concerning human capital and available research base. Speaking about national education, government is ready to invest but as for modernization and development of scientific and research structures Ukraine, for example, lacks state financing. The experience of developed countries shows that large private companies interested in innovative development of their business and taking an active part in building innovative model of economic growth in Ukraine are main investors of scientific and research sector of economy [8]. Small business can only fill consumers' market but could not participate in economic modernization. Only big business can take the country at a new level. Ukraine does not have corresponding supporting mechanisms in this part. There are definite preferences for enterprises of separate branches without involving innovative incentives.

High intensity of investment into innovative projects (10% and more) on the part of the largest enterprises can be explained first of all by their export orientation, i.e. by the need for competitiveness in the international market. Though, the role of large corporate structures in innovative models of economic growth is ambiguous. On the one hand corporations have extensive resources including human resources but on the other hand market monopolization results in non-competitive conditions at all. Although studies of interrelations of competitiveness and innovations forming the basis of technological breakthrough in national markets of developing countries have shown that in many cases competitive type is more important than competitiveness availability itself as incentive for innovations. Ukrainian market is peculiar in the following: among the types of innovative activity of Ukrainian enterprises purchasing of machinery and equipment prevails followed by research-and-development activity and costs for software tools. Position of Ukrainian manufacturer is quite conservative: how to find the way to reduce production costs of the products using overage equipment. And there are no long-term plans. In most cases perspective depends not on scientific progress but

on dollar exchange and world prices for raw material. It means that if company has quite solid positions in the market its products are demanded and is not under pressure of competitors; no innovations are required. That is why Ukraine is among the countries overtaking the level of innovative activity. According to European Analytic System "Innovative Union Panel" which traces business policy and competitiveness, Ukraine belongs to the countries which have not developed yet as for innovations. Average index of implementing innovations in Ukraine is not more than 5%. The main thing here is that the latest economic reform has not resulted in finding and implementation of balance between interests of state and taxpayers; mechanisms favouring economic modernization and generation of innovative model of its development have not forged yet.

CONCLUSIONS

Solow economic development model proves that technological development connected directly with innovative processes is the only right way to achieve competitive advantages under the conditions of internationalization of world economy. Ukraine should generate own strategy of economic development and establishment of modern solid industrial basis along with governmental support of innovative constituent in the economy. First of all it is state not consumer markets as market economy usually sees them that is the market for innovative products.

Nowadays technical modernization of basic facilities and increase of process innovations being acquired along with machinery and equipment are quite vital for Ukraine. Here share of product innovations in economic activity of enterprises should decrease. Economic growth is possible only on the basis of industrially technological renovation and innovative development. Two models of behaviour of scientific and technical leader in market of technology [9] among the ones being available today are good for Ukraine: development being oriented towards technological strategies of pointlike breakthrough into narrow market niche and simulation model – copying borrowed technologies. All the more decrease of global demand for high-technology equipment makes it accessible for less developed countries.

Thinking about the context of long-term foreign economic policy of Ukraine it is necessary to have optimal balance of short-, medium, and long-term interests of the state having connected them with the dynamics of economic reforms and structural transformations in macroeconomic complex.

International studies have shown [10] that main difficulties while following innovative policy are connected with the prognostics of development tendencies and development of plan of such perspective activities which will not be out-dated until they are carried out. To solve this problem the following things are required: specific skills, further extension of cooperation between state and private organizations and constant monitoring of social needs. Country is successful when the conditions of economic development favour implementation of the best strategy for any branch of its segment and national competitive advantages are determined by ability of industry for constant development and to generate innovations. Modernization in current sense is the transition from industrial economy to the economy of knowledge, i.e. the development on the principles of technological progress and new knowledge by means of innovative technological activity. State strategy of scientific development is required because it is the development of science that is the real way for Ukraine to world society by means of increasing level of its economic competitiveness. Science is the main force which according to M. Porter's terminology generates developed (or better to say borrowed) sources of competitive advantage having fundamental importance in competitive struggle in the world market [11]. Susceptibility to innovation, as M. Porter claims, is the main competitive advantage of all the levels: from company to state.

REFERENCES

1. Solow R.M. A Contribution to the Theory of Economic Growth // Quarterly Journal of Economics. - 1956. - №70. - P. 65–94.
2. Bazhal Yu. Economic Theory of Technological Changes. — K.: Zapovit, 1996.- 240 p.
3. Simonenko V. “Not Ready for Breakthrough” //Weekly Paper “2000”, № 8(595) “2000”, № 8(595), 24.02—1.03.12
4. Seminozhenko V. Just a Stone's Throw from the Aim // “Mirror of the Week. Ukraine”, №18, 20 May 2011.
5. Yaroshenko G., Zayukov I. Development of Interaction Mechanism of Labour Market and Professional Education of Ukraine // Ukraine: Aspects of Labour. – 2007. – №6. – P. 25-29., P. 26
6. Datsy O. I. Innovative Model of Development of Ukrainian Economy under Conditions of Globalization: Monograph / O. I. Datsy, M. V. Gaman, N. V. Datsy. – Donetsk : Yugo-Vostok, 2010. – 370 p.
7. Basics of Economic Theory: Textbook / S. V. Mocherny, V. K. Simonenko, V. V. Sekretaryuk and others; under the Editorship of S. V. Mocherny. - Kiev: Znannya, 2000. - 607 p.
8. Corporate Structures in Innovative System of Ukraine / Under the Editorship of Doctor of Economic Sciences L.I. Fedulova. – K.: Publishing House UkrINTEI, 2007. – 812 p. P.190
9. Khaustov V. Mechanism of Technology Transfer at National and International Levels / Volodymyr Khaustov // Economist. – 2009. – № 1. – P. 37–41.
10. Innovative Policy of the Future [Electronic Source] – Access Mode: http://www.ye.com/government-innovation.
11. Porter, M. International Competitiveness / M. Porter; Translation from English; under the Editorship of V.D. Shchetinin. – M.: Mezhdunarodnyye Otnosheniya, 2004. – 896 p.

INFLUENCE OF DEMOGRAPHIC COMPONENT IN THE EVALUATION OF AN INTERNATIONAL COUNTRY'S COMPETITIVENESS

Oksana Getman

Basic approaches and methods to identify and assess the country's competitiveness are investigated; also their strengths and weaknesses on the characteristics of the analyzed components are defined. Author's vision of the influence of demographic component in the ranking of country's competitiveness is offered and scheme of determination the country's competitiveness with the influence of demographic component is created.

INTRODUCTION

Investigating the problem of competition and competitiveness has become actuality in Ukraine with getting the status of an independent and sovereign country in 1991. In times of USSR the Soviet economy is propagandized as a one of the leading successful economical system in the world with a model of the “dominant communism”. Collapse of this model led to consideration of competition as a paramount issue. Meanwhile to survive in the market conditions it needs to have competitive advantages. Evolution of scientific discovering of competitiveness's process started with disclosure of competitive advantage by Adam Smith. Scientific researches of D. Ricardo, A. Marshall, J. Keynes, Y. Schumpeter, M. Porter, S. Brue, C. McConnell, P. Samuelson, J. Robinson,

J.K. Galbraith and V. Leontiev built fundament in understanding contents, forms and methods of competition. Also abovementioned scientists have described main peculiarities of market economy. Domestic scientists such as J. Bazyliuk, V. Geets, J. Belins'ka, M. Helvanovskij, J. Zhalilo [2], and others mostly have improved the foreign theory and practice of evaluating competitiveness, tactics and management strategies at the macro-, meso- and micro- levels. Their scientific theses are dedicated to theoretical aspects of competitiveness and mechanisms for rising competitiveness and gaining competitive advantage at the national and international level.

The *purpose of article* is revealing the influence of the demographic component to a country's competitiveness and discovering those peculiarities for Ukraine.

The *objectives of research* are analysis the existing methods for assessment the country's competitiveness and providing an improved mechanism for determining the competitiveness of the country with the demographic component.

1. RESEARCH ANALYSIS

There are a lot of definitions to country's competitiveness as a main property of successful economic system in foreign and domestic scientific literature. For example, in the biggest free Internet-encyclopedia competitiveness pertains to the ability and performance of a firm, sub-sector or country to sell and supply goods and services in a given market, in relation to the ability and performance of other firms, sub-sectors or countries in the same market [5].

Authors of Ukrainian economic encyclopedia by redaction of S. Mocherhij have determined the country's competitiveness as the ability of economical system of the certain country to compete with the economical system of other countries in terms of efficient use of national resources, increasing common productivity of the economy and providing of high living standards [1].

In International level the field of research called the "competitiveness of nations" takes into account that businesses operate in a national environment that can enhance or hinder those businesses' ability to compete within their own countries or internationally. There are many factors that affect the environment in which businesses operate – including the domestic economy and fiscal policy, regulations, infrastructure, the education of the workforce, and many others. Factors may be hard data, such as GDP and miles of paved roads, or soft data, such as the attitudes and values of managers and workers.

There are two main approaches in the modern world the practice of evaluating the competitiveness of nations – WEF and IMD-methods.

The World Economic Forum (WEF) defines national economic competitiveness as "the set of institutions, policies and factors that determine the level of productivity of a country." Its index (from the Global Competitiveness Report's Global Competitive Index [GCI]) is calculated from both publicly available data and the Executive Opinion Survey, an annual survey conducted by the WEF together with its network of Partner Institutes (leading research institutes and business organizations). According to the WEF, the report "assesses the ability of countries to provide high levels of prosperity to their citizens. This in turn depends on how productively a country uses available resources. Therefore, the GCI measures the set of institutions, policies, and factors that set the sustainable current and medium-term levels of economic prosperity" [6].

WEF has published its Global Competitiveness Reports since 1979 and the Global Competitiveness Index (GCI) was introduced in 2005. The 2012-2013 edition ranks 144 economies that are separated into three stages, according to where they are in their development: factor-driven economies, efficiency-driven economies and innovation-driven economies.

The WEF's Global Competitive Index is based on 12 pillars of competitiveness, divided into 3 sub-indexes that emphasize different aspects of market efficiency. As an economy moves from one stage of development to the next, different sub-indexes of pillars become more important: Basic Requirements (institutions, infrastructure, macroeconomic stability, health and primary education); Efficiency Enhancers (higher education and training, goods market efficiency, labor market efficiency, financial market sophistication, technological readiness, market size) and Sophistication

Factors (business sophistication, innovation) [6].

According to the WEF's Global Competitive Report methodology, Ukraine occupies the position # 73 in 2012-2013 of 144 countries assessed for abovementioned criteria (Fig. 1).

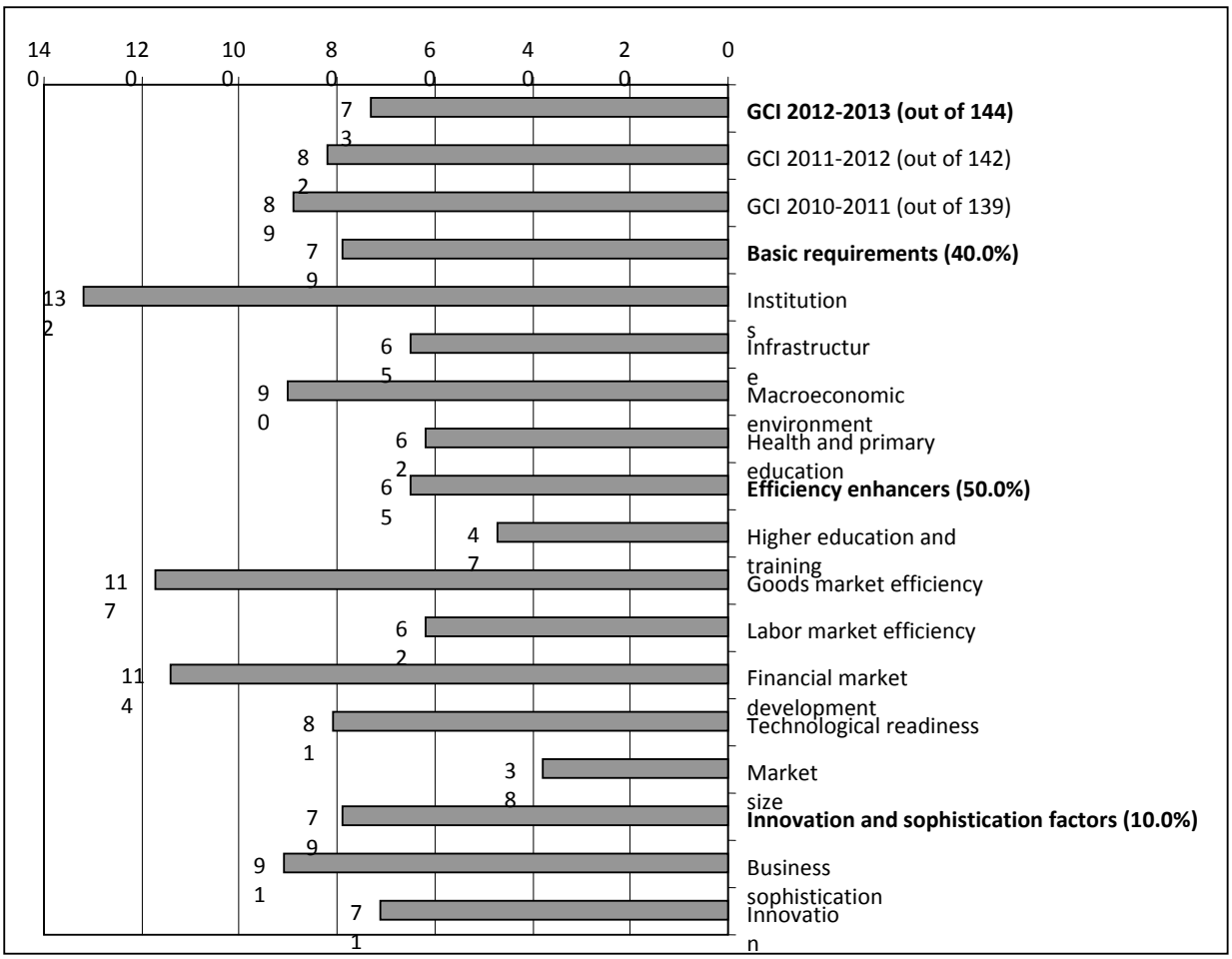


Fig. 1. WEF's Global Competitive Index for Ukraine with ranking components
Source: Ranking built by means data of the Global Competitiveness Report 2012-2013 [7, p. 354]

In survey researchers have identified factors that hinder successful business development in the country. From the list of factors under, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the Figure 2 show the responses weighted according to their rankings. Respondents identified as the most negatively-influenced factors in the implementation of business activity in Ukraine absence of access to finance, total corruption, inadequate tax regulation, high tax rates, invincible bureaucracy and high inflation expectations.

The International Institute for Management Development (IMD) defines national economic competitiveness as "the ability of a nation to create and maintain an environment that sustains more value creation for its enterprises and more prosperity for its people". According to IMD, "some nations support competitiveness more than others by creating an environment that facilitates the competitiveness of enterprises and encourages long-term sustainability". The IMD ranks and analyzes these environments. IMD's methodology for its World Competitiveness Yearbook divides the national environment into four main factors, each with five sub-factors: Economic Performance (domestic economy, international trade, international investment, employment, prices); Government Efficiency (public finance, fiscal policy, institutional framework, business legislation, societal framework); Business Efficiency (productivity, labor market, finance, management practices,

attitudes and values) and Infrastructure (basic infrastructure, technological infrastructure, scientific infrastructure, health and environment, education) [6].

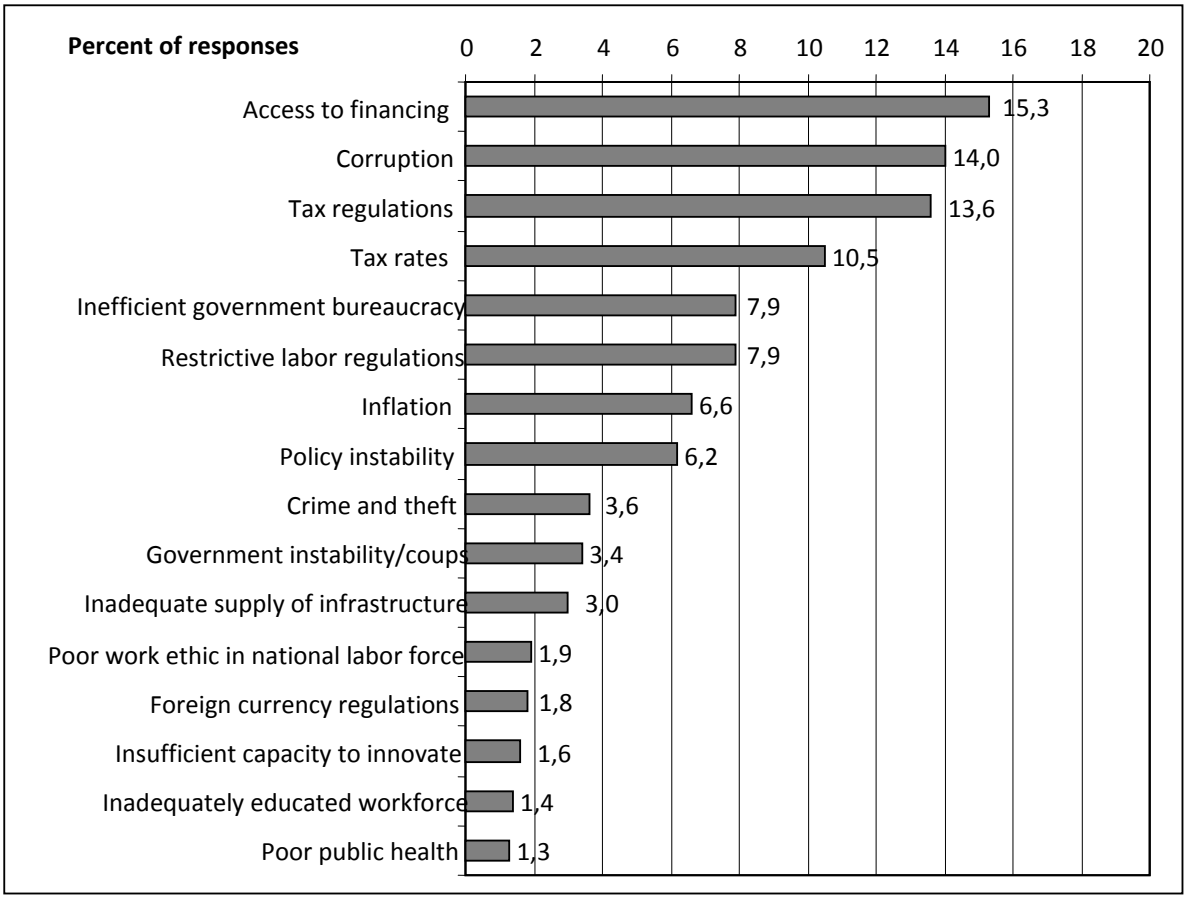


Fig. 2. The most problematic factors, that hinder doing business
Source: Ranking built by means survey of the Global Competitiveness Report 2012-2013 [7, p. 354]

The structure and methodology of this Report are the same as those used in the World Competitiveness Yearbook. This methodology consolidates: ⅔ official statistical indicators from organizations such as the World Bank, OECD, UN, ILO, WTO and our network of Partner Institutes and ⅓ survey opinion data drawn from our annual Executive Opinion Survey, a 115-questionnaire sent to top & middle-level executives worldwide [4].

The rankings found in this Report show how certain economy is compared to the other economies in the World Competitiveness Yearbook: Overall rankings of countries; Competitiveness Factor rankings (Economic Performance, Business Efficiency, Government Efficiency and Infrastructure); Regional rankings: how certain country/economy compared to Europe-Middle, East-Africa, Asia-Pacific and The Americas; Peer Group rankings: how certain country/economy compared to Economies with a population more/less than 20 million, Economies with a per capita GDP more/less than $20 000 and Economies, which are oil dependent; Statistical Tables of competitiveness criteria compare position in worldwide [4].

According to the IMD's methodology for its World Competitiveness Yearbook, Ukraine occupies the position # 53 in 2012 of 300 criteria (Table 1 and Fig. 3).

Results of the IMD's assessment of country's competitiveness show the primary factors that prevent a successful business activity in Ukraine. Institutional framework, social framework, limited access to finance, poor system of healthcare and a critical level of environmental protection determine Ukraine as a country with low social status. Unstable legislation, absence of effective management methods and practice in state regulation, uncontrolled price's growth and undeveloped infrastructure also hinder the development of business in Ukraine.

Table 1

Ranking components in evaluation of country's competitiveness for Ukraine

Evaluated Components	*2008*	*2009*	*2010*	*2011*	*2012*
Overall competitiveness	54	56	57	57	56
Economic Performance	50	55	55	45	48
Government Efficiency	52	56	56	58	56
Business Efficiency	52	53	54	55	55
Infrastructure	46	48	41	48	51

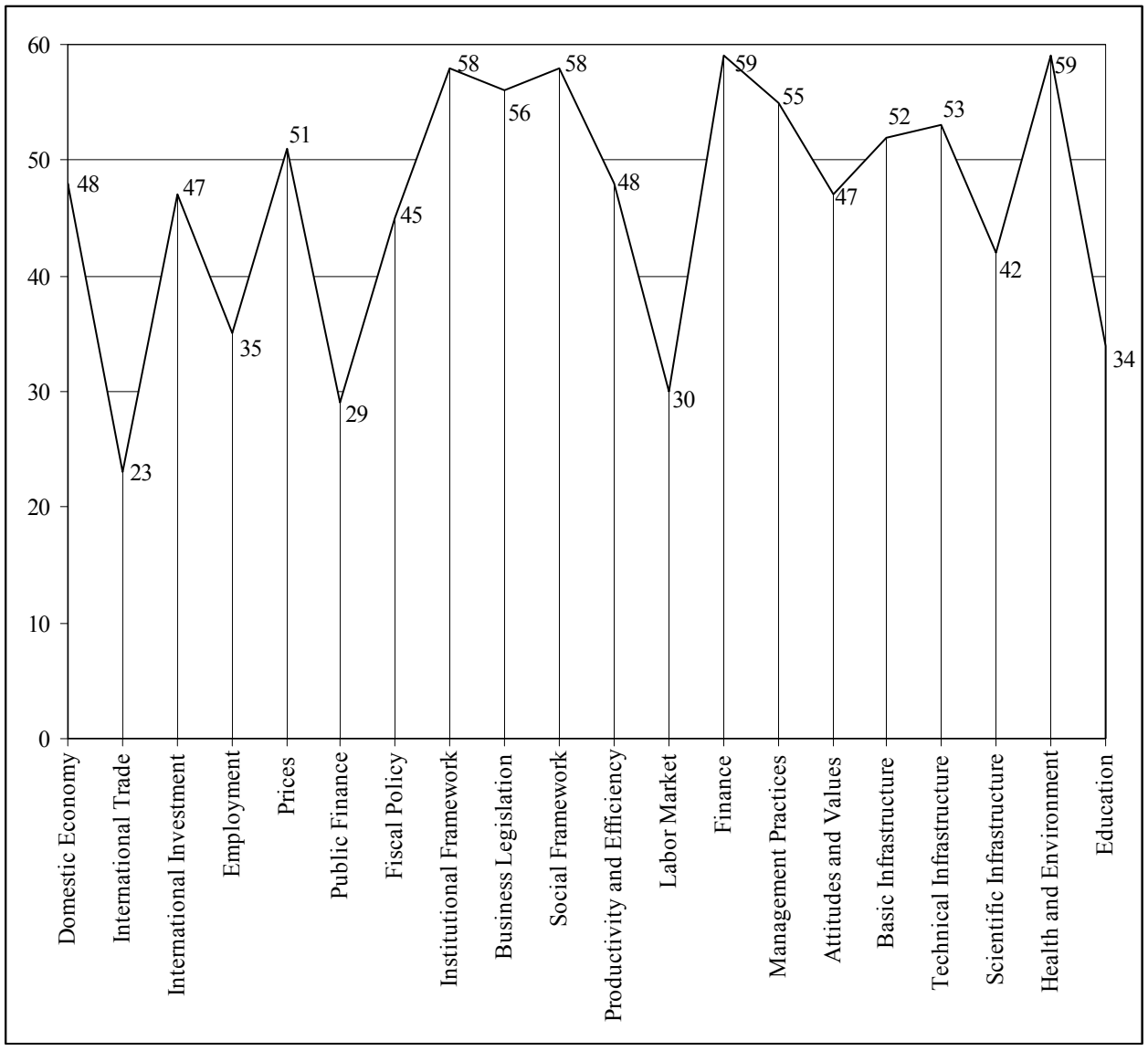


Fig. 3. IMD's Overall Performance for Ukraine with ranking components

Source: Ranking built by means data of the World Competitiveness Yearbook 2012-2013 [4]

Harvard economist M. Porter, who is a very famous expert on this subject, has noted: “A nation's competitiveness depends on the capacity of industry to innovate and upgrade. Companies gain advantage against the world's best competitors because of pressure and challenge. They benefit from having strong domestic rivals, aggressive home-based suppliers and demanding local customers”. However, Porter also notices: “while the notion of a competitive company is clear, the notion of a competitive nation is not” [3].

Opponents of WEF and IMD methods of evaluation of country's competitiveness argue the limitations to the indexes. They put accent to a national economy's unique characteristics such as *culture, history, geography and demographics*. Therefore any change in order of variables and their weight is based on a particular concept of competitiveness can change a country's competitive rank. There are also critics of the very concept of competitiveness rankings, challenging the basic assumption that countries compete with each other like companies and that a country's prosperity is based on its success in international markets.

In our opinion, global rankings are important for two reasons.

First, they are a set of diagnostic tools which highlight the strengths we can build on, as well as the challenges that must be overcome in order to become more globally competitive.

Second, foreign investors pay close attention to the country's indicators and use information to assess country standings across a variety of metrics for investment.

While Ukraine has not ranked favorably in many of these surveys, it is encouraging to see a significant improvement. Our longer-term challenges lie in the area of Education, Science, Technology (especially, IT) and Innovation.

2. SCIENTIFIC RESULTS AND PROPOSALS

Research analysis shows, that country's competitiveness is the extent to which a country is capable of generating more wealth than its competitors make in world markets.

Describing and analyzing the data included in the rating scores of countries, they can be divided into three parts form:

1. Determinants of the sectoral or regional level.
2. Determinants of entities level (companies, firms, organizations, institutions, etc.).
3. Individual-level determinants.

Each rating index of country's competitiveness demonstrates the human recourses (HR) participation in each form of activity reflecting fee and income. As it is well known in economic theory parameter for evaluating the effectiveness of labor recourses is productivity.

Country's competitiveness improves via increased productivity, which is driven by a large array of sectoral or regional-level, entities-level and individual-level factors. Sustained productivity growth requires that an economy continually upgrade itself. International leaders search for those decisive characteristics of a nation that allow its companies to create and sustain competitive advantage in particular fields (industries or sectors). Country's competitiveness necessitates competitive strength across all these three levels (Fig. 4).

Productivity is the value of the output produced by a unit of labor or capital. It is the prime determinant of a nation's long-term living standard and is the root source of national per capita income. The level of productivity depends on both the quality and features of products and services and the efficiency with which they are produced or provided. As such, increasing productivity is the key to enhancing country competitiveness. Many factors (nation's educational, qualifications, scientific strengths etc.) influence productivity, which in turn determines a country's capabilities.

Let's look at the proposed scheme and its components in more detail.

Economic growth and stability (what is base for country's competitiveness) can't be sustained without political and social stability, a well-constructed workable legal system and auspicious macroeconomic conditions. Economic fundamentals have long been considered the cornerstone for economic development, which is today's base for society development.

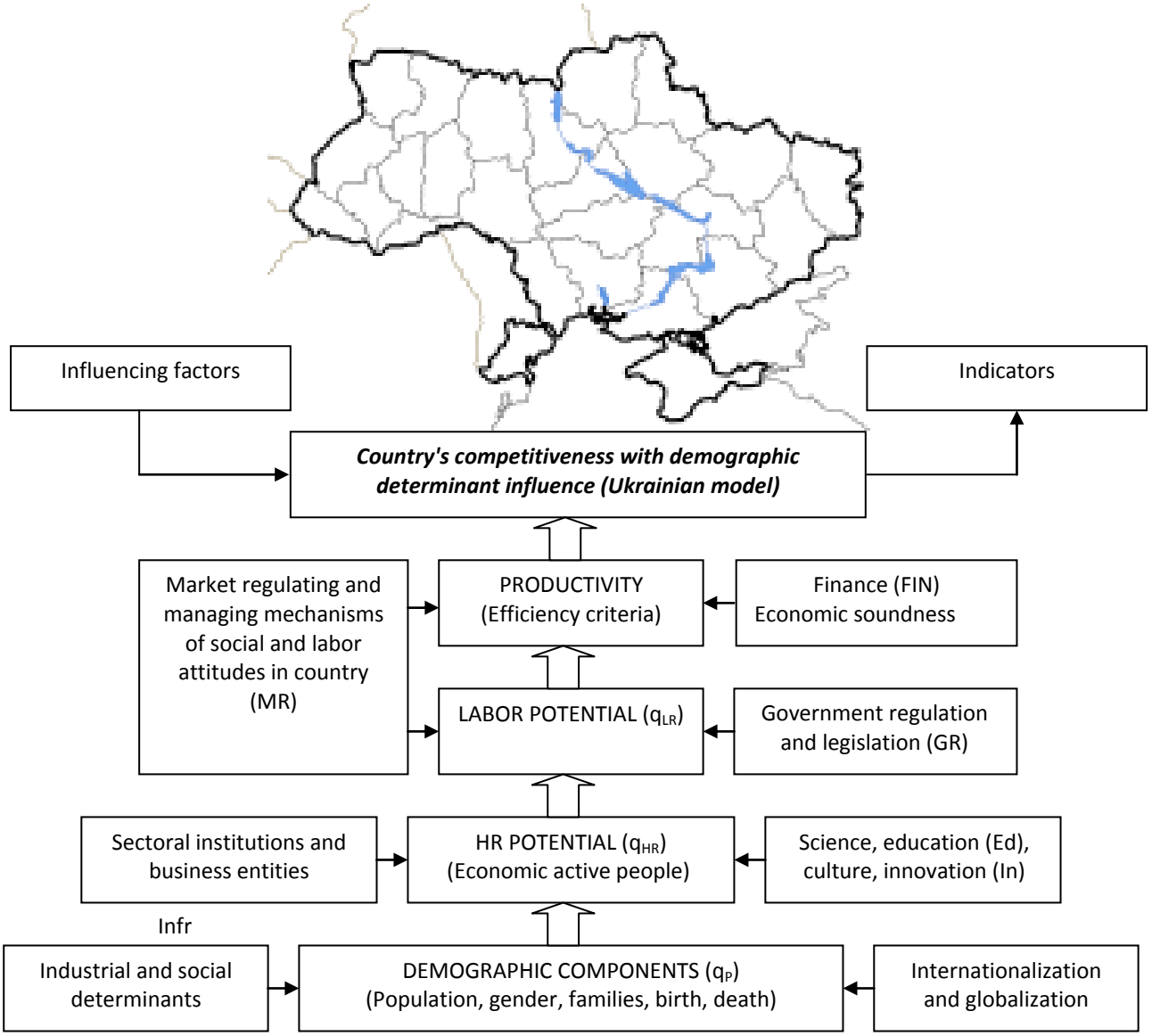


Fig. 4. Scheme of determination the country's competitiveness with the influence of demographic component
Source: Created by Author

Demographic components of society's development include quantitative and qualitative characteristics of population such as: ethnic composition and structure of the population; gender analysis; analysis of fertility and mortality; sex-age analysis of the population; analysis of population density and its regional settlement; analysis of family-building trends and marriage and so on.

Internationalization associated with country's competitiveness refers to the extent to which the country participates in international trade and investment (this participation is one of the key indicators of *globalization*). Impact-factors of internationalization are: exports (both goods and services) and related current account balance; exchange rate systems; foreign investment (both FDI and portfolio investment); foreign exchange reserves and openness of the economy. A high degree of competitiveness requires a high degree of internationalization an economy, because it measures a nation's competitive advantage in an international marketplace compared with other countries.

On the other hand, country's industrial and social determinants influence on the state of the demographic component. For this we would like to present the results of our survey. Questionnaire contains 48 closed-end questions to identify the causes and factors that influence the demographic development of the country. In support of the thesis of the influence degree of industrial and social

component of the questions: "What do you think about the socio-economic situation in your country?" and "How do you assess the infrastructure in your environment?" responses were received, the results of which are shown in Table 5 (a) and Table 5 (b).

Table 5

Survey of factors and reasons that influence on demographic development in Ukraine
Source: own survey "Factors of demographic development in Ukraine"

(a): (country-level)

What do you think about socio-economic situation in your country?		
variants of answers	**I agree**	**I disagree**
favorable financial and tax policy	1,69%	98,31%
effective social policy	10,17%	89,83%
satisfactory medical service in the country-level	16,95%	83,05%
satisfactory pension	5,08%	94,92%
susceptible living standards	10,17%	89,83%
good conditions for self-employment	6,78%	93,22%
extensive workable infrastructure	40,68%	59,32%
convenient public transport	44,07%	55,93%
qualitative education	27,12%	72,88%
stable work	16,95%	83,05%
future perspectives	13,56%	86,44%
low inflation	6,78%	93,22%
adequate social protection in old age	5,08%	94,92%
adequate social protection in health	11,86%	88,14%
adequate social protection in case of job loss or unemployment help	6,78%	93,22%
workable legislation and guarantees of citizens rights	1,69%	98,31%
high level of service and support citizens in public administration	1,69%	98,31%
satisfactory level of schools and childhood centers in rural areas	6,78%	93,22%
total corruption	76,27%	23,73%

(b): (environmental level)

How do you assess the infrastructure in your surrounding?		
variants of answers	I agree	I disagree
well-developed public transport system	66,10 %	33,90%
available prices for using public transport	69,49 %	30,51%
convenient time for using public transport	67,80 %	32,20%
satisfactory medical service in surrounding	23,73 %	76,27%
effective local government	16,95 %	83,05%
good local living conditions	37,29 %	62,71%
favorable local conditions for self-employment and entrepreneurship	11,86 %	88,14%
favorable financial conditions for starting a business, the availability of tax benefits	3,39%	96,61%
well-established infrastructure	32,20 %	67,80%
chances for getting good education	52,54 %	47,46%
quality service to citizens in local authorities	6,78%	93,22%
high level of primary, pre-schools and children educational centers	22,03 %	77,97%
effective socially oriented policy authorities	0,00%	100,00 %
local corruption	84,75 %	15,25%

As our survey shows, respondents put accent the same factors and causes that affect the demographic development in Ukraine at the country level and at the individual level. Respondents of our survey are the average citizens that actualize comprehensiveness and relevance. Respondents expressed extreme pessimism about current socio-economic situation in the country. Mainly they

noticed complete dissatisfaction for all socio-economic spheres (infrastructure, education, social security, living standards, job security, guarantee pension in old age, etc.) that retards demographic development. According to respondents, the only the extensive infrastructure and transport are sufficiently developed.

As for the individual level, respondents in their assessment confirmed the trend of the country's level. At the individual level, respondents mentioned pollution as obstacles to demographic development, and as a result, the poor health of the population, unsatisfactory health care, medical disability, unworkable infrastructure, high level of corruption, absence of social protection, instability, ineffective activities of regulatory agencies and authorities etc. All of this shows to the importance of the above factors for the respondents, placing them in rank priority.

Thus, today the industrial and social determinants form the demographic potential under influence of internationalization and globalization. In turn, HR potential forms depending on the cultural, educational, scientific and innovative level with the participation of sector institutions and business entities (as factor of realization of labor force).

It is well-known, that *innovation* is a base to the process of raising productivity, also a driving force for scientific technical progress. Thus innovation raises a country's competitiveness and the potential for economic growth that, in general, fosters human and economic development. To develop and maintain innovation activity, country has to support and promote *science* and *education*. Education is the prerequisite for the knowledge-oriented economy, while innovative technology has become the prerequisite for bringing education to society. Today it is very important to raise executives not only with business grasp and savvy, but also with the strong technical and communicational base, project-management and human resource management skills. In our opinion, this is the new formula for leaders who can handle the business world's problems.

It should be noted that the symbiosis in the system "innovation-science-education" should take into account the *cultural component*. Traditions, values, historical and geographical roots in combination with the abovementioned factors create so called "marketing value of the region" and thus contribute to improving the country's competitiveness in the international arena.

Economic soundness occupies an important place in the assessment of country's competitiveness because it influences an economy's capacity to grow, the health of the trade sector, the balance of payments, and the attractiveness of investment by foreign businesses. Economic soundness is the extent to which an economy has been equipped with all the economic prerequisites for sustained economic growth. *Macroeconomic soundness* concerns both economic growth and economic stability. Economical growth and sustained competitiveness can be accomplished only if economic stability is maintained. *Finance* is the main determinant of economic stability and growth, and thus country's competitiveness. Specific finance indicators that affect competitiveness include currency valuation, solvency of the banking system, and short-term external debt. Specific elements of economic soundness include investment, consumption, real income level, economic sectors' performance and infrastructure development.

Government raises country's competitiveness through industrial policies and the development of a competitiveness infrastructure. Government should serve as catalysts in providing a stimulating environment for companies and business entities to gain a competitive advantage in international markets. There are several principles that government should take in order to play a supporting role in national competitiveness in our opinion:

1. To emphasize competitiveness infrastructure (developing and improving infrastructure such as education, science, research, transportation and information technology).
2. To enforce production, safety and environmental standards, complying with consumer and social demands.
3. To deregulate unclear competition in each market.
4. To provide strengths of domestic antitrust policy to help the innovative development in competition conditions.
5. To lead sustained investment.
6. To provide employment and social guarantees for different categories of citizens, social

unprotected group and unemployed.

7. To realize strategy for saving population and right human being.

In conclusion the analysis of the proposed scheme should be noted that all of the processes in the economy take place today under the influence of market forces. As a criterion for evaluating the effectiveness of the economy was chosen productivity. So, in this case the market regulative mechanisms of the labor market (including the labor force market and working place market) and managing mechanism of social-labor relations in society take a sincere interest. Since productivity is a measure of the labor effectiveness, i.e. it is the quantity of performed work (in natural or in cost) by worker for a certain time and since macro-economically it depends on a number of parameters that we have analyzed above, we can assume the following functional correlation (Eq. 1):

$$CC \cup PROD = f(q_P, q_{HR}, q_{LR}, GDP,\ FIN,\ GR,\ MR,\ Infr,\ Ed, In) \Leftrightarrow \{Glob + Internationalization\} \quad (1)$$

In contrast to the WEF's methodology for assessing country's competitiveness (CC) in this case clearly expressed the importance of the demographic component, which is highlighted by the creation of the international image of the country. It is abovementioned, which the primary in the economy in any society is demographic potential, as everything is done by people and for people. Therefore, the quantitative dependence competitiveness absorbed, first of all, a measure of performance. The quality of the performance depends on the number of people in it – the economically active population – and as a consequence – the labor force.

This ratio of HR categories determines the capacity of the country, including performance reserves, which can be calculated with the optimistic and pessimistic projections of demographic development.

CONCLUSIONS

Still, the concept of national economic competitiveness has emerged as a new paradigm in economic development.

As our scientific research shows, at the core of productivity is the quality of the human resources of a nation. This is greatly influenced by the quality and standard of education we provide. It is imperative to invest in the proper education and training of workforce (i.e. create so called labor capital) to prepare them for jobs in industries where our country has a competitive advantage. Continuous professional training is important to keep our human resources at par with global standards. Here lies one of the greatest long-term challenges to global competitiveness for Ukraine. Our education standards along with our science and technology, research and development, innovative abilities and our level academic collaboration have been rated low by investors. In a world where comparative advantage is increasingly based on human capital rather than on natural resources, we can't afford to ignore this sector. Because ability to address new problems and the challenges of tomorrow is directly linked to our ability to raise our educational standards today.

Ultimately, the challenge for any nation is how to sustain its competitiveness over the long term. The first thing to remember is that change is a constant. The country's competitiveness is raised as one moves up in terms of GDP per capita. The second is that the whole definition of competitiveness is also evolving. It is moving in the direction of measuring sustainable competitiveness in the sense that metrics now include measuring the ability of today's economy to grow without compromising the ability of future generations to meet their own needs.

REFERENCES

1. Економічна енциклопедія: в 3-х т. / відп. ред. С.В. Мочерний. – К.: Академія, 2000. – Т.1. – 864 с.

2. Жаліло Я.А. Конкурентоспроможність економіки України в умовах глобалізації: Монографія / Я.А. Жаліло, Я.Б. Базилюк, Я.В. Белинська. – К.: НІСД, 2005. – 388 с.

3. Porter M. The Competitive Advantage of Nations [Text] / Michael Porter. – Harvard

Business Review, March-April 1990: pp. 73-93.
4. IMD: World Competitiveness Online: Ukraine – Overall Performance [Internet-assessment]: https://www.worldcompetitiveness.com/OnLine/App/Index.htm. – Title on the screen.
5. Competitiveness: wikipedia [Text]: http://en.wikipedia.org/wiki/Competitiveness.
6. Global Finance: Rankings of National Economic Competitiveness [Internet-data]: http://www.gfmag.com/tools/global-database/economic-data/11863-rankings-of-national-economic-competitiveness.html – Title on screen.
7. World Economic Forum: The Global Competitiveness Report 2012-2013. – Ukraine [Internet-assessment]: http://reports.weforum.org/global-competitiveness-report-2012-2013/.

ENHANCING ENERGY SECURITY OF UKRAINE IN THE CONTEXT OF SOLVING GLOBAL ENERGY CHALLENGE

Svìtlana Tutchenko

The global nature of challenges to increase energy security of countries dictates the need to create a world system of energy resource management in the interest of all mankind. This article describes basic problems of the world energy saving and presents a strategy of enhancing energy security of Ukraine in the framework of solving the global energy problem.

INTRODUCTION

Energy security is referred to as the ability of the fuel and energy complex (FEC) of a country to provide the final consumers with necessary quantity of fuel and energy resources of proper quality. The basis of the economy of any country is the availability of energy resources (potential sources of energy) and its own energy independence. Energy security is an important component of national security.

The issue of energy saving was analyzed by many Ukrainian scientists, namely: M. Zemlyaniy [4], M. Kovalko [5], M. Kulik [17], O. Litvinov [9], Malik[10], A. Prahovnik [13], O. Suhodolya [16], A. Shevtsov[4] and others.

Problems of global energy policy are discussed at the international meetings of the highest level. The key issues are the efficiency of global energy system, interaction between the countries consuming energy resources and countries producing them, development of the fuel and energy complex infrastructure, alternative energy sources and environmental protection.

1. ANALYSIS OF GLOBAL ENERGY ISSUES

The global energy problem is the problem of providing mankind with fuel and energy now and in future. Shortage of energy resources became a global concern in 1970th when the power crisis started. The increase in oil prices (by 14.5 times in 1972-1981) created serious difficulties for the world economy. The global problem of fuel and energy supply is still extremely important nowadays. The increase in consumption of fossil fuel is thought to be the major cause of global energy problem. Acceleration of fossil fuel extraction and production has led to serious deterioration of environment.

Energy crisis can threaten not only a country or a continent but the human civilization as a whole. That is why the problems of global energy security are becoming more and more urgent and widely discussed at the international summits of the highest level.

According to the experts of the International Energy Agency (IEA), energy security is a comprehensive concept, aimed at protecting consumers against disruptions in oil supply caused by extraordinary circumstances, terrorism or inadequate investing into infrastructure and energy markets. The biggest attention lately was given to such key issues as international cooperation, optimum organization of markets and the harmonization of conditions of access to the world's energy resources for all consumers.

A country's economic independence is determined, first of all, by its energy self-sufficiency and supply of resources. Energy independence largely depends on adequate long-term energy policy that involves strategic and tactic measures aimed at achieving energy independence. This policy is to be based on the detailed analysis of the fuel and energy resources and fuel and energy complex of the country that involves the use of the newest scientific and technical solutions and organizational measures aimed at improving the efficiency of processing primary fuels and consuming the end energy resource.

Global demand for the electric power increases quickly (around 3% annually). If this rate remains unchanged, in 20 years the world energy balance can double and at the end of the century it can quadruple. World population growth, improvement of life quality, industrial development and industrialization of the developing countries result in the increase of energy demand. This inevitably leads to considerable depletion of natural resources. To reduce the negative consequences attention must be paid to energy efficiency as a way to manufacture goods with much less energy consumption than in the previous century. In the 20th century about 20 percent of primary energy were used effectively while modern technologies allow to increase the energy efficiency of energy installations by 1,5-2 times. According to the experts' opinion, the implementation of energy saving programs will allow reducing energy consumption by 30-40 percent that will facilitate sustainable development of world power industry.

Energy crisis of the 70's, which accelerated development and implementation of energy-saving technologies, has provided impetus to structural restructuring of the economy. The developed countries are consistent in taking these actions which allowed mitigating the consequences of the energy crisis.

Nowadays a ton of energy resource saved as a result of energy efficiency measures costs 3-4 times cheaper than a ton of newly extracted one. This issue became a serious incentive for many countries to improve their energy efficiency. In the last quarter of the 20th century the energy intensity of the economy of the USA decreased twice, that of Germany - by 2,5 times. In 1970-80s under the influence of energy crisis many developed countries carried out a large-scale restructuring of their economy. Power-intensive industries were displaced and transferred to the developing countries. Restructuring aimed at energy efficiency yields up to 20% of energy resource saving per a unit of GDP. Improvement of technological processes and equipment is an important resource of increasing energy efficiency. In spite of the fact that it requires a lot of investment, the cost of technological development is 2 or 3 times less than the cost of equivalent increase in fuel and energy production.

At the same time many countries with emerging markets (China, India, Russia and Ukraine) continue to develop power-intensive factories (ferrous and non-ferrous metallurgy, chemical industry and others) and to use obsolete technologies. Moreover, in these countries it is possible to

expect a growth in power consumption in connection with the rise in living standards and changes in the way of life on one hand and the lack of ways to reduce the energy intensity of their economies on the other. Therefore, nowadays there is an increase in consumption of energy resources in the countries with emerging markets while in the developed countries the consumption remains at a relatively stable level.

2. THE STRATEGY OF ENHANCING ENERGY EFFICIENCY IN THE INDUSTRY OF UKRAINE

Energy industry is a basic strategic sector of the economy of any country, the main factor in its development. A strategic task of the economic development of our country at present is to carry out qualitative changes in energy industry and related sectors. Among the ways to resolve this problem the priority is given to the strategy of raising the level of energy saving and energy efficiency. In the condition of considerable dependence of Ukrainian economy on imported energy this direction of economic policy is very important both for the state as a whole and for each enterprise. Enhancing the energy potential can take place through the implementation of the policy of energy saving and increase in domestic extraction of fuel and energy resources.

The strategic goal of the state policy in the sphere of energy saving is to reach the level of developed countries regarding energy intensity of both gross domestic product and certain types of goods and services. Achieving this goal will ensure the growth of competitiveness of the Ukrainian economy on the world market, its dynamic development and reduction of energy import to the lowest possible level.

The main criteria that determine the level of development and economic stability of the country is electricity consumption per capita and the energy intensity of gross domestic product.

Energy intensity of GDP in Ukraine is quite high; it is 2.4 times greater than the average energy intensity of GDP in the developed countries of the world.

High energy intensity of GDP increases the cost of the products and reduces their competitiveness. At present, the structure of the energy balance of Ukraine is dominated by traditional fuels, imported natural gas and petroleum products in particular.

According to the Energy strategy of Ukraine till 2030, approved by the Instruction of the Cabinet of Ministers of Ukraine № 145, in 2030 GDP is predicted to grow three times compared to 2010, while the consumption of primary fuel and energy resources is predicted to grow only by 47.5 %. The energy intensity of GDP should drop from 0.24 to 0.48 of oil equivalent to 1 US dollar.

Energy conservation and efficiency are regarded as the most important additional energy supply of Ukraine, no less significant than oil and gas. World experience proves that the expenditure on energy saving measures is 2.5-3 times more effective than investing in the construction of new energy generating facilities. Therefore, in terms of investment restrictions energy saving is thought to be the most rational way of development of the national economy.

It is planned to achieve the world-class performance of energy efficiency with the help of two main factors: technical and structural component of energy saving potential.

The technical component of energy saving potential means raising the efficiency of production (extraction), conversion, transportation and energy consumption and, consequently, reducing the energy intensity of products and services through the introduction of new energy efficient technologies and energy saving measures.

Structural component of the energy saving potential means changing macroeconomic proportions in the economy with the aim of reducing energy consumption, as well as reduction of the specific weight of energy intensive branches of industry and transport through the development of knowledge-based industries and industries with low power consumption and material capacity.

Saving energy resources per unit of end product at an industrial enterprise is achieved by implementing the following energy saving measures: raising the effectiveness of management and organization of processes of production and consumption of fuel and energy resources; stimulating investment into energy efficiency; finding and implementing new technologies of energy generation; modernization and improving the efficiency of existing technological processes; using alternative energy resources, etc.

The active form of energy saving means changing the amount of fuel and energy resources used per a product unit (when evaluating their full cost) at the expense of reducing the consumption of materials, transition to new technologies or a direct replacement of more energy intensive products by less power consuming ones etc. The passive form of energy saving means that no targeted changes in the quality of product or technologies take place. The reduction in energy consumption is achieved by increasing the amount of less energy intensive product as a whole, without any changes in energy intensity for each of its kind.

Study on the technological aspect of the solution to the problem of energy saving depends on the achievements of scientific and technical progress in the context of the level of development of the equipment and technology used. Technical level of production equipment, progressivity of the technologies applied, mechanization and automation of primary and secondary production lines directly affect the efficiency of the fuel and energy consumption, occurrence of losses, thus forming the technical and technological component of energy saving process. Modernization, technical re-equipment, reconstruction and expansion of technical and technological base of the enterprise exert a positive impact on the final results of energy saving.

The economic aspect is implemented through such processes as planning, organization of activities for energy efficiency, substantiation of technical solutions and energy saving technologies; organization of work, primary production, energy services and repair services of power equipment; determination of rational use of fuel and energy resources; motivation of employees to use fuel and energy resources efficiently; stimulating the rationalization work, formation of investment and financial mechanisms for energy efficiency, pricing, tax regulation, etc.

At the stage of energy consumption the enterprises should deal with such tasks as improvement and modernization of technological processes; reducing the energy consumption at the expense of introducing less energy intensive equipment; introduction of machines and equipment which combine several technological operations; introduction of technology with full product processing in a single technological flow; technical modernization based on up-to-date energy saving technologies; the withdrawal of the old equipment with significant specific losses of fuel; increase in secondary energy resources usage; improvement of the regulation and registration of energy consumption etc.

All these measures will not only enable enterprises to use energy resources efficiently but also increase their technical and technological level.

Thus, the economic results of energy saving measures are estimated by the increase in the efficiency of energy consumption and reduction of the cost of the end product. But the main direction of energy saving at an industrial enterprise, according to the author, is introduction of new

energy efficient technologies, which in turn significantly reduces the energy intensity and cost of the end product.

The analysis of the situation with energy saving at the enterprises has to be carried out using both qualitative and quantitative indices. The qualitative analysis is to be focused on the perspective of resource reduction enabled by the advances in science and technology; study of the product and resource markets; forecast of changes of supply and demand and their impact on the economic performance of an enterprise; determining the factors and conditions needed for the development of resource potential of enterprises. The quantitative analysis of energy saving is a complex task. It is a part of the general analysis of economic capacity of enterprises and includes studying the changes in energy intensity of production process, analysis of technologies, rates of energy consumption, size and structure of stock, efficiency of existing schemes of energy saving management.

One of the most important functions of the economic analysis is identification of the capacities for further energy saving, which allows justifying reduction of the product energy intensity. The information received as a result of the qualitative and quantitative analysis of energy saving serve as the basis for the further development of resource saving strategy of the enterprise.

CONCLUSION

Having entered into the 21st century, the world community pays more and more attention to solving global problems of energy security which determine not only the pace of social and economic development, but also the survival of mankind in the future. Although modern civilization is the result of functioning and interaction of many spheres of society life, energy industry is its base link.

Energy industry is fundamental for the world civilization. A lot of countries developed programs of energy industry development for the coming decades.

A new global concept of the future development of the world energy industry is being formed. This concept establishes the following priorities: energy conservation, application of environmentally friendly technologies for extraction, transportation and burning fuel; use of renewable energy sources as the basis for humanity development and saving significant amounts of natural resources for future generations. The concept envisages improving economic structure at the local, regional and global levels in accordance with the principles of efficient use of energy, optimal control and energy balance, taking into account criteria of quality energy and environmental security. To cover multiple increases in energy consumption in the 21st century it is important not only to provide intensive development of all industries and upgrade of outdated equipment but also introduce high technologies and brand new machines. Energy saving means implementation of innovative technologies on a global scale.

At the present stage and for many years ahead the solutions to the global energy problem will depend on the extent of the reduction in energy intensity of the economy, that is, the cost of energy per unit of GDP. On the modern stage of development reducing the energy intensity of GDP remains a strategic task.

The strategic goal of the State policy in the sphere of energy saving is to achieve the level of advanced countries regarding energy intensity of both gross domestic product and certain types of products, goods and services. Achievement of this goal will ensure the growth of competitiveness of the Ukrainian economy on the world market and its dynamic development, reduction of the imported energy to the lowest possible level.

FOREIGN DIRECT INVESTMENT IN THE COUNTRIES OF CENTRAL AND EASTERN EUROPE IN THE CRISIS YEARS 2007 - 2011

Jan Wiśniewsk

This paper discusses the flow of foreign direct investment (FDI) into Central and East European countries in the crisis period from 2007 to 2011. By analyzing these flows the author tries to show that they have been relatively less affected by the crisis than the rest of Europe and the EU. The analysis is carried out mainly on the volume and dynamics of FDI flows, but structural changes in these flows by countries are also taken into account.

INTRODUCTION

The financial crisis which started in 2007 in the U.S.A, and turned into a global economic crisis, had a number of consequences, also in the flows of foreign direct investment. Not only did the flows decrease in terms of scale, but structural changes also occurred. These changes affected the countries of Central and Eastern Europe, too. This region of Europe, however, is characterized by specific features whose nature, conditioned historically, boils down, among other matters, to the relatively lower importance of international cooperation in the production of GDP than in the "old" European Union. As a result, the global crisis was noticeable in the countries of Central and Eastern Europe - generally speaking - relatively more weakly than in other regions of Europe, of which the Polish economy is an extreme example. These facts imply the hypothesis that, in this region, foreign direct investment has been affected by the crisis to a lesser degree. Verification of this hypothesis is a key goal of the discourse contained in this paper. This verification applies to both the inflow and outflow of foreign direct investment.

FDI market turbulence stemming from the crisis led in the very nature of things to structural changes in the market. In this context, identification of changes in the share of individual countries of Central and Eastern Europe in international flows of FDI has been adopted as a supplementary aim of the present study.

1. The inflows of foreign direct investment in the countries of Central and Eastern Europe

1.1. The scale and dynamics of FDI inflows

Central and Eastern Europe is a very diverse region in many ways. Among the parameters of this diversity, firstly different levels of advancement of systemic transformation should be mentioned. Some countries have already fully developed the structures of the market economy and have become members of the European Union - a European economic integration grouping. Other countries either aspire to or are preparing for accession to the EU, e.g. Ukraine. Still others enter non-EU integration alliances or organize such alliances themselves. An example of the first ones may be Belarus, of the others - Russia. Another parameter differentiating the countries of the region is the level of development reached as measured by GDP per capita. In this respect, the diversification is significant.

One can, of course, multiply the criteria of diversification and the differences among the countries of Central and Eastern Europe. However, regardless of these differences the group of countries in question belongs to what can be called emerging markets and, therefore, seems to be

seen as attractive to foreign investors. In addition to a relatively smaller proneness to absorb the global crisis, this is undoubtedly another attribute strengthening the implication in the form adopted above for verification of the hypothesis.

On the basis ofa preliminary analysis of investment flows, it seems that the research hypothesis formulated on the basis of implications is not fully confirmed by the facts, generates the need for in-depth analysis. Indeed, the inflow of FDI in the first year of the crisis, i.e. 2008, in the group of countries surveyed taken jointly, reported no decrease, but an increase. This is a rarity, according to the content of the hypothesis. However, the increase in FDI inflows in this case was made through only some of the countries of the region of Central and Eastern Europe. These are, namely Hungary, Romania, Slovakia, and the four countries that do not belong to the EU: Belarus, Moldova, Russian Federation, and Ukraine. In the countries of the region, in addition to those mentioned above which are also members of the EU, a decrease in the inflow of FDI had occurred already in 2008. Although this decline was relatively lower than in other EU and Europe countries and even in developed countries, it was still noticeably relatively higher than the decline of FDI inflows in the world (See: Table 1 and Table 2). Thus, the verified research hypothesis is partly confirmed even on a global scale, which, nota bene, was not expected in the Introduction and, in part, according to the adopted assumption, i.e. in the context of the EU and Europe.

In the next two years (2009 - 2010) there was a strong decline in FDI inflows in all the surveyed countries, with the exception of Belarus, to which in 2009 the inflow of investments stood at more than 4% higher than in the initial year 2007. In addition to Belarus, the conspicuously lowest declines in the dynamics of FDI inflows were recorded in the Russian Federation, Hungary, Ukraine, and Estonia. These declines were relatively lower than in the same period in the whole group of Europe and the EU. As a result, in these two years, Hungary, Estonia, and a group of East European countries that are not members of the EU were characterized by lower impact of the crisis on the decline in FDI inflows, which confirms the research hypothesis. It should also be noted that, in 2009 also in Poland and Romania, and in 2010 in the Czech Republic, a relatively lower decline in FDI inflows compared to the entire EU was recorded. A special situation, not at all congruent with the formulated hypothesis, was reported in 2009 in Latvia, Lithuania, and Slovakia, where FDI inflows fell to almost zero, and in the last of these countries achieved even a negative value. (See: Table 1 and Table 2).

The last year in the period under analysis, 2011, clearly confirms the formulated hypothesis. Of the thirteen countries included in the analysis, the vast majority, i.e. ten, recorded a higher dynamics of FDI inflow than other countries in both Europe and the EU. The exceptions are: Bulgaria, Estonia, and Romania, in which the inflow of FDI was significantly reduced in comparison to 2007. Out of these ten countries three deserve emphasizing: Belarus, Hungary, and the Russian Federation. FDI inflows to Belarus during the year reached more than twice the pre-crisis level. The crisis in the inflow of FDI to Hungary is also over, while Russia has achieved the status of FDI inflow slightly lower than in 2007. (See: Table 1 and Table 2)

On the basis of the analysis made, it can be concluded that the assumed hypothesis of a relatively low impact of the global crisis on FDI in the countries of Central and Eastern Europe on the influx of these investments was generally confirmed in 2008 and 2011, i.e. at the start of the crisis and in the last year surveyed. However, FDI inflows in the years 2009 - 2010 do not provide a clear positive confirmation of the research hypothesis. It has been positively verified in full only for Hungary, Estonia, and three non-EU countries: Belarus, Russia, and Ukraine. Incidentally, these three East European countries confirm in full, over the period considered, the hypothesis formulated at the beginning of the discourse.

Table 1.

FDI inflows by region and economy in the years 2007-2011 (Millions of dollars)

Region/economy	2007	2008	2009	2010	2011
World	1,975,537	1,790,706	1,197,824	2,309,001	1,524,422
Developed economies	1,310,425	1,019,648	606,212	618,586	747,880
Europe[x]	899,191	569,026	398,935	356,588	425,266
European Union	853,966	542,242	356,631	318,277	420,715
Central and East European Countries, including:	138,210	149,828	71,474	76,395	99,300
A) EU countries:	71,900	61,021	28,129	25,012	34,955
Bulgaria	12,389	9,855	3,385	1,601	1,864
Czech Republic	10,444	6,451	2,927	6,141	5,405
Estonia	2,716	1,729	1,839	1,540	257
Hungary	3,951	6,325	2,048	2,274	4,698
Latvia	2,322	1,261	94	379	1,562
Lithuania	2,015	1,965	66	753	1,217
Poland	23,561	14,839	12,932	8,858	15,139
Romania	9,921	13,909	4,844	2,940	2,670
Slovakia	3,581	4,687	-6	526	2,143
B) Non-EU countries:	66,310	88,807	43,345	51,383	64,345
Belarus	1,805	2,181	1,884	1,403	3,986
Moldova	541	711	145	197	274
Russian Federation	55,073	75,002	36,500	43,288	52,878
Ukraine	9,891	10,913	4,816	6,495	7,207

[x] Excluding the Commonwealth of Independent States

Source:World Investment Report 2012, UNCTAD, Annex, table 1.1., pp. 169 – 172 and own elaboration.

Table 2.

Dynamics of FDI inflows by region and economy in the years 2007-2011

Region/economy	2007	2008	2009	2010	2011
World	100.00	90.64	60.63	116.88	77.16
Developed economies Europe[x]	100.00	77.61	46.26	47.20	57.07
European Union	100.00	63.50	41.76	37.27	49.27
Central and East European Countries, including:	100.00	108.41	51.71	55.27	71.85
A) EU countries:	100.00	84.87	39.12	34.79	48.62
Bulgaria	100.00	79.55	27.32	12.92	15.05
Czech Republic	100.00	61.77	28.03	58.80	51.75
Estonia	100.00	63.66	67.71	56.70	9.46
Hungary	100.00	160.09	51.83	57.56	118.91
Latvia	100.00	54.31	4.05	16.32	67.27
Lithuania	100.00	97.52	3.28	37.37	60.40
Poland	100.00	62.98	54.89	37.60	64.25
Romania	100.00	140.20	48.83	29.63	26.91
Slovakia	100.00	130.89	-0.17	14.69	59.85
B) Non-EU countries:	100.00	133.93	65.37	77.49	97.04
Belarus	100.00	120.83	104.38	77.73	220.83
Moldova	100.00	131.42	26.80	36.41	50.65
Russian Federation	100.00	136.19	66.28	78.60	96.01
Ukraine	100.00	110.33	48.69	65.67	72.86

[x] Excluding the Commonwealth of Independent States

Source: Own calculations on the basis of: World Investment Report 2012, UNCTAD, Annex, table 1.1., pp. 169 – 172.

1.2 Changes in the structure of FDI inflows by countries

The crisis led to radical changes in the flow of FDI in the world. The influx of investment in the period of crisis definitely fell in countries that were most affected by the crisis, especially in the U.S. and Europe, and even in developed countries. Other regions of the world and other countries, in particular developing ones, saw clear growth in FDI inflows. In the years 2007 - 2011, the highest increases in the inflow of direct investment in the world were recorded in East and South-East Asia (mainly in China and Hong Kong, China) as well as in Latin America and the Caribbean (mainly in Brazil). As a result, the share of Europe and the U.S. in FDI inflows was reduced.[22]

In the context of the declining share of Europe including the EU, the situation in the countries of Central and Eastern Europe was relatively positive. However, as for the whole continent, the share of the countries referred to in world FDI inflows decreased. However, this decline was relatively small. This share declined from 7.0% to 6.5%, which is less than 1/10, while the share of the whole of Europe and the EU decreased by more than 1/3 (See and compare Table 3). This is another confirmation of the hypothesis presented at the beginning of the discourse. It can be assumed that the countries of Central and Eastern Europe were relatively attractive for FDI allocation in relation to the rest of Europe. But the attractiveness could not compare to that of China or Brazil, because it did not eliminate the negative impact of the crisis on investment inflows from abroad. By the way, it should be noted here that the attractiveness in the period discussed here was related to a change in the interest of foreign investors as to the areas of the economy in which investments were located. Namely, the investors' interest in the areas of the economy that are particularly vulnerable to crisis, which particularly affected the services sector and the metal industry, electrical and electronic equipment, was decreased. However, interest in greenfield investments in the chemical, agro-food, textile and clothing, and automotive industry was increased.[23]

Together with the changes, as described above, there were structural changes in the inflow of FDI within the group of Central and East European countries. In 2007, when the crisis was initiated, but its effects on the real economy had not yet manifested themselves, EU countries dominated in the structure of FDI inflows in the region discussed. These countries received more than 52% of the total inflows into the region. In this group of countries, the largest FDI inflows were clearly to Poland (17% share of the inflows to the region), Bulgaria (8.96% share) and the Czech Republic (7.56% share). The second group, the East European countries which do not belong to the EU, had a share in the inflow of FDI to the region at the level of almost 48%. Among those countries, the Russian Federation was the largest FDI importer (39.85% of inflows) and Ukraine took second place (7.16% share). (See: Table. 4).

In 2011, and so at the end of the period under investigation, the proportion of FDI inflows to the region reversed. The countries which belong to the EU decreased their share in total inflows to a level slightly above 35%, while the share of all current leaders, including Poland, decreased. Non-EU countries, especially Russia, experienced the same share increase. Before the crisis the Russian Federation was the largest importer FDI.

After the crisis the position of that country strengthened, and more than 53% of all FDI inflows into Central and Eastern Europe was invested in Russia. The second position of Ukraine in the group of countries outside the EU and, at the same time, the third throughout the analyzed region is worth emphasizing. Before the crisis and in 2011, Ukraine had a share of more than 7% of FDI inflows to the region (See: Table 4).

To summarize the presented structural changes, it should be noted that the behaviour of foreign investors clearly confirms their preference for locating FDI in Eastern Europe, particularly in Russia. An increasing interest in Ukraine is noticeable, and that in Belarus is increasing gradually.

[22]World Investment Report 2012, UNCTAD, Annex, table 1.1., pp. 169 - 172

[23]See M. Błaszczak-Zawiła, Międzynarodowe przepływy inwestycji zagranicznych in: J. Chojna (ed.), Inwestycje zagraniczne w Polsce 2009 – 2011, Instytut Badań Rynku, Konsumpcji i Koniunktur, Warszawa 2011, part II, ch. 1, p 167. See M. Kluzek, Znaczenie konkurencji podatkowej dla rozmieszczenia bezpośrednich inwestycji zagranicznych w Unii Europejskiej, Wydawnictwo UE w Poznaniu, Poznań 2012, p. 174.

It seems that these countries of Eastern Europe, more fully than Central Europe, enable the fulfilment of the basic motives of FDI allocation.[24] Indeed, these countries have abundant resources of raw materials and relatively cheap skilled labour. Moreover, the markets of these countries, especially Russia and Ukraine, are extensive and are characterized by relatively small saturation in goods and services. Overall, conditions in Eastern Europe stimulate the inflow of FDI into the region.

2. The countries of Central and Eastern Europe as exporters of FDI

So far highly developed countries have regularly been the largest exporters of FDI. These countries, in search of resources of production factors and markets relatively cheaper than their own, employed their capital in manufacturing and service activities abroad. It was so, and it largely still is, but changes taking place in this regard are noticeable, it should be stressed, mainly because of China.[25] In this context, the position and a change in the position of the region of Central and Eastern Europe, especially during the last turbulent years of crisis, seems interesting.

Before the crisis, in 2007, the countries of the region discussed had a small share in outflows both on the global, European, and the EU scale. Globally, the share was less than 3% of the total outflows, while in Europe and the EU it was at a level close to 5%. And more than three-quarters of FDI outflows came from the Russian Federation.[26] Other countries in the region had a small, and most frequently negligible share in these outflows. Among the countries that can be assumed to have initiated (on a small scale) their presence in FDI outflows were Poland and Hungary, and perhaps Estonia and the Czech Republic should also be mentioned here. Except for Russia and the EU countries mentioned here, other countries in the region, both belonging and not belonging to the EU were involved in FDI outflows to no more than a symbolic extent (See: Table 5).

The crisis, and to be more exact the years 2008 - 2011 are a period in when, with the exception of the year 2009, FDI outflows from the region of Central and Eastern Europe grew. Thus it can be concluded that the research hypothesis in this case has found generally positive confirmation. In 2011 outflows from the European and the EU countries were in fact much lower than in 2007. A general growth trend in outflows in the region of Central and Eastern Europe, confirming the hypothesis, has occurred, however, mainly due to the Russian Federation and, to a small extent, also Hungary and Poland. Other countries of the region generally saw a noticeable drop in FDI outflows and, with the exception of the Czech Republic, it can be said that they almost ceased to exist as exporters of investments (See: Table 5).

[24] Cf. M. Kluzek, op.cit., p. 174.

[25] See and compare: World Investment Report 2012, op. cit.

[26] Own calculations on the basis of World Investment Report 2012, op.cit.

Table 3. Structure of FDI inflows by region in the years 2007-2011

Region/economy	2007	2008	2009	2010	2011
World	100.00	100.00	100.00	100.00	100.00
Developed economies	66.33	56.94	50.61	26.79	49.06
Europe[x]	45.52	31'78	33.30	15.44	27.90
European Union	43.23	30.28	29.77	13.78	27.60
Central and East European Countries	7.00	8.36	5.97	3.31	6.51

[x] Excluding the Commonwealth of Independent States

Source: Own calculations on the basis of: World Investment Report 2012, UNCTAD, Annex, table 1.1., pp. 169 -172.

Table 4. Structure of FDI inflows to Central and East Europe by economyin the years 2007-2011

Region/economy	2007	2008	2009	2010	2011
Central and East European Countries, including:	100.00	100.00	100.00	100.00	100.00
A) EU countries:	52.02	40.73	39.36	32.74	35.20
Bulgaria	8.96	6.58	4.73	2.10	1.90
Czech Republic	7.56	4.31	4.10	8.04	5.44
Estonia	1.97	1.15	2.57	2.02	0.03
Hungary	2.86	4.22	2.87	2.98	4.73
Latvia	1.68	0.84	0.13	0.50	1.57
Lithuania	1.46	1.31	0.09	0.99	1.22
Poland	17.05	9.90	18.09	11.59	15.25
Romania	7.18	9.28	6.78	3.85	2.69
Slovakia	2.59	3.13	0.00	0.69	2.16
B) Non-EU countries:	47.98	59.27	60.64	67.26	64.80
Belarus	1.30	1.46	2.63	1.84	4.01
Moldova	0.39	0.47	0.20	0.26	0.26
Russian Federation	39.85	50.06	51.07	56.67	53.25
Ukraine	7.16	7.28	6.74	9.23	7.26

Source: Own calculations on the basis of: World Investment Report 2012, UNCTAD, Annex, table 1.1., pp. 169 – 172.

Table 5. FDI outflows by region and economy in the years 2007-2011 (Millions of dollars)

Region/economy	2007	2008	2009	2010	2011
World	2,198,025	1,969,336	1,1975,108	1,451,365	1,694,396
Developed economies	1,829,578	1,580,753	857,792	989,576	1,237,508,
Europe[x]	1,279,540	1,024,605	458,103	568,414	651,387
European Union	1,204,747	957,798	393,618,	482,905	561,805,
Central and East European Countries, including:	61,141	70,882	53,993	62,043	78,607,
A) UE countries:	14,520	14,231	10,057	8,730	11,054
Bulgaria	282	765	-95,	229	190
Czech Republic	1,620	4,323	949	1,167	1,152
Estonia	1,747	1,112	1,549	133	-1,458
Hungary	3,621	2,234	1,984	1,307	4,530
Latvia	369	243	-62	21	93
Lithuania	597	336	217	79	165
Poland	5,405	4,414	4,699	5,487	5,860
Romania	279	274	-88	-20	32
Slovakia	600	530	904	327	490
B) Non-UE countries:	46,621	56,651	43,936	53,313	67,553
Belarus	15	31	102	50	57
Moldova	17	16	7	4	21
Russian Federation	45,916	55,594	43,665	52,523	67,283
Ukraine	673	1,010	162	736	192

[x] Excluding the Commonwealth of Independent States

Source: World Investment Report 2012, UNCTAD, Annex, table 1.1., pp. 169 – 172 and own elaboration.

CONCLUSIONS

The impact of the crisis at the turn of the first decade of the twenty-first century was marked by, among other things, FDI flows in the countries of Central and Eastern Europe, which applies to both inflows and outflows. In general, however, these effects were marked less in the countries of the said region than in the whole of Europe or the EU. This means that the crisis in the region harmed FDI flows relatively less than in the other countries of the European continent. Of course, the crisis and its consequences for the flow of foreign investment did not affect all the countries in the region to the same extent.

FDI inflows during the period 2007 - 2011 were diverse in terms of the impact of the crisis especially in the cross-section of countries in Central Europe which belong to the EU, as opposed to those Eastern European countries which are not EU members. The principle of transitivity of preferences of foreign investors for direct investment location was noticeable here: Investors preferred the Central European countries in relation to other EU countries, and also a tendency to favour Eastern European countries in relation to Central Europe was noticed. As a result, there were structural changes in the European and regional FDI inflows: a special feature is the growing importance of these inflows especially in Eastern Europe countries, specifically in Russia.

Russia is also a country owing to which, in great measure, FDI outflows in the discussed region were affected by the global crisis to a small extent. Other countries in the region did not in fact play a significant role in the outflows of investment on the European scale due to their small exports, often symbolic, as was previously stated.

REFERENCES

1. Błaszczak – Zawiła M., Międzynaroddowe przepływy inwestycji zagranicznych, w: Chojna J. (red.) Inwestycje zagraniczne w Polsce 2009 – 2011, Instytut Badań Rynku, Konsumpcji i Koniunktur, Warszawa 2011.
2. Klusek M., Znaczenie konkurencji podatkowej dla rozmieszczenia bezpośrednich inwestycji zagranicznych w Unii Europejskiej, Wydawnictwo UE w Poznaniu, Poznań 2012.
3. World Investment Report 2012, UNCTAD, Annex.

GLOBAL FINANCIAL FLOWS: SHIFTING THE BALANCE

Olena Yermoshkina

On the basis of comparative analysis of the basic groups of national economic indicators, provided by The World Bank, the changes in balance in financial resources distribution are defined. The gradual shifting of center of generation of financial resources from North America to Middle, Eastern and South Asia is discovered. The factors that influence the processes given are shown, and the main future trends of global economy are substantiated.

INTRODUCTION

Globalization and integration are the main trends of the near past, present and future. These processes, which have involved all countries of the World have become the reason of different positive and negative changes in the different fields of human life. The economic and financial crises of 2008-2009 have changed a lot in manner of leading the business and economies: the priorities in development and regulation have been shifted from the one hand to careful risk-free

conduction and tough regulation, and, from the other hand, to revival of national peculiarities of business, to strengthening the government support of domestic producers. So, the new trend of development of the global economy is the globalization with national priorities.

Modern conditions require the virtuous balancing between national and global interests on each level of economy and in each sector of it. Polarization of positions of different countries [3, 7, 16] has caused the deepening of the differences in guiding lines for development inside them. This leads to development of two practically polar styles of business:

- the first one – business oriented on globalization and integration;
- the second one – business oriented on domestic development.

It should be underlined that the third model (the combination of the basic two ones) should be considered as well – balancing between globalization and domestic interests. Each model reflects in the financial flows and indicators of the national economy, which shows the real (not only politically declared) preferences of development.

Problems connected with the issue of distribution of the financial resources in the world, accumulation of the economic and financial power were considered in the different researches by scientists from different countries. The boom of such researches has fallen on the period after the Asian crisis of 1998. On the wave of the interest to the initial causes and main consequences of this crisis the scientists have been divided into several groups. The first group of the scientists has tried to consider the monetary [5, 6, 15] and economic [4, 9] background of the crises, to explain the miscalculations of national governments and international financial organizations in providing the economic and financial policy in the country and in the regions [10-12, 14]. The second group has preferred looking for the cause of the crisis in the institutional imperfection of the global economy [1, 8, 13], explaining the crisis as the consequence of imbalance of the interests of different economic groups (households, government, markets, enterprises, financial institutions, etc.). But it should be mentioned that the voice of the second group of scientists was not enough strong to change the point of view of politicians and businessmen. In many respects, the passive position of the politicians and traditional economists including top managers of the financial institutions in terms of considering the necessity of institutional improvement of the global economy became the incitement for the global economy to come to financial and economic crisis in 2008-2009.

Never the less, the financial crisis of 2008-2009 has led to shifting the balance in the financial and economic power distribution. Thus, the goal of the presented article is to define the basic changes in global distribution of financial resources, to find out the main causes of these changes, and to substantiate the overall trends which will have an influence on the development of the global economy in future.

1. DISTRIBUTION OF THE ECONOMIC POWER: CHANGING THE LEADER?

The analysis was conducted for two types of classification of the countries:

- by basic regions of the World; Europe & Central Asia, European Union (including Euro area), North America, Middle East & North Africa, East Asia & Pacific, South Asia, Latin America & Caribbean;
- by level of income: High income, Upper middle income, Middle income, Lower middle income, Low income.

Such classification was accepted in order to compare the changes in the regional distribution with changes in distribution between income levels. In order to define the directions of changes in the global distribution of the economic and financial power the selected indexes were compound by the decomposition tree (fig. 1). The comparison of the indexes has been made between two periods: contribution of country in creation of global financial resources in 2010 was compared with contribution in 2000. This approach has been chosen in order to compare the pre-crisis trends in the global economic and financial power distribution with essential changes, which are the consequences of the economic crisis of 2008-2009.

As it shown, the economic and financial power of the country can be reflected as a result of creation, distribution and accumulation of the financial resources by the different participants of the global market (fig. 1).

The overall conceptual trends in redistribution of the economic and financial power between groups of countries can be shown by analysis of changes in contribution of the given group into total GDP and GNI (Table 1).

Table 1

Change of role of countries' groups in accumulation of global financial resources

Groups of Countries (by regions of the World)	Changes in contribution of the country into accumulated global financial flow		Changes in productivity of the country in accumulation of national financial flow		Changes in contribution in creation of nominal global reserves (minus gold)
	in nominal GNI	in nominal GDP	real GNI per capita	real GDP per capita	
Europe & Central Asia	2,1%	2,0%	14,5%	14,2%	-7,3%
European Union	-0,5%	-0,6%	11,2%	10,6%	-11,0%
Euro area	-0,1%	-0,2%	7,1%	6,5%	-9,1%
North America	**-7,7%**	**-7,5%**	**6,1%**	**6,5%**	**-2,6%**
Middle East & North Africa	1,3%	1,1%	24,1%	24,3%	4,4%
East Asia & Pacific	0,9%	0,8%	33,4%	33,0%	**5,8%**
South Asia	1,3%	1,3%	**69,1%**	**67,3%**	1,1%
Latin America & Caribbean	1,6%	1,6%	22,3%	22,0%	-1,3%

Source: calculated on the basis of the World Bank data [17]

Analysis of contribution of each group of the countries into the global GDP and GNI has shown that the balance, which was supported for many years, has shifted seriously. Contribution of the world leaders of the economy (North America and European Union) has fallen about on 8% and the accent has moved to Central and South Asia (3.4%), Middle East & North Africa (1.3%), Latin America & Caribbean (1.6%) both in GDP and GNI.

Against this background the productivity of the labor has raised in South Asia on 69.1% in GDP and 67.3% in GNI an only on 6.1% and 6.5% correspondently in North America, 11.2% in EU. Of course, it should be underlined that for the present the North America still obtains one of the leading role in creation of the global GDP (25.3%) and GNI (25.6%). But if in 2000 the leading role totally belonged to the North America (32.9% of GDP and 33.3% of GNI), in 2010 the economic and financial power have been shifted to Europe & Central Asia (former USSR and Yugoslavia countries plus Albania, Bulgaria, Romania and Turkey - 31.7% of GDP and GNI) and proportionally distributed between East Asia & Pacific (25.8%), EU (25.6%).

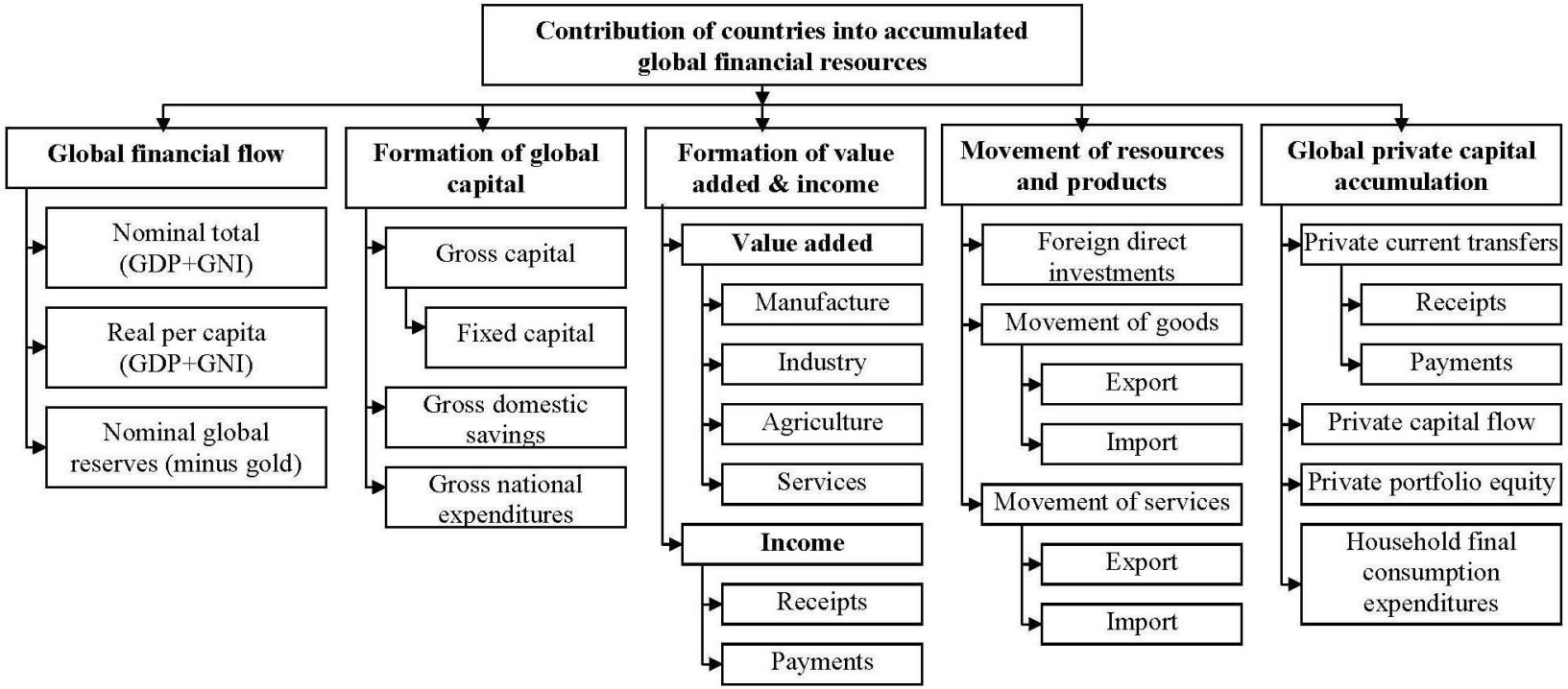


Fig. 1. Decomposition tree for analysis of redistribution of the global economic and financial power.

Basically increase in the share of Europe & Central Asia was obtained due to the increase in prices for oil and gas – the basic export goods of Russia, which has provided more than 70% of GDP of the given region. So, the source of the growth is quite unstable and practically totally depended on market situation, but it shows the high level of dependence of the global economy from traditional energy resources.

More over, the annual growth of GDP and GNI has testifies that the settled distribution in the economic activity has been changed as well. If in 2000 the average annual growth in GDP was about 4.0% without strong leaders, in 2010 situation has been significantly changed. The undisputed leader of GDP growth is the South Asia (8.6%), the nearest "competitor" – East Asia & Pacific (6.71%), and the North America – 3.03%, EU – 2.2%. The same situation is with GNI - South Asia (8.36%), North America – 4.08%, EU – 2.28%.

Comparing the level of GDP and GNI per capita, attention was paid to real level of productivity: indexes were compared in constant level of USD in 2000. This analysis has testified that the world leaders in productivity are the same: North America (36 167 USD per capita) and EU (19 398 USD per capita). But if in these regions during 10 years GDP per capita has been increased on 6.9 and 10.6 % correspondently, the highest levels of growth are in South Asia (67.3% in GDP and 69.1% in GNI). Of course the level of GDP and GNI per capita in South Asia are almost in 48 times lower than in NA and in 26 times than in EU. But taking into account changes in contribution of the countries into the global GDP such trends gives the opportunity to suppose the gradual change of the global productivity leaders in the future. Such changes can be explained by global trends of moving the capital by international corporations toward cheap labor, capital and resources [16, 18].

Quite interesting trends have been identified during the analysis of GDP and GNI structure by the levels of income (table 2).

Table 2

Change of role of countries groups classified by level of income in creation of accumulated global financial resources

Groups of Countries (by level of income)	Changes in contribution of the country into accumulated global financial flow		Changes in productivity of the country in accumulation of national financial flow		Changes in contribution in creation of nominal global reserves (minus gold)
	in nominal GNI	in nominal GDP	real GNI per capita	real GDP per capita	
High income	**-17,6%**	**-17,5%**	**8,6%**	**8,8%**	**-25,1%**
Upper middle income	6,9%	7,0%	**67,9%**	**66,5%**	**13,0%**
Middle income	**8,8%**	**8,7%**	60,9%	59,3%	12,5%
Lower middle income	1,8%	1,8%	53,4%	51,2%	-0,5%
Low income	0,1%	0,1%	43,5%	36,4%	0,0%

Source: calculated on the basis of data [17]

For the last ten years the contribution of countries with high level of income has fallen on over 17% but they are still the leaders, which provide over 50% of global GDP and GNI. But the competitors are near. The gradual transference of the accents in creation of GDP is leading to shifting the accents on the countries with upper middle and middle income, which provided less than 17% of GDP in 2000 and now obtain over 40 % of it providing the over 60% level of annual growth. On this basis changes in contribution in creation of nominal global reserves, which allow to provide the required level of exchange rate and to execute the liabilities of the country, also confirms the trend of East Asia being the leader: in 2010 more than 58% of total reserves belonged to countries of East Asia & Pacific (comparing to 52.9% in 2000) including 57.9% of them to China

(34% of global reserves in 2010 comparing to 8.7% in 2000), and share of North America has been decreased from 4.5% in 2000 to less than 2% in 2010.

Considering the influence of different groups of countries on creation of the accumulated global capital it should be mentioned that the global trends defined previously are deepened (table 3).

Table 3

Change of role of countries groups in creation of accumulated financial capital

Groups of Countries ((by regions of the World)	Changes in contribution of the group of countries into formation of capital and savings			
	gross capital formation	gross fixed capital formation	gross domestic savings	gross national expenditure
Europe & Central Asia	-0,9%	-0,3%	-1,0%	2,0%
European Union	-3,7%	-3,1%	-3,8%	-0,6%
Euro area	-2,9%	-2,4%	-3,0%	-0,2%
North America	**-12,8%**	**-12,6%**	**-12,4%**	**-7,5%**
Middle East & North Africa	2,0%	1,9%	1,9%	1,1%
East Asia & Pacific	**6,8%**	**6,5%**	**6,2%**	**0,8%**
South Asia	2,7%	2,3%	2,0%	1,5%
Latin America & Caribbean	1,8%	1,9%	1,5%	1,5%

Source: calculated on the basis of data [17]

Accumulated capital is one of the indicators that illuminates the capacity of the country to create new goods and provides services. Changes in gross capital formation (formerly gross domestic investment) reflect movement of capital from one region to another and allow testifying the ability of the country to provide the real production and to create new jobs.

So, as it is shown in table 3 for the last ten years North America has lost the leading positions in creating the total and fixed capital by decreasing the share of gross capital formation from 30.2% to 17.4% and has skipped ahead East Asia & Pacific (36.9%). More over, if in 2000 East Asia & Pacific has directed on creation of capital 26.89% of GDP comparing to 20.55% in North America and 21.37% in EU, in 2010 North America directed 15.32% of GDP on creation of the capital, EU – 18.53%, but East Asia & Pacific – 25.47, in South Asia – 32.46%.

Distribution of gross domestic savings, which are the reflection of the gross national income minus total consumption and plus net transfers [17], has been changed as well (table 3) but not significantly. The top three leaders have remained the same: East Asia & Pacific, Europe & Central Asia and EU. But if in EU and Europe & Central Asia region there is a trend for reducing the share of savings, in East Asia & Pacific the opposite trend (the share in global savings has been increased on 6.2%).

Movement of the capital from countries with high income to countries with middle income (table 4) proves again the aspiration for optimization of financial and resources flows in the World.

Moving the enterprises (fixed capital and inventories) from highly developed to less developed regions is the necessity for the owners of the capital to survive in the competition. But deepening of such trend can lead to increasing dependence of the countries with high income on lower ones in the future. More over, such redistribution of capacities gradually leads to shifting the balance in income distribution and changing the participants of different classification groups. That's mean that in the future the countries with upper middle and middle income will reach the level of high income countries and even may replace them in the given group.

Table 4

Change of role of countries groups in creation of accumulated financial capital

Groups of Countries (by level of income)	Changes in contribution of the group of countries into formation of capital and savings			
	gross fixed capital formation	gross capital formation	gross domestic savings	gross national expenditure
High income	**-28,9%**	**-29,4%**	**-28,7%**	**-17,7%**
Upper middle income	11,9%	11,8%	12,1%	6,8%
Middle income	**14,4%**	**14,6%**	**14,4%**	**8,8%**
Lower middle income	2,5%	2,8%	2,3%	2,0%
Low income	0,1%	0,1%	0,0%	0,1%

Source: calculated on the basis of data [17]

2. CONTRIBUTION OF THE COUNTRIES INTO THE GLOBAL PRODUCTION AND INVESTMENTS: ORIENTATING TOWARD ASIA.

The deeper analysis of economic activity of the enterprises reflected in the value added indicator and income has allowed defining the essential background for changes, considered earlier. In order to determine the basic changes in global distribution of production of goods and services and received income, value added was specified by manufacturing, industry, agriculture and services (table 5, 6). In accordance to obtained results the trend of loosing the leading positions by North America still exists. Moreover, in all named sectors the reduction of contribution is present and varies from 3.8% in agriculture up to 9.2% in industry. It should be mentioned that countries of East Asia & Pacific and Europe & Central Asia in 2010 have provided over 64% of total value added in global manufacturing, over 60% in industry, 55% in agriculture 56% in services.

Table 5

Change of role of countries groups in creation of value added and income by manufacturing sectors of economy

Groups of Countries (by regions of the World)	Changes in Value added				Changes in Income	
	Manufacturing	Industry	Agriculture	Services	Receipts	Payments
Europe & Central Asia	-1,2%	-0,5%	-5,3%	**3,8%**	1,3%	2,5%
European Union	-3,1%	-3,4%	-6,2%	1,3%	0,2%	-0,7%
Euro area	-2,0%	-2,3%	-5,3%	1,1%	**6,3%**	**4,4%**
North America	**-8,4%**	**-9,2%**	**-3,8%**	**-7,0%**	**-4,0%**	**-7,5%**
Middle East & North Africa	0,7%	2,2%	-0,5%	0,8%	-0,3%	-0,2%
East Asia & Pacific	**5,9%**	**2,9%**	**5,4%**	-0,3%	n/a	n/a
South Asia	1,3%	1,3%	1,6%	1,3%	0,1%	0,2%
Latin America & Caribbean	1,5%	2,4%	1,1%	1,1%	-1,0%	-0,7%

Source: calculated on the basis of data [17]

Comparison of receipts and payments of income shows a little bit different situation – quite significant increase in receipts of income in Euro area comparing to payments. Unfortunately it's hard to assess the changes in income distribution because of lake of data for East Asia & Pacific. Stable trend of significant declining in contribution of income made by countries with high level of income (table 6) and increase in contribution of income made by countries with middle and upper middle income is quite deceptive. Over 82% of total income receipts and 65.5% of total income

payments are conducted by countries with high level of income. Thus, the trend of dividing the process of manufacturing with process of managing the financial flows is evident.

Table 6

Change of role of countries groups in creation of value added by economic sectors

Groups of Countries (by level of income)	Changes in Value added				Changes in Income	
	Manufacturing	Industry	Agriculture	Services	Receipts	Payments
High income	**-21,6%**	**-23,3%**	**-11,8%**	**-15,1%**	**-13,9%**	**-24,5%**
Upper middle income	9,1%	9,7%	4,5%	5,9%	6,3%	10,2%
Middle income	**10,8%**	**11,6%**	**6,1%**	**7,5%**	**6,9%**	**12,3%**
Lower middle income	1,6%	1,9%	1,6%	1,6%	0,7%	2,1%
Low income	0,1%	0,1%	-0,4%	0,1%	0,0%	-0,2%

Source: calculated on the basis of data [17]

Besides, calculation of share of all Asian countries (plus former USSR countries) in global production has shown that they provide over 71% of total value added in manufacturing, 70% in industry, 75% in agriculture and 62% in services. This fact confirms the high level of dependence of the EU countries and North America from economic, political and nature conditions in countries with lower level of income (table 6). Besides, such dependence can't be compensated by controlling the financial flows because the background for creation of the biggest part of the financial flows is production of goods and services. Moreover, such misbalance may lead to increasing in degree of social and political tension in the countries with lower level of income that, in its turn, may cause the forced redistribution of the financial flows (nationalization and etc.)

Of course situation is changing. If in 2000 the level of income receipt of the countries with high level of income was 96%, in 2010 it has been declined to 82.1%, moving over 16% of receipts to the countries with upper middle and middle income (in payments 90% in 2000, 65.5% in 2010). But digging deeper, it can be shown that such changes were caused not only by intensive development of the countries with upper middle and middle income but also due to redistribution of the financial flows toward the off-shore zones and optimization of taxation by the transnational corporations.

Another critical issue in accumulation and distribution of the financial flows is creation of flows that accompanies the international movement of goods, services and financial capital. These flows are reflected in FDI and trade balance of the country.

Foreign direct investment, which can be considered as the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital, reflects the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor [17]. Data, presented in table 7, 8, show that in 2010 the structure of the FDI has been changed significantly.

In 2000 over 76% of total FDI was made by EU and North America, and in 2010 this share has been declined to lower than 36 % (Table 7, 8). It should be mentioned that the biggest declining was obtained due to sharp decrease of investment activity in EU (-33.5%), contribution of which into global FDI has bee fallen from 47.3% in 2000 to 13.8% in 2010.

On this background stable growth of the investment activity of East Asia & Pacific countries can be characterized as a global compensation of lack of investment activity in EU. Moreover, together all Asian region with former USSR countries obtain over 65% of global FDI. This fact from the one hand confirms the thesis about raising the dependence of EU and North America from the economic trends in the Asian region; from the other hand, it testifies the ability of business to

adapt to the environmental and market changes and under conditions of globalization to move the capital to the most favorable business environment.

Table 7

Changes of roles of groups of countries in creation of international movement of goods, services and financial flows (comparing 2000 to 2010 years)

Groups of Countries (by regions of the World)	Changes in FDI (net inflows)	Changes in Goods, services and income		Changes in Service	
		Exports	Imports	Exports	Imports
Europe & Central Asia	-27,6%	-0,9%	-0,5%	0,7%	0,4%
European Union	**-33,5%**	-2,7%	-2,7%	0,5%	-0,2%
Euro area	-22,5%	-1,3%	-1,4%	0,4%	0,2%
North America	-7,3%	**-5,2%**	**-6,5%**	**0,0%**	**-5,2%**
Middle East & North Africa	4,7%	0,9%	0,6%	0,2%	0,2%
East Asia & Pacific	**22,4%**	**4,8%**	**5,1%**	**0,5%**	**3,4%**
South Asia	2,0%	1,0%	1,4%	0,2%	2,2%
Latin America & Caribbean	4,2%	-0,1%	-0,1%	0,1%	-0,7%

Source: calculated on the basis of data [17]

Table 8

Change of role of countries groups in creation of international movement of goods, services and financial flows

Groups of Countries (by level of income)	Changes in FDI (net inflows)	Changes in Goods, services and income		Changes in Service	
		Exports	Imports	Exports	Imports
High income	**-40,9%**	**-12,8%**	**-13,5%**	**-7,9%**	**-10,8%**
Upper middle income	15,8%	5,3%	5,1%	1,5%	3,6%
Middle income	**20,2%**	**6,4%**	**6,7%**	**3,8%**	**5,3%**
Lower middle income	4,4%	1,1%	1,6%	2,4%	1,7%
Low income	0,6%	0,1%	0,2%	0,1%	0,1%

Source: calculated on the basis of data [17]

Interestingly, regarding the listed earlier significant changes in accumulation and distribution of the financial flows, the structure of export and import of goods and services has not been changed significantly by regions: the variation of percent of changes is not more than 6%. But if in EU and North America region change in share of global export is lower than changes in share of global export, which testifies the reducing in negative trade balance, in Asian region situation illustrates the stable trend to reaching the negative trade balance. Never the less, as it has been mentioned earlier, changes are not quite significant. The positive trade balance of the Asian region is in about 9 times greater than in EU and unlike North America, which has the biggest negative trade balance (over 523 billion of USD) in the World, Asia has a positive one. Thus, such changes can be considered as weak signals about risk of negative trade balance for the Asian region. From the other hand, high dependence of North America from import of goods and services makes a real threat of suffering from unstable economic, political and social situation in other countries, and even make the North America strongly dependent from the natural disasters in other countries, which provide it with goods and services.

3. PRIVATE FINANCIAL FLOWS: MOVING FROM AMERICA TO EUROPE

Analysis of the global accumulation of the financial flows and distribution of the economic and financial power will be incomplete without analysis of accumulation and distribution of the

private capital. In this case the attention should be paid to such indicators as private transfers, private capital flows, portfolio equity and household final consumption. These indicators allow defining the social basis for the future development of the economy.

Exactly self initiative of private persons, who are the owners of business capital, labor, land, etc., is the requirement for the further development of any economic system. For example, exactly lack of willingness of business owners to invest inside the country is the essential cause of crisis in Ukraine [2]. The same situation is in other countries of former USSR.

For the present, the scientists, who are the followers of the institutional theory, confirm the thesis about the essential role of self initiative and willingness of the owner of the capital to do something in order to develop the economy [1, 8, 9]. So, it can be affirmed that creation, accumulation and distribution of the private capital is the economic and social basis for intensification the economic growth.

Analysis of formation, accumulation and distribution of the private capital, presented in table 9 and 10, shows that on the private level the picture of the economic and financial power distribution differs significantly from the global trends on the industrial and trade market.

Let's name the principle trends on this market. First of all, personal transfers, which consist of all current transfers in cash or in kind made or received by resident households to or from nonresident households [17], has been redistributed from North America to Euro area inside EU to Europe & Central Asia (unfortunately data about transfers in East Asia & Pacific regions are not available).

Table 9

Change of role of countries groups in creation of global private capital flows

Groups of Countries (by regions of the World)	Changes in Private current transfers		Changes in Private capital flows, total	Changes in Portfolio equity, net inflows	Changes in Household final consumption expenditure
	payments	received			
Europe & Central Asia	4,3%	-8,5%	**61,9%**	-9,8%	**2,9%**
European Union	-0,7%	-8,2%	46,7%	-7,4%	0,3%
Euro area	**5,2%**	-8,4%	49,5%	**23,7%**	0,7%
North America	**-4,1%**	**-1,6%**	**-69,6%**	**-8,0%**	**-6,3%**
Middle East & North Africa	0,7%	0,3%	4,9%	-0,2%	1,0%
East Asia & Pacific	n/a	2,1%	n/a	7,7%	-0,8%
South Asia	0,5%	**6,4%**	3,7%	3,5%	1,2%
Latin America & Caribbean	0,8%	-1,9%	-1,8%	5,4%	1,6%

Source: calculated on the basis of data [17]

More over, private persons from countries with high income level have reduced all kinds of private transfers. Instead of this trend, transfers to countries with middle and lower middle income have been raised significantly. This trend can be explained by that fact, that private transfers can be considered as payments for using the labor from developing countries by developed countries. So this flow is opposite to movement of labor and reflects the trend of searching for the cheap labor resources by developed countries. Because of financial and economic crisis of 2008-2009 in order to provide the stable social situation in the region governments of developed countries have started to stimulate the domestic producers to prefer domestic labor resources. Thus, the jobs earlier obtained by emigrants have been gained by domestic workers and the level of international private transfers has fallen down.

Table 10

Change of role of countries groups in creation of global private capital flows

Groups of Countries (by level of income)	Changes in Private current transfers,		Changes in Private capital flows, total	Changes in Portfolio equity, net inflows	Changes in Household final consumption expenditure
	payments	received			
High income	**-18,0%**	**-11,1%**	**-49,6%**	**-24,3%**	**-13,5%**
Upper middle income	6,9%	-0,7%	16,9%	8,0%	4,9%
Middle income	**9,0%**	**4,9%**	**24,8%**	**12,1%**	**6,7%**
Lower middle income	2,1%	5,7%	7,9%	4,2%	1,8%
Low income	0,1%	1,3%	0,0%	0,0%	0,1%

Source: calculated on the basis of data [17]

Trends in private capital flows that consist of net FDI, portfolio investment and equity securities (flows from shares, stocks, depository receipts, and direct purchases of shares in local stock markets by foreign investors), are practically equal to FDI trends considered earlier. But they are deepened by negative trends caused by crisis on the stock and debt market. Moreover, new requirements for providing the transparency of the trade contracts, insuring of the operations on the stock market have led to falling down in volumes and quantities of contracts on the stock markets. Thus, decreasing activity of the financial market, reducing number of speculative transactions – all these trends have led to declining the international movement of private capital. From the other hand, in 2000 the biggest operators on the private capital market were countries with high level of income, which obtained more than 95% of portfolio equity, 76% of private capital flows and over 95% of payments in form of private current transfers. In 2010 private capital flows have been distributed between tree players: 36.2 % - countries with middle income, 27.3 % - countries with upper middle income and 26.8% - countries with high level of income, who have suffered the most from the financial crisis 2008-2009. So, the trend of shifting the balance in financial and economic power is supported on the private level.

Another trend that should be underlined is propensity to save instead of propensity to consume, which is confirmed by the international experts [16]. There are two practically opposite trends in the global economy: the first one – "to earn more & to spend more", which has place in quickly developed regions (Europe & Central Asia, East Asia & Pacific); the second one – "to spend less to save more", which has place in EU and North America.

These trends from the one hand provide some kind of financial balance between different parts of the world but from the other hand they are clear signal for international corporations to consider Europe & Central Asia and East Asia & Pacific as the most perspective market for implementation of innovations, widening the luxury market and introducing high-tech novelties in order to obtain the additional extra-profit.

CONCLUSIONS

In the result of the structural analysis of the global trends of accumulation of the financial resources and distribution of economic and financial power the basic trends were defined:

- high level of dependence of the global economy from traditional energy resources, which is reflected in the redistribution of the financial power and the financial flows between exporters and importers of the energy resources;
- gradual transference of the accents in creation of GDP on the countries with upper middle and middle income and gradual change of the global productivity leaders in the future which can lead to increasing dependence of the countries with high income on lower ones in the future;
- the countries with upper middle and middle income will may reach the level of high income countries and even may replace them in the given group;

- high level of dependence of the EU countries and North America from economic, political and nature conditions in countries with lower level of income is the strong signal to EU and NA countries to diversify their sources of financial, labor and natural resources, to create regional system of insurance of such dependence;

- the ability of business to adapt to the environmental and market changes and under conditions of globalization to move the capital to the most favorable business environment should be one of the priorities in the government and international monitoring and regulation because of possibility of depletion of the financial resources needed for intensive development of the domestic economy;

- the necessity to take into account the clear signal for international corporations to consider Europe & Central Asia and East Asia & Pacific as the most perspective market for implementation of innovations, widening the luxury market and introducing high-tech novelties.

The following researches should be dedicated to defining the mechanism of monitoring and control of changes in distribution of financial and economic power and providing such distribution with an adequate economic, social, resource and financial basis.

REFERENCES

1. Дементьев В.В. Экономика как система власти / В. В. Дементьев; М-во образования и науки Украины. Донецкий нац. техн. ун-т. – Донецк: Каштан, 2003. – 404 с.
2. Єрмошкіна О.В. Фінансовий потенціал регіонів в умовах вільного руху капіталу / О.В. Єрмошкіна // Вісник Дніпропетровської Державної фінансової академії: Економічні науки, 2012. - № 2 (28). – С. 35-42.
3. Сорокин Д.А. Генезис и развитие концентрации капитала как базиса экономической инфраструктуры / Д.А. Сорокин //Вестник Челябинского государственного университета. Экономика. - Вып. 26 № 6 (187), - 2010. – С. 28–42.
4. Bencivenga V. R., Smith B. D., Starr R. M. Equity Markets, Transaction Costs, and Capital Accumulation: An Illustration / Valerie R Bencivenga, Bruce D. Smith, Ross M. Starr // The World Bank. Policy research working paper, 1456 - Policy Research Department Finance and Private Sector Development Division, May 1995 – 60 p.
5. Bossone B. Financial Developmernt Ttade and Industrial Capital Accumulation / Biagio Bossone // The World Bank. Policy research working paper, 2201 - Financial Sector Practice Department. Financial Economics Unit, October 1999 – 32 p.
6. Ghani E., Suri V. Productivity Growth, Capital Accumulation, and the Banking Sector: Some Lessons from Malaysia / Ejaz Ghani, Vivek Suri // The World Bank, Policy research working paper, 2252 - East Asia and Pacific Region: Poverty Reduction and Economic Management Sector Unit, December 1999 – 26 p.
7. Hamilton K., Ruta G., Tajibaeva L. Capital Accumulation and Resource Depletion: A Hartwick Rule Counterfactual / Kirk Hamilton, Giovanni Ruta, Liaila Tajibaeva // World Bank Policy Research Working Paper 3480, January 2005 - 16 p.
8. Jensen M. C. Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers / M. C. Jensen // American Economic Review. – 1986. – Vol. 76, № 2. – p. 323-329.
9. King R. G., Levine R. Capital Fundamentalism, Economic Development, and Economic Growth / Robert G. King Ross Levine // The World Bank. Policy research working paper, 1285 - Policy Research Department, Finance and Private Sector Development Division, April 1994 – 53 p.
10. Kee H. L., Hoon H. T. Trade, capital accumulation and structural unemployment: an empirical study of the Singapore economy / Hiau Looi Kee, Hian Teck Hoon. // Development Economics Research Group, The World Bank, School of Economics and Social Sciences, Singapore Management University – WPS 3272, - 36 p.
11. Min H. G. Dynamic Capital Mobility, Capital Market Risk, and the Exchange Rate Misalignment: Evidence from Seven Asian Countries / Hong G. Min // The World Bank. Policy research working paper, 2025 - Development Research Group Finance, December 1998 – 55 p.

12. Min H. G., McDonald J. A. Does a Thin Foreign Exchange Market Lead to Destabilizing Capital-Market Speculation in the Asian Crisis Countries? / Honig G. Min, Judith A. McDonald // The World Bank. Policy research working paper, 2056 - Development Research Group Finance, February 1999 – 49 p.
13. Palermo G. Economic Power and the Firm in New Institutional Economics: Two Conflicting Problems / G. Palermo // Journal of Economic Issues. – 2000. – Vol. 34? № 3. – p. 573-602.
14. Serrano C. Social Security Reform, Income Distribution, Fiscal Policy, and Capital Accumulation / Carlos Serrano // The World Bank. Policy research working paper, 2055 - Department Division, February 1999, - 47 p.
15. Serven L. Capital Goods Imports, the Real Exchange Rate, and the Current Account / Luis Serven // The World Bank. Policy research working paper, 1298 - Policy Research Department Macroeconomics and Growth Division, May 1994 – 33 p.
16. Official web-site of Euromonitor International / [Електронне джерело]: Режим доступу URL: // http://www.euromonitor.com
17. The official web-site of The World Bank / [Електронне джерело]: Режим доступу URL:http://www.worldbank.org.
18. Yermoshkina O. Managing the financial flows: globalization aspect / O. Yermoshkina // Common Europe: Ukraine and Poland under Conditions of Globalization and European Integration. – High Banking School (Wroclaw-Poznan, Poland), 2012. – 399 p. – pp. 11-22.

MODERN TENDENCIES OF FINANCIAL MARKET GLOBALIZATION: PROBLEMS AND PROSPECTS OF UKRAINE

Nataliya Shtefan

The entity of financial markets globalization is researched, present trends and factors which influence global financial markets development are determined and analyzed. The article deals with the functioning of financial services market of Ukraine, solutions and measures to provide the integration of Ukrainian market of financial services into the global financial market.

INTRODUCTION

In a broad sense globalization of financial markets implies the process of eliminating borders between national markets, easy and efficient flow of capital between countries.

Global financial market has been developing over many decades. This process became agressive in the Unitred States when officials implemented restrictions on the deposit interest rates for U.S. banks, so called ‘Regulation Q’ issued in 1933 during the Great Depression. Investors are always interested in getting more yield so they were forced to transfer their funds to non-U.S. banks that had no such restrictions at that moment of time. The result was the emergence of Eurodollar market and global money market.

Gradually the demand for long-term loans began to emerge. That marked and determined the beginning of the global capital market. In the 1980s with the forming of global financial centers such as New York, London, Zurich, Frankfurt-am-Main, Tokyo the global financial network originated, which was based on the global financial market.

1. CHARACTERISTICS OF GLOBAL STOCK MARKET AND THE STOCK MARKET OF UKRAINE

Primarily the scale of the stock market of a country is characterized by the following indicators: shares market capitalization, its share in GDP, shares trade volume, the number of issuers that are regularly quoted (listed). Most resumptive indicator of the equity market scale is an index that shows the value of the stock market of the country at the appropriate date - capitalization. [1]

According to the World Federation of Exchanges, for the period 2000-2012 the global stock market capitalization has almost doubled, from 30.956 to 54.570 trillion US dollars (Table 1).

Number of companies listed on stock exchanges worldwide from 2000-2012 raised on 50% - from 31.8 to 46.8 thousand issuers (Figure 1) [1].

All three time zones have grown during the decade. Even though the Americas time zone is still the largest region (although much less than before), the Asia-Pacific time zone share has grown significantly, while the EAME (Europe – Africa – Middle East) area has almost remained stable.

Table 1.

Regional and total WFE domestic equity market capitalization

Time interval	Americas	Asia-Pacific	Europe Africa Middle East	Total WFE USD bn
2000	16450	4918	9588	30,956
2001	14852	3968	7775	26.595
2002	11931	4437	6465	22,833
2003	15672	6264	8691	30,627
2004	18180	7535	11133	36,848
2005	19458	9310	12120	40,888
2006	22653	11838	16159	50,650
2007	24320	17920	18615	60,855
2008	13896	9221	9467	32.584
2009	18.923	14.594	14.225	47.753
2010	22173	17435	15.247	54.884
2011	19.789	14.670	12.942	47.411
2012	23.193	16.929	14.447	54.570

During the analyzed period, the most part of global capitalization (approximately 50%) provided by only four countries - the U.S., Japan, China and Britain. The absolute leader in terms of capitalization is the U.S. (Fig. 2), although during last decade its share decreased by 10%. Almost in two times increased the share of Asia-Pasific time zone (from 16% in 2000 to 31% in 2012).

Leading role in the global financial turnover belongs to exchanges, almost 200 exchanges operate all around the world. In the UK there are 22 stock exchanges (London, Glasgow, Birmingham, and Liverpool). London Stock Exchange is one of the world's largest financial centers. More than half of its securities turnover is of foreign origin. In France, there are 8 exchanges (Paris, Lyon, Marseille, Lille, Nancy, Bordeaux, Nantes, Toulouse), where the largest in Paris. In Germany - 7 exchanges (Frankfurt am Main, Dusseldorf, Hamburg, Munich, Stuttgart, Bremen, Hannover), the largest - in Frankfurt am Main.

The main international organization of glbal mechanism of stock exchanges is the International Federation of Exchanges (WFE), which includes 59 member exchanges from New York, London, Deutsche, Tokyo and many others. Development of WFE members reflects present trends in the real world.

Quantity of companies registered on stock exchanges worldwide

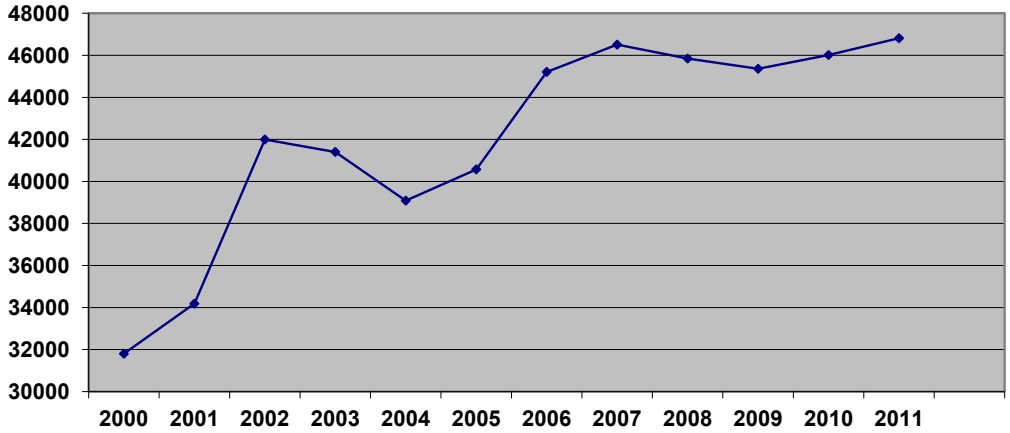


Fig.1 – Dynamics of the number of companies listed on stock exchanges worldwide for years 2000-2012.

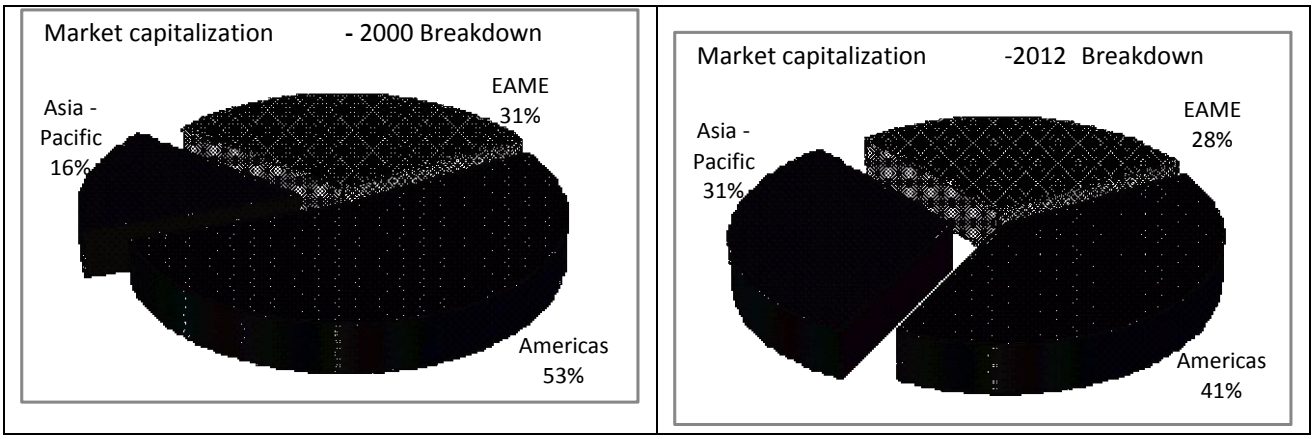


Fig.2 – Restructuring of global capitalization for the period from 2000 to 2012

Excluding the positive factors for the development of stock markets in Central Europe there is a trend to impairment of their utility (especially to small stock exchanges of Europe). So nearly in five to seven years in Europe will be only three or four exchanges. As the evidence of this trend could be the association of stock exchanges in Paris, Brussels and Amsterdam, the Portuguese stock exchange (also with joint collaboration with the Warsaw SE) in a single Euronext exchange.

The same trend is observed in Russia and Ukraine.

Moscow exchange is the largest group of exchanges in Russia and Eastern Europe in terms of the volume of trade and the quantity of clients. It was established on 19 December 2011 as a result of merging exchanges MICEX and RTS and it is included in the top-20 leading world sites by the volume of shares trade and total capitalization of shares listed taking the 9-th place in the top-10 largest exchanges in the derivatives trade. [2]

The decision on establishing Ukrainian exchange (the most dynamic site in recent years in Ukraine) was taken by RTS in conjunction with the participants of Ukrainian market in 2008. Structure of shareholders UX [3]: RTS - 22%, Ukrainian exchange holding (also owned by RTS) - 21%, others - 57%.

2. CURRENT STATE OF THE UKRAINIAN STOCK MARKET, ITS ACHIEVEMENTS AND CHALLENGES

In present conditions there is no chance to provide the growth of competetiveness financing the development projects only from the companies' profits, without raising funds from big business. For this reason the struggle for investment resources never stops in conditions of modern global competition. Many Ukrainian companies face today with the need to find in investment sources on the capital market.

In the development of international relations, Ukraine is trying to find its niche in the international capital market.

Ukrainian government recently managed to accommodate eurobonds on 2 billion dollars and this fact, in particular, testifies that is not so bad with investment into Ukrainian securities, especially government-papers.

In Ukraine there are 11 stock exchanges. Despite the fact, that the nominal share of the Ukrainian exchange (UX) takes only 21% of volume of organized stock market of Ukraine in 2010, UX leads in corporate shares trade. Its competitors mainly concentrated on other instruments. Exchange "Perspectiva" nominally takes 28% of market and specializes in investment certificates and PFTS (46%) - on bonds. At 2011 the Ukrainian exchange beat its competitors, reaching the 36% market share. The share of PFTS shortened to 32% and "Perspectiva" took 31% of total volume of market. [3]

Comparative evaluation of UX and companies analogues shows that Ukraine has a huge market growth potential with a small volume of trade at the moment (Table 2, 3).

Table2

Comparative evaluation of UX and companies analogues. [4]

Stock Exchange	Country	Mcap, mln.USD	Sales, mln.USD	Net profit, mln.USD	Annual turnover, mln.USD
RTS	Russia	1040	102	40	110
NASDAQ	U.S.	4553	3174	395	151
Hong Kong Exchange	Hong Kong	23669	853	647	399
BM&F BOVESPA SA	Brazil	14855	1159	701	50
UX	Ukraine	19.9	1.9	0.2	3.5

Sources: Bloomberg, company's data, calculations of UTC Capital [4]

Table3

UX and company analogues: comparative indicators.[4]

(P/T - capitalization / turnover, P/S - capitalization / sales, P/E - capitalization / net profit)

Stock Exchange	Country	P/T	P/S	P/E
PTC	Russia	0.009	0.2	25.8
NASDAG	U.S.	0.030	1.4	115
Hong Kong Exchange	Hong Kong	0.059	27.7	36.6
BM&F BOVESPA SA	Brazil	0.295	12.8	21.2
Company analogues (median)		0.045	11.5	23.5
UX	Ukraine	0.006	10.6	123.2
Potential of growth		676%	8%	-81%
Target price as to multiplier, USD		6170	862	152
Weight in total estimatee		33%	33%	33%
Total estimate	2394 USD			
Potential of growth	201%			

Sources: Bloomberg, company's data, calculations of UTC Capital [4]

Thus, the fair value cost of shares listed on UX three times exceeds its current value.This potential has a chance to be implemented in the process of possible merging of UX with PFTS after merging their major shareholders MICEX and RTS.

Despite the unfavorable external state of market, the domestic stock market in 2011 showed positive dynamic. Thus, the volume of securities trade market increased 1.5 times in comparison with 2010 and reached 2171.1 billion UAH, exceeding the GDP amount on 854.4 billion UAH [5].

The main task that securities market must perform - provide appropriate favourable conditions for attracting investment. And this indicator has also increased. So, the volume of investments into the economy of Ukraine through the instruments of the stock market amounted to 173.3 bln UAH. Which is almost two times more than it was in 2007. The total volume of securities emission also showed a significant increase. By the end of the year 2011 its amount was 1014.78 billion UAH, which is almost 200 billion UAH more than above mentioned index in 2010.

In 2011, comparing to the same period of 2010 the volume of exchange contracts (agreements) with the securities increased almost doubled and totaled 235.44 billion UAH. The exact amount of increase is 104.55 billion UAH with the actual volume of 2010 - 131.29 billion UAH.

Such high activity of the stock market led to the growth of an organized market of securities and it took the share of 13.16% of all securities transactions within the securities market of Ukraine (Table 4) [5]. This shows the increasing role of stock markets in the financial system as a whole.

Table 4

Attracting investment into Ukraine through the stock market instruments in 2007 and 2011., billion UAH.

	2007	2008	2009	2010	2011
The amount of investments	93.21	129.15	137.1	92.9	173.38
Volume of exchange contracts with securities	35.15	37.76	36.01	131.29	235.44
Share of organized stock market, %	6.49	5.5	4.5	10.74	13.16

Talking about financial instruments, in 2011 the largest share in total volume of registered issues of equity securities accounted for securities of insitutes of collective investment (ICI – collective investment funds, defined as separate financial structures under ukrainian legislation) (47.17%) and shares (32.46%) worth 58.16 billion, which is more than year 2010 indicator on 17.57 billion UAH. (Fig.3).

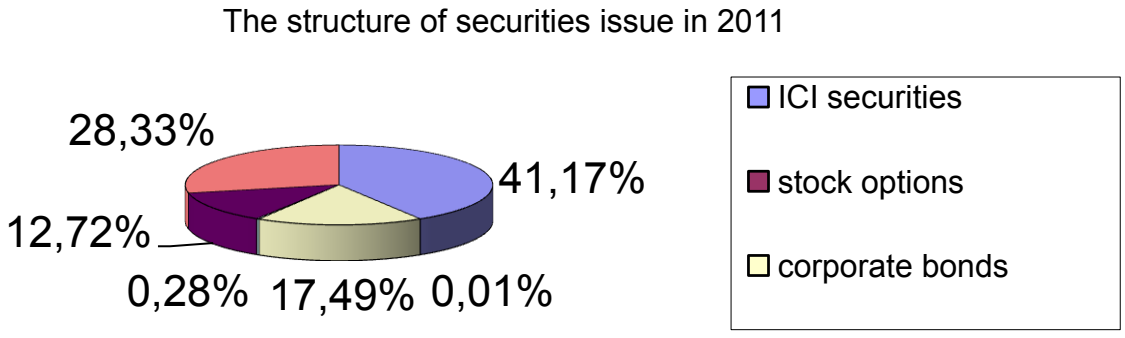


Fig.3 – The structure of securities issue in 2011

This testifies the intensifying of investment activity in corporate sector and reducing of speculative component in the stock market [5].

The data mentioned above show that the stock market is steadily recovering from the global financial crisis. Despite the positive trends in Ukraine's stock market, today it is one of the weakest

elements of local financial system, due not only to the consequences of the global financial crisis, but also the passivity of its development, multidirectional tasks to be solved. For the revival of the stock market such conditions must be created so that local companies would be able to attract new volumes of real capital.

3. AREAS FOR FUTHER DEVELOPMENT OF UKRAINE

Western countries to a certain extent are interested in the fact that Ukraine would perform much faster market transformation of the economy. However, global commodity producers in most cases will not be pleased with the appearance of another competitor in person of Ukraine.

Ukraine has two directions of further development, aimed to the European integration or in the opposite integration with the Customs Union of Russia, Belarussia and Kazakhstan.

The economic potential of the EU by its basic quantitative and qualitative parameters significantly dominates the corresponding figures of the Customs Union. However, available economic, political, technological, institutional and other "filters" in the European Union hold its economic ties with Ukraine at the moment, which are actually at the pre-integration stage.

Ukraine's interest in the Customs Union is primarily in getting energetic resources from Russia and Kazakhstan. Also within this area a huge consumer market for distribution of domestic products is available, including finished articles, which have not enough competitiveness in developed countries.

To determine the role and place of Ukraine in modern foreign relations, it is necessary to clarify its total resource potential and structure of foreign economic relations. The latter are formed with the export and import of industrial and agricultural goods, capital, labor and services (production, transportation, insurance, marketing, etc.).

Basing on the data from tables 5 and, could be concluded that Ukraine has not changed the structure of exports and imports over the last decade. As before, the major part of export goes to Russia.

It should be emphasized that the current scale and structure of foreign economic activity of Ukraine does not correspond either any of its interests or potential opportunities. The international trade takes an important place in foreign relations. About 85% of all Ukraine’s supplies abroad accounted for raw materials. However, the level of industrial development of Ukraine greatly exceeds the global average, and with sufficient grounds it could supply to the global market many articles with a complete technological cycle of production.

Ukraine is characterized by its high intellectual potential. Literacy of its population is almost 100%.

Natural and climatic conditions of Ukraine allow to grow up to 50 million tons of grains and legumes, and to produce up to 6 - 7 million tons of sugar, which may not only fully cover the internal needs of the country in foodstuffs, but also to perform their partial export abroad (e.g. grains – 7 - 8 million tons, sugar - to 2 - 3 million tons annually).

Electricity powers enable Ukraine to produce up to 300 billion kWh of electricity per year. Approximately 1/10 of produced electricity could be exported on assumption of stable energy ressources supply. For development and improvement of foreign economic relations the considerable importance has the provision of Ukraine by minerals. Ukraine has significant resources of coal, iron and manganese ores and native sulfur, mercury, titanium, uranium, salt, gypsum, various building materials.

Natural resource potential (NRP) Ukraine is equivalent to 272.5 billion USD. Its largest part belongs to the eastern regions of the country. In structural terms, the lead in the NRP of Ukraine takes land resources component (44.38%), followed by mineral (28.26%), water (13.08%), recreational (9.64%), vegetable (4.17%) and fauna (0.47%) components.

Nowadays, there is some slowdown in the world economy, which accordingly affects the local market of Ukraine. Under the influence of both internal and external economic processes Ukraine experience a number of problems such as:

• the price of natural gas increase;
• increasing world market competition in those kinds of products which form the basis of ukrainian exports, primarily metals;
• investment climate still remains unfavorable despite political declarations at the highest level;
• further opening of the domestic market is accompanied by increasing competition between domestic and foreign companies, particularly in the areas of agriculture and food production, consumer commodities;
• rapid increase in social spendings in various forms, unbalanced structure of government debt and dynamics of its modification create a significant risk to the fiscal system;
• consistently high pension fund deficit that threatens the fiscal stability in whole;
• lack of reforms in agriculture;
• privatization process almost supended, while the problem of property rights observation has escalated.

4. PROBLEMS AND PROSPECTS OF UKRAINE'S STOCK MARKET

Major problems of Ukraine's stock market are the following:
- Low capitalization of the stock market (Table 3);
- Minor share of organized securities market (Table .4);
- Underdeveloped corporate bond market (government securities remain dominant on the stock market, which to a certain extent prevents the issue of new securities by corporate sector);
- Inconsistency of exchange trade to global trends;
- Absence of a single central depository;
- Lack of domestic derivatives market;
- Lack of transparency of ukrainian stock market (significant information concerning the stock market not always has a sufficient disclosure).

Imperfect competitiveness of the stock market is the cosequence of the fact that there is not enough of supportive government policy on taxation of the stock market. The problem of tax incentives for stock market development requires exemption from profit tax and value added tax for nonprofit institutesof the stock market, abolition of fees for registration of information about new issues of securities. It could be reasonable to abandon the taxation of exchange differences arising on transferring investments which come in foreign currency into the national currency on the stock market.

Stock market of Ukraine is on the verge of major transformation, as indicated in the Development Programme of Ukraine's stock market in 2011-2015. [6] The purpose of this program is to improve the protection of investors and the formation of a competitive national stock market based on the gradual reduction of the speculative component of market with imperative increase in investment-oriented segment in terms of financial globalization.

First of all this document provides mechanisms of solving the problems of low market liquidity, improving its infrastructure and simplification of cexchange regulation. The program contains more than 120 measures to overcome problems: reducing of requirements for listed securities and allowing the listing of stocks that have already passed the listing procedure on other exchange, the abolition of trade with delayed payment, since all transactions are carried out only in the mode of instant delivery versus payment and many others initiatives [6].

Table 5

The services export-import dynamics of Ukraine (thousand USD)

	Export						Import					
	2006	2007	2008	2009	2010	2011	2006	2007	2008	2009	2010	2011
Total	7505520,7	9038866,2	11741292,9	9598330,3	11759405,7	13792217,6	3719398,2	4980621,9	6467956,7	5173531,6	5447694,3	6235194,6
Countries of the CIS	3409912,3	3666306,0	4245530,4	3826642,9	5609587,0	6243021,2	690301,1	799853,2	1058000,6	787196,0	939834,3	1173318,2
Russian Federation	3137030,2	3410567,7	3851594,0	3468142,9	5157055,7	5634624,9	596582,8	696697,8	894214,6	658804,4	793484,0	955556,4
Others	4095608,4	5372560,2	7495762,5	5771687,4	6149818,7	7549196,4	3029097,1	4180768,7	5409956,1	4386335,6	4507860,0	5061876,4
incl. Europe	2360832,9	3154141,1	4176449,0	2936122,5	3298465,3	4103748,8	1703895,2	2402106,7	3488947,7	2640159,7	2420878,8	2813861,5

Table 6

Export-import dynamics structure of Ukraine (thousand USD)

	Export						Import					
	2006	2007	2008	2009	2010	2011	2006	2007	2008	2009	2010	2011
Total	100	100	100	100	100	100	100	100	100	100	100	100
Countries of the CIS	45.43	40.56	36.16	39.87	47.7	45.26	18.56	16.06	16.36	15.22	17.25	18.82
Russian Federation	41.8	37.73	32.80	36.13	43.85	40.85	16.04	13.99	13.83	12.73	14.57	15.33
Others	54.57	59.44	63.84	60.13	52.3	54.74	81.44	83.94	83.64	84.78	82.75	81.18
incl. Europe	31.45	34.895	35.57	30.59	28.05	29.75	45.8	48.23	53.94	51.03	44.44	45.13

CONCLUSION

Future development of the stock market is impossible without reforming most parts of the market and removing the obstacles that hinder this development. Must be rethought and significantly increased the role of the stock market in providing of investment resources and directing them to upgrade production potential, creating conditions for the emergence of powerful institutional investors.

Implementation of the Development Programme of Ukraine's stock market in 2011-2015 and the above-mentioned actions to solve the problems of the local stock market of Ukraine give an opportunity to achieve the positive results and structural changes.

REFERENCES

1.htth://www.world-exchanges.org/statistic
2. htth://www.rts.ru
3. htth://www.ux.ua
4.htth://ufc-capital.com/data/filestorage/reviews/company report
5. htth://www.ssmsc.gov.ua/ Report of National securities and stock market commission.
6. Project of Development Programme of Ukraine's stock market in 2011-2015 // htth:// www.ssmsc.gov.ua.

GOLF AS A MEANS TO ACTIVATE THE POLISH-CZECH CROSS-BORDER COLLABORATION

Prof. Franciszek Gospodarczyk, Danuta Calińska-Rogala

One of the main goals the inhabitants of the near-border Kłodzko Land pursue is to develop environment friendly forms of tourism as well as work out programmes involving both neighbouring countries to build and expand the infrastructure and a shared tourism organisation.

Tourism is perceived as a means for economic activation of trans-border regions and their surroundings. Therefore, the following forms of tourism are commonly recommended to channel the tourism development in such areas:

- sightseeing based on exploration of natural (often subject to protection) and anthropogenic qualities, assumed for individual and group tourists,
- qualified such as skiing, biking, horse riding, golf, by adapting and appropriately developing suitable lands, tourist trails, resting spots, camping sites or sanitary facilities for the needs of the said tourism forms,
- recreational assumed for various types of visitors, which comprises holidays on water reservoirs, agritourism, ethnographic tourism, curative tourism etc., based on areas appropriately developed with respect to the environmental protection principles.

The Sudetes offer very favourable conditions as regards the above forms of tourism. Bearing in mind the convenient access with means of transport and attractive landscapes, the mountains are always a place of choice for inhabitants of the Polish-Czech urban agglomerations willing to spend their long vacations there as well as going on short and weekend trips. One of the examples of different forms of recreational organisation for the borderland inhabitants includes jointly managed ventures co-financed from the EU funds under cross-border collaboration schemes as well as golf tournaments held at the courses located in the municipalities of Szczytna in the Administrative District of Kłodzko and Nebeská Rybná in the Commune of Rokytnice.

Golf is not merely a sport discipline, but above all it is a game one may find pleasurable. Regardless of whether one is a beginner or a highly-advanced player, or just a fan charmed by the game – they will all certainly like golf.

Golf is considered to be something highly original in Poland and it is rarely associated with sports as such. It is also perceived as a completely obscure, extravagant entertainment for the rich. And golf is indeed not merely a sport, but it is a way of life to a certain extent. What must be emphasised is that golf is highly addictive, which may lead people of weaker disposition to rather euphoric states of mind, but it is also healthy, beautiful and unique in its nature.

History of golf and origins of the golf course architecture

Golf is considered to be one of the oldest games in the history, although the exact beginnings of golf remain unknown.

It is believed that medieval shepherds, willing to add some variety to their tedious job, started rolling stones on pastures by means of clubs. Games resembling golf in principle were popular in such European countries as the Roman Empire, England, the Netherlands and France. The direct predecessor of golf was probably the Danish game of *kolf*, documented at the end of the 13th century and depicted in numerous Danish landscape paintings created until the 16th century (Sanders, 2003).

The written mention of golf turned out in Scotland in the 15th century, however, not until the 16th century when James VI became the king of England and took the game with him to London

was golf believed to be born in the contemporary form. The first Scottish golf courses resembled the present ones. The game was played on public areas, between the waterside and the cropland, developed by nature, featuring natural obstacles such as trees, bushes, ditches and water courses. The 18th century saw a considerable development of golf. In 1744, the king of England founded a club called the Gentleman Golfers of Leith (subsequently known as the Honourable Company of Edinburgh Golfers). It is this organisation that wrote down 13 principles of golf that became the very grounds of the contemporary rules (Platts, 200). At the same time, a Scottish emigrant David Dees started spreading the word about golf in the United States. Compared to other countries, golf was developing very slowly in USA. Not until the 19th century did it become a fairly popular sport on the American continent. Golf courses mainly started emerging in English colonies (India, Australia). The first one to be established in Europe came to being as late as in 1856 in Pau, France (Valerien, 1990).

Golf was gradually becoming more and more popular and exciting. Nevertheless, it is still mistakenly perceived as a game of the elites in many countries, whereas in many American schools golf is taught next to football, volleyball, basketball or skiing at obligatory physical education classes.

The Polish history of golf is strongly linked with different cultural influences exerted on individual parts of our country. Not until the beginning of the 20th century did golf emerge in Poland. Before 1939, there were several golf course available in the Polish territory, namely in Warsaw, Powsin, Gdańsk, Łańcuc, Katowice and Szczawno. The year 1938 was when the Polish Country Club was established and purchased grounds for a golf course located in Powsin near Warsaw from the Braniecki family. In western Poland, golf courses were established by the German. As early as in 1912, there was a golf course near Głogów (formerly known as Oberglogau) mentioned in writing by a golfer from Berlin, Couhubert Butchard. 1924 saw an official opening of a 24-hole course in Szczawno Zdrój (former Bad Salzbrunn). This project was originated by Hans Heinrich Prince von Pless together with his English wife, Daisy Cornwallis-West. Championship tournaments were organised there in 1926 and 1927, when the course hosted well-known golfers from all around Europe. The Second World War ended the history of the Bad Salzbrunn golf course. It was closed down in 1945 as the former authorities considered golf to be an inappropriate, exclusive sport discipline, and the course was not reopened after the war ended. Wrocław too had its 9-hole course established in 1927.

In the interwar period, new golf courses were founded, but it still did not make golf too popular in Poland. After the war, golf was no longer an object of interest for the Polish sport policy makers. Former courses fell into decay and their recreational function was never restored.

And not until the 1980s did some golf aficionados begin to introduce the sport in Poland anew. A huge breakthrough in the golf publicity in Poland was brought by the year 1992 when the first post-war golf courses were built in Rajszew near Warsaw and Kołczewo near Międzyzdroje. Both these course are currently known to be among the best in Poland.

Contemporary position of golf

Golf is currently played all around the world. According to KPMG (and their survey conducted in 2005), a company rendering consulting and auditing services, there are ca. 50 million people playing golf in the whole world on 32 thousand courses. In the United States only, there are ca. 17 thousand golf courses and 27 million golfers, which accounts for a half of all players in the world (Graves R., Cornish S., 1998).

Europe, where golf was born, can be proud of ca. 6 thousand courses and 4 million players. Also Poland keeps developing in terms of golf promotion. In an article published by Planet Golf in 2000, Peter Master ranked Poland among countries having from 1 to 10 active golf courses (Golf World International, January 2000), whereas one may currently read on the website of the Polish Golf Union (Polski Związek Golfa) that there are 46 registered clubs. By the end of 2009, the Polish Golf Union had registered 2,739 players. The number of clubs and of the players is constantly growing. Owing to a considerable promotion particularly targeting the youth (cheap beginner's training, discount membership fees for those aged up to 26, gold academies) organised by the Polish

Golf Union in collaboration with individual golf clubs, there is hope for golf to become popular among Poles as well.

Components of a golf course

There are may different types of golf courses. The main factor conditioning the nature of a golf course is the landscape where it is situated. Despite many various forms of golf courses, there are several obligatory components each field must feature. Golf courses are more and more often designed in a manner utilising their natural barriers, obstacles, slopes etc., however, new items are also frequently introduced in order to add some variety to the game. A golf course should consist of 18 holes (although there are also 9, 27 and 36-hole courses). Is usually occupies an area of 50-60 ha (10 ha for 9 holes). The area of a golf club territory differs depending on the land profile, arrangement of holes and individual grounds.

Golf course components used while playing

The entire golf course area comprises the main course as well as training grounds.

A driving range is the area used for practicing the longest drives. It is a fairway towards which golf balls are hit. Distances from the stroke point are marked on boards enabling players to learn about their driving skills.

A chipping green is where one practices short strokes introducing the ball onto the green and hitting it out of bunkers.

A putting green is an area used to practice the final game stage, i.e. hitting the ball into the hole. Only one golf club is used on the putting green, i.e. the putter.

A golf course is composed of individual holes. In an 18-hole course, the distance covered by a player varies from 6 to 7 km. Individual holes should be arranged in a manner ensuring that the first and the last hole are adjacent to the clubhouse.

A clubhouse is where the golf course offices are to be found. It is located in the most representative section of the course, often set above the surface of the ground so that the entire course can be viewed. The first hole starts and the last hole ends next to the clubhouse.

Characteristics of partnering golf courses

Both golf courses discussed are located in natural mountainous landscapes highly attractive to tourists, both in terms of their natural properties and sightseeing aspects.

The Chopin Golf Course is situated in the Municipality of Szczytna, in the Administrative District of Kłodzko, within the borders of the Kłodzko Valley, surrounded by the Table Mountains (in a small distance to numerous rock formations of the Table Mountains National Park), health resorts of the Kłodzko region (Duszniki Zdrój, Polanica Zdrój, Kudowa Zdrój, Lądek Zdrój, Długopole Zdrój) and well-known skiing centres (Zieleniec, Czarna Góra).

Such a beneficial geographic and geopolitical location of the Kłodzko Land, and particularly the large variety of tourist attractions, i.e. recreational, sightseeing (natural and cultural) and specialised ones, combined with a well-developed transport network of the region and convenient accommodation options make it one of the most attractive tourist regions of our country. It is popular in all seasons of the year, willingly visited by both domestic and foreign tourists.

The very town of Szczytna is itself beautifully set against the landscape of the Duszniki Depression, between the Table Mountains and the Bystrzyckie Mountains, on the banks of the Bystrzyca Dusznicka. The municipality of Szczytna and its entire commune occupies the area of 13,237 ha and it is inhabited by 7,267 people. It has mainly been developing owing to its location on the trade route from the Czech Republic to Poland, currently running along the E 67 international road (Wrocław-Prague). The 18th century saw a dynamic development of its glass manufacturing plants and weaving workshops. Contemporary Szczytna is best known of glass products. Still the most popular tourist attraction of the area is the castle founded on mount Szczytnik (formerly known as Waldstein), erected in the years 1832-38 and blended into the rocks overlooking Szczytna.

The Symbióza Nebeská Rybná club operates in the Czech Republic. Nebeská Rybná is located in a distance of 40 km from Szczytna, at the foot of the Orlickě Mountains. Nebeská Rybná

is a village inhabited by 300 people, administered by the Commune of Rokytnice (ca. 3,500 inhabitants) in the Kralovohradecky Province.

Like the Kłodzko Valley, this region also offers perfect conditions for hiking and biking tourism as well as downhill and cross country skiing based on well-known skiing centres such as Deštné v Orlických horách, Říčky v Orlických horách, Zdobnice or Čenkovice. There are also numerous cultural and historical attractions to be found in the area, such as palaces (Opočno, Rychnov nad Kněžnou, Častolovice and Doudleby nad Orlicí), castle ruins (Potštejn and Litice, Žampach and Lanšperk), an important peregrination centre of Homol and a unique Baroque church in Neratov, small churches in Liberek or Veliná, with numerous local military fortifications also considered to be tourist attractions.

The Symbioza Nebeská Rybná (Fig. 1) golf club was opened on 29th January 2011 next to an animal breeding farm (ecological agriculture). The entire establishment occupies the area of 813 ha of meadows and pastures located within a protected landscape area (Celestial Rybna, Ricky, Zdobnice, Souvlastni). The farm employees are involved in social works in favour of the golf club in their free time. It is where the local people meet and have fun. The golf academy consists of a driving range, a 6-hole course and a golf equipment rental centre. Golfers and tourists can make use of the accommodation offered by the Orlicko pension next to the club.

Fig. 1. Symbioza Nebeská Rybná golf club

source: www.gcnebeskarybna.websnadno.cz

The Chopin Golf Course in Szczytna (Fig. 2) was established in 2009 based on the natural profile of its territory. It is a 9-hole course located on the south-western slope with a beautiful view overlooking the Szczytnik castle and the nearby landscape of fields and forests. Owing to the fact that it is situated in a mountainous area, at the altitude of 565 m above sea level, it is known to be among the most difficult golf courses in Poland and the only such mountain-type establishment there is. The course features a driving range, a putting green, a chipping green as well as an equipment rental shop and a restaurant. It is open to all visitors with no membership cards required. One of its most characteristic features is a considerable difference of altitudes, from 35 to 45 m between the highest and the lowest point of the course. A part of greens is situated on mountain slopes, and some are additionally arranged on the crown. What seems to favour players is the lack of water hazards and shallow bunkers, but the play becomes really difficult on high-graded roughs (www.pzgolf.pl).

Fig. 2. Chopin Golf Course in Szczytna

source: www.Golfspa.pl

As a business establishment, the club strives to become involved in the life of the town and the entire region (for instance, they purchase trophies from the crystal glass works in Szczytna and diplomas are printed on hand-made paper from Duszniki Zdrój).

One of the most beneficial features of the course is its location close to the Polish-Czech border. It is the only golf course in this region, hence it is often visited by players from both Poland and the Czech Republic. Besides individual visitors willing to master their golf skills, the course hosts children from a nearby primary school it collaborates with on a permanent basis, and the students are offered an opportunity to learn golf.

It is therefore an educational golf course and its innovativeness consists in the cross-border collaboration with the Czech. The collaboration with the GC Symbioza Nebeská Rybná golf academy is mainly based on the concept of co-organisation of tournaments and golf camps for children (Fig. 3, 4). In the years 2012-2013, both businesses applied to the EU for funds to be spent on promotion of this sport discipline through organisation of children's camps.

Hence golf may be perceived as a means to bind both nations through the passion to active recreation in open air. It enables integration of different social and professional groups.

Fig. 4. Trans-border exchange in 2012

source: www.Golfspa.pl

Fig. 5. Texas Scramble weekend tournaments

source: www.Golfspa.pl

REFERENCES

1. Brygier W., Dudziak T., 2010, *Ziemia Kłodzka Przewodnik*, Rewasz, Pruszków.
2. Golf World International, vol. 41, no. 1, January 2000, Peterborough, 14.
3. Graves, Muir R., Cornisch G., 1998, *Golf Course Design*, John Wiley Sons Inc., New York.
4. Druzban J., 2006, "Historia golfa w Polsce", Golf 24, internet edition.
5. Lipoński W., 1974, *Sport, literatura, sztuka*. *Sport i turystyka*, Warsaw.
6. Platts M., 1999, *The Illustrated History of Golf*, Hong Kong.
7. Sanders V., 2003, *Golf. Podręcznik dla początkujacych i zaawansowanych*, MUZA SA, Warsaw.
8. Staffa M. (ed.), 1992, *Słownik Geografii Turystycznej Sudetów. Góry Bystrzyckie. Góry Orlickie*, vol. 14, PTTK "Kraj" publishing house, Warsaw – Krakow.
9. Wiliams Lea Group (based on the publication), *Reguły gry w golfa*, 2008, Mediatour Sp. z o.o.
10. Walczak W., 1961, *Ziemia Kłodzka*, Sport i Turysyka publishing house, Warsaw.
11. Zawadzki P., 2008, "Jak na Śląsku odradzał się golf", Gazeta Katowice, Agora S.A.
12. Valerien H., 1990, *Golf fastination eine Weltsport*, Sudwest, Munich.

Internet sources:
www.gcnebeskarybna.websnadno.cz/
www.golfspa.pl
www.stat.gov.pl

FINANCIALS OF LOCAL ADMINISTRATIVE UNITS IN POLAND IN THE YEARS 2006-2011

Kazimiera Wilk
Elwira Sucholińska

Financials of local administrative units, i.e. municipalities (communes), administrative districts (poviats), towns with district rights and provinces (voivodeships) constitute an integral and important part of the Polish public financing system.

The article provides a discussion on the studies of changes taking place in the financial sphere of local administrative units in the years 2006-2011. An analysis of the studies in question was preceded with a review of general legal grounds of the self-governmental financial economy as well as the nature and structure of a budget of local administrative units.

The analysis comprised basic statistical data pertaining to the revenues and expenditures included in self-governmental budgets. For the sake of a limited volume of the article, the study discussion has only covered selected aspects of the problems in question.

INTRODUCTION

Financials of local administrative units, i.e. municipalities (*communes*), administrative districts (*poviats*) and provinces (*voivodeships*) constitute an integral part of the public financing system. Consequently, the financial standing of local administrative units influences the national financial economy to a considerable extent. It depends on multiple factors including competence and activeness of local authorities, general economic conditions, social and financial conditions as well as legal grounds etc. The changes taking place in the financials of local administrative units are particularly visible against the background of Poland's integration with the European Union and the economic crisis affecting the European states since 2008. The main financial document biding for local administrative units is the budget which constitutes an annual plan of their revenues and expenditures.

The purpose of this article is to investigate the changes introduced in budgets of Polish local administrative units in the years 2006-2011. For this purpose, the authors have analysed statistical data comprising the revenues, expenditures and budget outcome attained in the period examined.

In order to accomplish the goal of the study, the authors have referred to various publications in the field of interest as well as legal acts and annual reports on the budget accomplishment level of local administrative units developed by the Ministry of Finance.

LEGAL GROUNDS FOR SELF-GOVERNMENTAL FINANCIAL POLICY

The legal provisions regulating the self-governmental financing system in Poland may be divided into international and domestic ones.

The international regulations include the Worldwide Declaration of Local Self-Government adopted on 22nd-26th September 1985 in Rio de Janeiro by the International Union of Local Authorities. The declaration provides a definition of a local self-government and stipulates that the principle of self-government as well as competences of self-governmental authorities are to be specified in the constitution or a different legally binding act [6, p. 10]. Another important international document is the European Charter of Local Self-Government (a convention of the Council of Europe) signed in Strasbourg on 15th October 1985 and ratified by Poland on 14th July 1994 [1]. Article 9 of the said convention stipulates the general rules of local self-government financing.

Since 1st May 2004, i.e. Poland's accession to the European Union, European directives on structural funds and the Cohesion Fund have also become binding sources of legal regulations for the financial policy of local administrative units.

The most important legal act among the domestic regulations is the Constitution of the Republic of Poland of 2nd April 1997 [4]. Chapter VII of the Constitution is entirely devoted to local self-government. In accordance with the Constitution of the Republic of Poland, local self-governments are vested legal identity, the right of ownership and other property rights, self-reliance, including the financial one, share in the public revenue divided according to the tasks they have been assigned, the right to perform their tasks by means of elective and executive bodies, the right to establish their internal organisational structure and enact local legal regulations, protection against excessive interference of the state, the right to associate with other local administrative units and participate in international associations of regional and local communities.

The general principles of local financing policy have been laid down in the respective statutory acts, i.e. the act of 8th March 1990 on the municipal self-government [12], the act of 5th June 1998 on the district (*poviat*) self-government [13] and the act of 5th June 1998 on the provincial self-government [14].

The financial policy grounds for local administrative units in the period subject to the study were to be found in two acts, namely the act of 13th November 2003 on the revenue of local administrative units [15] and the act on public finance initially enacted on 30th June 2005 and then on 27th August 2009 [16].

One of the most significant changes introduced by the latter was the implementation of a multiannual financial forecast as one of the financial policy tools provided to local administrative units. The purpose of this amendment was to establish appropriate conditions for economically sound and stable financing policy to be performed by municipalities, administrative districts and provinces. In accordance with the regulations on the multiannual financial forecast, it should cover a budget year and at least three successive ones. This period may be extended for various reasons including the time horizon envisaged for the expenditure limits or the period for which financial liabilities have been or are planned to be incurred [5, pp. 219-221]. Other significant changes introduced by the act in question included liquidation of special purpose funds or auxiliary self-governmental enterprises.

The act on the revenue of local administrative units defines in detail the individual revenue sources, the principles of establishing and collecting the said revenue as well as the principles of establishing and transferring general subsidies and designated grants from the state budget. A major source of local administrative units' own revenue is the share in proceeds from the personal income tax (PIT) as well as the corporate income tax (CIT). In accordance with law enacted in 2004, the share of municipalities, administrative districts and provinces in proceeds from the said taxes has increased [8, pp. 41-42]. As regards PIT, the aforementioned share is now ca. 48-49%, and as for CIT – it comes to ca. 23-24%.

NATURE AND STRUCTURE OF A LOCAL ADMINISTRATIVE UNIT'S BUDGET

In accordance with the applicable legal regulations (statutory acts), local and regional authorities manage their independent financial policies the grounds for which are laid down in a budget. Budgets of individual local administrative units are their independent plans adopted by representative institutions for a period of one calendar year. They comprise various arrangements corresponding to the priorities assumed by municipal, district and provincial self-governmental authorities [7, pp. 53-55].

It may be generally concluded that a local administrative unit's budget is [8, pp. 86-87]:

- 1. A decentralised reserve of public funds gathered throughout the budget year and allocated to financing of public and social goods organised and rendered available by local authorities, emerging from the public financing system.
- 2. A financial plan comprising the local administrative unity's revenues and expenditures as well as

proceeds and outlays planned.

- 3. A legal act adopted by the decision making body of the given local administrative unit.
- 4. A tool used to implement the local administrative unit's developmental strategy.
- 5. A tool used to communicate the principles and methods of utilising the net and gross revenue collected from tax payers among members of the given local and regional community.

A local administrative unit's budget act comprises a number of different components. The most important ones include the revenue (in a breakdown into sources and classification sections) and the expenditure (in a breakdown into current and proprietary, as well as into individual sections) planned.

The local administrative unit's revenue may be classified according to various criteria. With regard to the repayment potential criterion, they are divided into repayable and non-repayable. A different division may result from the need to distinguish between the operating and the capital budget, and hence the breakdown into current and proprietary revenues. Revenues may also be obligatory and facultative in nature. The division resulting from national legal regulations entails the units' own revenue, general subsidies and designated grants.

The local administrative unit's own budget revenue may be divided into several categories according to the economic relevance, i.e. tax based, based on local administrative charges, proprietary (revenue from the municipal real property management and trade) and other (donations, inheritances).

The tax revenue comprising local self-governmental taxes and the share in national taxes is an important source of the units' own revenue, however, it varies depending on the local self-government level. The revenues that play the most important part in terms of income of municipalities are tax revenues (taxes on real property, means of transport, agricultural tax, lump-sum income tax paid in the form of a fixed rate tax, inheritance and donation taxes, tax on civil-legal proceedings, the share in CIT and PIT) as well as revenues from public duties (i.e. market dues, local charges, health-resort fees, dog possession dues, planning fee, stamp duty and operating charges). The tax revenue obtained by administrative districts and provinces are of lesser importance, and they are mainly generated from the share in national taxes (i.e. PIT and CIT).

General subsidies are transferred to local administrative units from the state budget in order to compensate for differences in the territorial arrangement of revenue sources as well as due to the self-governmental authorities' obligation to undertake specific actions for the sake of financing public goods of local and regional nature as well as rendering them available [8, p. 200]. The main characteristic of this source of revenue is that it is not associated with a specific target.

Another source of budget revenues comprises designated grants being a transfer of funds from the state budget allocated to specific purposes and tasks, or under specific conditions of their utilisation.

Budget expenditures of a local administrative unit result from both the scope and type of public tasks performed by the given unit. They can be divided into internal tasks, assigned tasks, material or financial support for other local administrative units, for implementation of financing schemes based on the European Union funds or other non-returnable foreign funds. According to a different classification, they may be divided into current expenditures (i.e. those providing for the functioning of self-governmental authorities or special purpose grants) and proprietary expenditures (investments, stock acquisitions etc.) [7, pp. 62-100].

BUDGET REVENUE AND EXPENDITURE LEVELS

Within the period analysed, the financing system of local administrative units was mainly based on public funds, i.e. the units' own revenues, grants, subsidies and funds from the European Union budget as well as other foreign funds. The actual revenue of local administrative units depends to a considerable extent on tax revenue (or, in other words, on the current economic conditions). It should be stressed that ca. 16% of total revenues and nearly 40% of units' own revenues were attributable to proceeds from PIT and CIT. The economic slowdown which started in the year 2007

negatively affected the implementation of fiscal plans, even though the nominal volumes of local administrative units' revenues were rising within the period studied. This rise was a consequence of intensified absorption of the EU funds as well as increased special purpose subsidies covering projects co-financed from the EU funds. The changes in the revenue and expenditure levels as well as the budget outcome trend in the years 2006-2011 were illustrated with the figures provided in Table 1.

Table 1.

Revenue, expenditure and budget outcome of local administrative units in PLN millions.

Specification	Revenue	Expenditure	Outcome
2006	117,040.2	120,038.2	-2,997,974
2007	131,380.2	129,113.1	2,267,118
2008	142,568.9	145,182.6	-2,613,649
2009	154,842.5	162,828.2	-12,985,734
2010	162,796.6	177,766.2	-14,969,569
2011	171,309.1	181,594.7	-10,285,613
2011/2006 (%)	146.4	151.3	

Source: data processed with reference to *Reports on the State Budget Accomplishment Level* for individual years, Ministry of Finance, www.mf.gov.pl (accessed on 15th November 2012)

Within the period discussed, the revenue increased by 46.4% and the expenditure by 51.3%. The higher dynamics of expenditures was also reflected in the self-governmental financial deficit observed.

Also the number of local administrative units reporting surplus and deficit changed in the years studied (see Table 2).

Table 2.

Number of local administrative units in a breakdown into budget outcome

Specification	Local administrative units reporting budget surplus	Local administrative units reporting budget deficit	Share local administrative units reporting surplus [%]
2006	928	1,880	33.0
2007	1,762	1,046	62.7
2008	1,515	1,293	54.0
2009	668	2,140	23.8
2010	319	2,490	11.4
2011	857	1,952	30.5

Source: as for Table 1.

The figures provided in Table 2 clearly imply that, in the years 2007 and 2008, local administrative units reporting budget surplus dominated, whereas these proportions changed in the successive years.

The need for project co-financing from the EU funds caused the share of special purpose subsidies in the local administrative units' budgets to grow. The changes taking place in the structure of financial revenues of local administrative units have been illustrated with the figures in Table 3. What seems to be particularly noticeable is the increase of special purpose subsidies observed since 2008. This growth was accompanied by a smaller share of the units' own revenues which dropped from 53.7% in 2006 to 48.8% in 2011. Both in this respect and in terms of other phenomena, one may notice the situation to have improved in the year 2011.

Among the most characteristic features of the public financing system, including the local self-government financials, one should mention the discrepancies between the revenue levels planned in budget resolutions and the extent to which the plans were actually accomplished within the budget year.

Table 3.

General revenue structure of local administrative units [%]

Revenue	2006	2007	2008	2009	2010	2011
Unit's own revenue	53.7	56.4	54.9	48.6	48.3	48.8
Grants	16.8	15.6	16.7	22.1	22.7	23.0
Subsidies	29.5	28.0	28.4	29.3	29.0	28.2

Source: as for Table 1.

The per cent in which the revenues planned for local administrative units were obtained within the period studied in a breakdown into individual administration tiers has been provided in Table 4.

Table 4.

Revenue of local administrative units within the years 2006-2011

Specification	Municipalities		Administrative districts		Towns with district rights		Provinces		Local administrative units in total	
	PLN millions	% of plan accomplishment	PLN millions	% of plan accomplishment	PLN millions	% of plan accomplishment	PLN millions	% of plan accomplishment	PLN millions	% of plan accomplishment
2006	51,724.3	98.9	14,844.2	98.8	40,985.9	102.2	9,485.8	96.2	117,040.2	99.8
2007	57,003.1	100.8	16,154.8	99.7	46,873.4	102.8	11,348.9	98.4	131,380.2	101.2
2008	62,317.8	100.3	18,147.2	100.7	49,443.8	101.6	12,660.2	72.7	142,568.9	97.5
2009	64,882.1	97.3	20,084.5	98.2	50,327.5	99.8	19,548.3	92.5	154,842.5	97.6
2010	72,310.5	96.7	22,496.5	98.0	53,885.6	98.6	14,104.0	98.3	162,796.6	97.6
2011	75,830.7	96.8	23,551.6	98.5	56,859.8	98.6	15,067.1	98.1	171,309.1	97.7
2011/2006 dynamics [%]	146.6		158.7		138.7		158.8		146.4	

Source: as for Table 1.

Local administrative units accomplished their revenue plans in the years 2006-2011 in 98.6% on average. In municipalities, this index came to 98.6%, administrative districts reported 98.98%, towns with district rights – 100.6% and provinces – 92.7%. Towns with district rights reported the highest accomplishment level in terms of their revenue plans.

The share of individual local administration tiers in the total revenue showed small differences and deviations. The 2006 share of municipalities came to 44.2%, whereas in 2011 it equalled 44.3%.

The same indices for administrative districts came to 12.7% and 13.7% respectively, for towns with district rights – 35.0% and 33.2% respectively and for provinces – 8.1% and 8.8% respectively.

The independence of local self-governments in terms of expenditures is restricted by the applicable legal regulations but also by the obligation to finance their internal tasks as well as those assigned. These expenditures are recognised as "fixed", as it is commonly referred to, i.e. legally predetermined [3, p. 139]. Public funds should be spent in accordance with the principles formulated in the public finance act [11, p. 46]. The volume of expenditures incurred by local administrative units as well as the per cent of the plan accomplishment are illustrated with the figures provided in Table 5.

Table 5.

Accomplishment levels for expenditure plans of local administrative units within the years 2006-2011

Specification	Municipalities		Administrative districts		Towns with district rights		Provinces		Total	
	PLN millions	% of plan accomplishment	PLN millions	% of plan accomplishment	PLN millions	% of plan accomplishment	PLN millions	% of plan accomplishment	PLN millions	% of plan accomplishment
2006	53,179.6	93.3	15,593.0	96.0	41,237.5	93.9	10,028.1	87.9	120,038.2	93.4
2007	56,074.1	93.1	16,069.6	95.4	45,877.1	94.2	11,092.2	88.7	129,113.1	93.4
2008	62,892.7	92.4	18,114.9	95.6	51,172,4	94.5	13,002.7	69.6	145,182.6	90.8
2009	70,002.6	92.0	21,155.8	94.6	56,201.1	94.0	20,468.7	88.7	162,828.2	92.6
2010	79,740.6	91.8	23,826.4	94.0	58,954.1	92.8	15,245.0	90.4	177,766.2	92.3
2011	79,686.9	92.5	24,058.8	94.6	61,510.5	93.7	16,338.6	92.6	181,594.7	93.2
2011/2006 dynamics [%]	149.8		154.2		149.2		162.9		151.3	

Source: as for Table 1.

Expenditures of local administrative units show an increasing trend. One must not forget that in the year 2003 (i.e. before Poland accessed the European Union), the expenditures came to PLN 80,954 million, whereas in the year 2001, they amounted to PLN 181,594.7, meaning that they increased more than twice. It was related to the process of decentralisation of public assignments and the increase of funds allocated to perform them.

Having analysed the accomplishment levels in terms of expenditure plans, one should notice that the percentage accomplishment was lower than that of revenue plans.

Within the period subject to the analysis, budgets of local administrative units were characterised by a negative outcome, i.e. a deficit, except for the year 2007. The deficit reported in the successive two years showed a considerable increase trend. A budget deficit drop was reported in 2011 compared to the preceding year. Table 5 contains data illustrating the budget outcome of local administrative units in a breakdown into individual administration tiers.

The largest deficit increase occurred in 2009 and affected all self-governmental administration tiers. The largest share of local administrative units whose budgets were closed with a deficit was attributable to towns with district rights.

Table 5.

Budget outcomes of local administrative units (in PLN thousands)

Specification	Municipalities	Administrative districts	Towns with district rights	Provinces	Local administrative units in total
2006	-1,455,370	- 748,792	-251,588	-542,223	-2,997,974
2007	929,005	85,113	996,313	256,686	2,267,118
2008	-574,875	32,335	-1,728,571	-342,538	-2,613,649
2009	-5,120,482	-1,071,294	-5,873,579	-920,380	-12,985,734
2010	-7,430,099	-1,329,896	-5,068,564	-1,141,009	-14,969,569
2011	-3,856,186	-507,199	-4,650,697	-1,271,531	-10,285,613

Source: as for Table 1.

Budget deficit forces the local self-governmental authorities to undertake specific actions aimed at its minimisation or elimination. They may include increasing the efficiency of units' own revenues, increasing the task performance efficiency or reaching for debt instruments [17, p. 282]. Within the period studied, financial liabilities of local administrative units increased from PLN 24,949.1 million in 2006 to PLN 65,756.5 million in 2011 with the largest share attributable to liabilities from credits and loans. About 11% of the above value for the year 2011 accounted for debts incurred on implementation of programmes and projects co-financed from the European Union funds.

REVENUES AND EXPENDITURES RELATED TO IMPLEMENTATION OF PROJECTS AND PROGRAMMES CO-FINANCED FROM THE EUROPEAN UNION FUNDS

In accordance with the act of 13th November on revenues of local administrative units, they may also include funds from the European Union budget.

By the year 2006, the European Union's financial support had been provided under the programming period of 2000-2006. The projects implemented since 2007 have been financed under the programming period of 2007-2013.

The amounts transferred to local administrative units for the sake of financing and co-financing of programmes and projects based on structural funds and the Cohesion Fund as well as financing and co-financing of programmes based on non-returnable European Union funds, and for redemption of payments sourced from the European Union budget (the latter functioning since 1st January 2010) have been provided in Table 6. The table also contains data on the related expenditures.

The figures provided in Table 6 clearly imply an increase of revenue after the Polish accession to the EU, particularly after the year 2008 when projects started being implemented under the EU budgeting period for the years 2007-2013. The accomplishment level for individual revenue and expenditure plans of local administrative units varied in individual years, with the lowest ratios for both the revenue and expenditure planned reported in 2008, i.e. in a period of gradually deteriorating economic conditions.

Table 6.

Revenue and expenditure of local administrative units for financing and co-financing of the EU programmes and projects in PLN millions

Years	Revenue		Expenditure	
	Amount	% of plan accomplishment	Amount	% of plan accomplishment
2004	1,452.3	70.1	no data	no data
2005	2,842.3	66.1	4,768.4	73.3
2006	5,210.9	74.2	8,670.9	80.5
2007	6,622.1	80.0	8,340.4	82.2
2008	5,447.9	46.6	6,259.1	51.2
2009	14,548.1	83.8	17,638.8	82.3
2010	13,793.4	81.7	20,975.4	83.2
2011	16,344.9	82.6	24,046.2	84.8

Source: as for Table 1.

The distribution of funds transferred to local administrative units for the sake of financing and co-financing of programmes and projects implemented based on the EU structural funds and the Cohesion Fund as well as for financing of expenditures whose source was the European Union budget was diversified in individual local administrative units. The percentage distribution of those funds as well as the correlations between the revenues obtained and the total revenue of individual local administrative units have been illustrated by means of the figures provided in Table 7.

Table 7.

Distribution of funds for financing and co-financing of the EU projects and programmes, and correlations between these revenues and the total revenue in %

Years	Municipalities		Administrative districts		Towns with district rights		Provinces	
	Share of distributed funds	Correlation between revenues obtained and total revenue	Share of distributed funds	Correlation between revenues obtained and total revenue	Share of distributed funds	Correlation between revenues obtained and total revenue	Share of distributed funds	Correlation between revenues obtained and total revenue
2004	38.1	0.6	7.9	0.9	24.7	1.1	29.2	6.1
2005	53.0	3.3	17.4	3.6	18.9	1.5	10.1	4.1
2006	34.5	3.5	13.9	4.9	25.9	3.3	25.1	13.8
2007	25.7	3.0	10.2	4.2	33.8	4.8	30.3	17.7
2008	22.0	1.9	5.9	1.8	31.9	3.5	40.2	17.3
2009	13.9	13.1	6.5	4.6	13.9	4.0	65.7	48.5
2010	36.7	7.0	15.2	9.3	21.4	5.5	26.7	26.1
2011	39.5	8.5	11.3	3.3	22.0	6.3	27.0	29.6

Source: author's calculations based on the same data as for Table 1.

One of the funding sources used to cover the expenditures incurred by local administrative units, including those for the EU projects and programmes, is the revenue from credits and loans, bonds and other securities. Within the period analysed, these revenues were considerably diversified. For instance, credits and loans to cover projects and programmes implemented under the EU co-financing in the year 2008 came to PLN 980.8 million, and PLN 3,160.3 million in 2006. The corresponding amount allocated in 2011 equalled EUR 2,704.8 million. The highest revenue from bonds was reported in 2011, i.e. 4,544.7, to compare it with the year 2008 when the same amount merely came to PLN 9.6 million. Other securities were of a relatively smaller importance, although they accounted for as much as PLN 8.5 million in 2010, however, in 2011 no revenue was obtained from this source.

Expenditures of local administrative units (see Table 6) incurred to finance and co-finance projects and programmes implemented with the EU's financial support occurred in all spheres subject to self-governmental activity. The structure of these expenditures was dominated by items such as transport and communication, public utilities and environmental protection as well as agriculture and hunting.

CONCLUSIONS

The studies being conducted proved the self-governmental sphere of finance to be in critical condition. Despite the increase of revenue, the growth dynamics was smaller than that of expenditures. It was translated into a growing number of budget deficits. The situation slightly improved in 2011, and yet it is definitely too early to speak of a permanent positive trend. Significant correlations between financials of local administrative units and economic conditions (one should not forget that ca. 40% of the units' own revenue is currently generated by PIT and CIT proceeds) also determine the financial policy of local self-governmental authorities. Within the entire period analysed, the revenue structure observed remained negative. The share of subsidies increased, contrary to the share of units' own revenues which limited the financial (and economic) independence of local administrative units to a certain extent.

The following years may also prove difficult for the self-governmental financing system bearing in mind the pressure on increasing current expenditures (for education, health care and social security) as well as the investment expenditures planned.

Nevertheless, financials of local administrative units still remain to be an important part of the state's public financing system. Owing to increasingly effective absorption of the European Union funds, they prove to be significant parties in the sphere of infrastructural investments.

REFERENCES

1. European Charter of Local Self-Government drawn up in Strasbourg on 15th October 1985 (Official Journal of Laws of 1994, no. 124, item 607; title corrected in Official Journal of Laws of 2006, no. 154, item 1107).

2. Filipiak B., *Finanse samorządowe: nowe wyzwania, bieżące i perspektywiczne,* Wydawnictwo DIFIN, Warsaw, 2011, p. 282.

3. Jastrzębska M., *Finanse jednostek* samorządu *terytorialnego*, Wolters Kluwer Polska, Warsaw, 2012, p. 139.

4. Constitution of the Republic of Poland of 2nd April 1997 (Official Journal of Laws of 1997, no. 78, item 483).

5. Kopyściański T., "Zasady formułowania wieloletniej prognozy finansowej w jednostkach samorządu terytorialnego", at: *United Europe: new challenges,* National Mining University, Wrocław School of Banking, Dnipropetrovsk, 2011, pp. 219-221.

6. Mikołajewicz Z., Lotko-Czech K., Mąkolska-Frankowska I., *Finanse samorządu terytorialnego w Polsce na przykładzie województwa opolskiego,* PTE, Opole, 2010, p. 10.

7. Miszczuk A., Miszczuk M., Żuk K., *Gospodarka samorządu terytorialnego,* Wydawnictwo Naukowe PWN, Warsaw, 2007, pp. 53-55.
8. Patrzałek L., *Finanse samorządu terytorialnego*, Publication of the Wrocław University of Economics, 2010, pp. 41-42.
9. Ruśkowski E., *Finanse lokalne w dobie akcesji,* Dom Wydawniczy ABC, Warsaw, 2004, p. 76.
10. *Reports on the State Budget Accomplishment Level* for individual years, Ministry of Finance, www.mf.gov.pl (accessed on 15th November 2012).
11. Śniechowicz J., *Ewolucja wydatków jednostek samorządu terytorialnego w Polsce na tle procesu decentralizacji zadań publicznych*, Wydawnictwo DIFFIN, Warsaw, 2011, p. 46.
12. Act of 8th March on the municipal self-government (uniform text: Official Journal of Laws of 2001, item 1591 as amended).
13. Act of 5th June on the district self-government (uniform text: Official Journal of Laws of 2001, no. 142, item 1592 as amended).
14. Act of 5th June on the provincial self-government (uniform text: Official Journal of Laws of 2001, no. 142, item 1590 as amended).
15. Act of 13th November 2003 on revenue of local administrative units (Official Journal of Laws of 2001, no. 88, item 539 as amended).
16. Act of 30th June 2005 on public finance (Official Journal of Laws no. 249, item 2104 as amended); since 2010: act of 27th August 2009 on public finance (Official Journal of Laws no. 157, item 1240 as amended).

CROSS-BORDER COOPERATION AS A FACTOR OF FRONTIER DEVELOPMENT POLAND AND UKRAINE

Janusz Rybak, Valentina Shapoval

The relationship of Poland and Ukraine also their cross-border cooperation are analyzed. Problems that hinder the development of cross-border ties have been identified and ways of relationships between the above-mentioned countries are determined. It is proved that cross-border cooperation is a necessary factor for socio-economic development of the border areas. That determines the economic development of the proportions, the distribution of productive forces and the development of economic infrastructure.

INTRODUCTION

The current stage of development of economic relations between the countries is characterized by means a new component – an international inter-regional cooperation. Main point of cross-border cooperation is an active form of inter-regional relations. The areas of many countries seek place among existed participants. The reason for this is, beforehand, the globalization that promotes intensification of world trade and other forms of international relations.

Inter-regional cross-border cooperation, as a strategy to promote political and economic independence, is supported in Europe. European support for cross-border cooperation follows to some strategic objectives. These include: the ability to open new markets; interests of European safety; political stability and economical cohesion; the ability to avoid the negative effects of competition between the regions; the development of national and regional economies in post-socialist countries. To achieve these goals it encouraged the creation of various international structures to coordinate cross-border cooperation. The creation of Euro-regions that is associations of adjacent territories in neighborhood for solving economical and other problems, also cross-border associations of local administrations is appreciated. Consequently, Euro-regions formed as a means of providing interstate strategic interaction. And the key concepts of cross-border cooperation are the "regionalization" and "institutionalization".

It should be noted that the research perspectives, trends and dynamics in cross-border cooperation involved by many scientists. However, many issues related to the problems and prospects of cross-border groups' development in Ukraine have been neglected. It is important from the point of new forms creation of cross-border relations for border communities and regions of Ukraine, which in May 2004 acquired the status of a direct neighbor of the enlarged EU.

Therefore, the aim of this research is to analyze the relationship of Poland and Ukraine, their cross-border cooperation, also the identification of problems that hinder the development of cross-border relations and determination ways to increase these relations.

BASIS OF RELATIONSHIP BETWEEN POLAND AND UKRAINE

Relations between the Polish and Ukrainian people form more than ten centuries. But only during the last two decades relations between Poland and Ukraine purchased the character of good-neighborliness, equality and true friendship.

The history of modern Polish-Ukrainian relations begins from December 2, 1991, when the Republic of Poland is recognized independence of Ukraine firstly worldwide. On January 4, 1992 diplomatic relations were established between countries.

The new history of the relations of independent Ukraine and Poland are several periods [13]:

1) 1992-1993. Establishment of contacts, opening of Ukraine to the Polish political elite, the signing of bilateral documents first, mutual learning of partners;

2) 1993-1999. The development of inter-relationships and the legal framework, removal of the bilateral relations to a strategic partnership;

3) 1999-2003. Giving effect to the Polish-Ukrainian strategic partnership, which is an important part of the basic values of European society. In time of joining the EU and NATO, Poland supports this convergence and tries to be connector in the implementation of the Euro-Atlantic and European integration aspirations;

4) The fourth period began with the entry of Poland into the European Union on May 1, 2004, when one of the main priorities of Polish foreign policy has been the development of the Eastern direction the EU, and beforehand wish to give real meaning to the formula of the strategic partnership with Ukraine. Today Poland works over the model of Ukraine's relations with the enlarged EU. For this meaning the value of the Ukrainian-Polish cooperation is even more important for the continent, as Ukraine and Poland form the basis of stability and security in Central and Eastern Europe.

It should be noted that the Ukrainian-Polish relations are characterized by high intensity of the mutual dialogue at the highest level as well as at the regional and local levels, by increasing cultural contacts and cross-border movement. Fruitful development of the mutual dialogue between Ukraine and Poland is based on the networking of permanent consultation mechanisms for mutual cooperation.

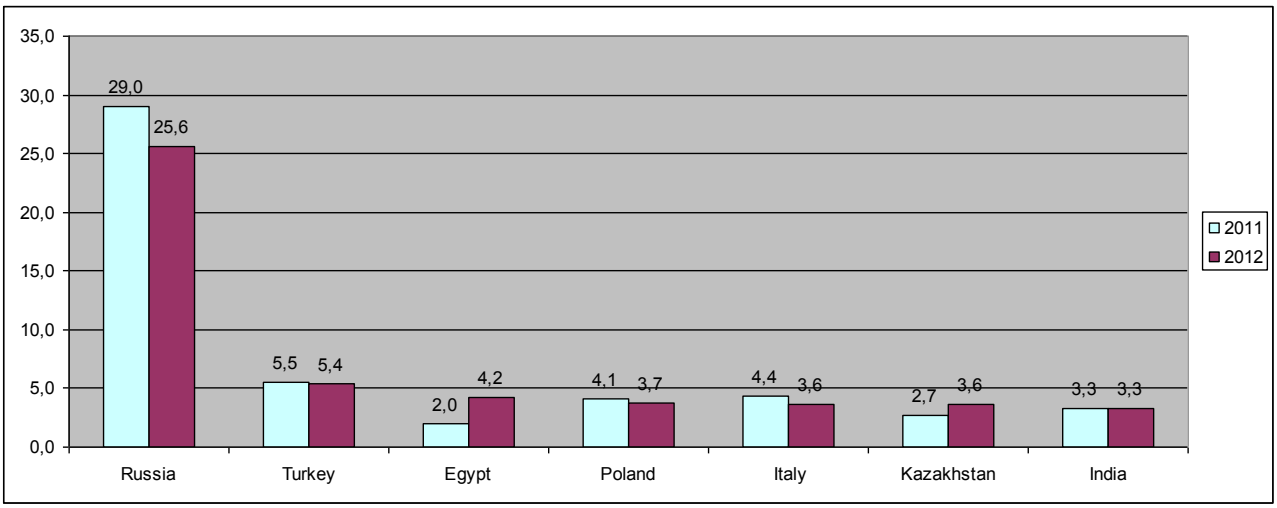
Naturally, a solid foundation of mutual relations is trade and economic exchange. Thus, the results in 2012 show, Poland is fourth (Fig. 1) among the partners of Ukraine in export, and at the same time she occupied fifth place among the partners of Ukraine in the import (Fig. 2).

Base of the commodity structure of export to Poland are: ferrous metals, ores, slag, oil seeds and fruits of plants. Unfortunately, in 2012, export to Poland fells by 7.8% compared to 2011.

In contrast to export, import from Poland in 2012 increased by 12.1%. The main products imported from Poland to Ukraine are: mineral fuel, oil and refining petroleum products, plastics, polymers, paper and cardboard.

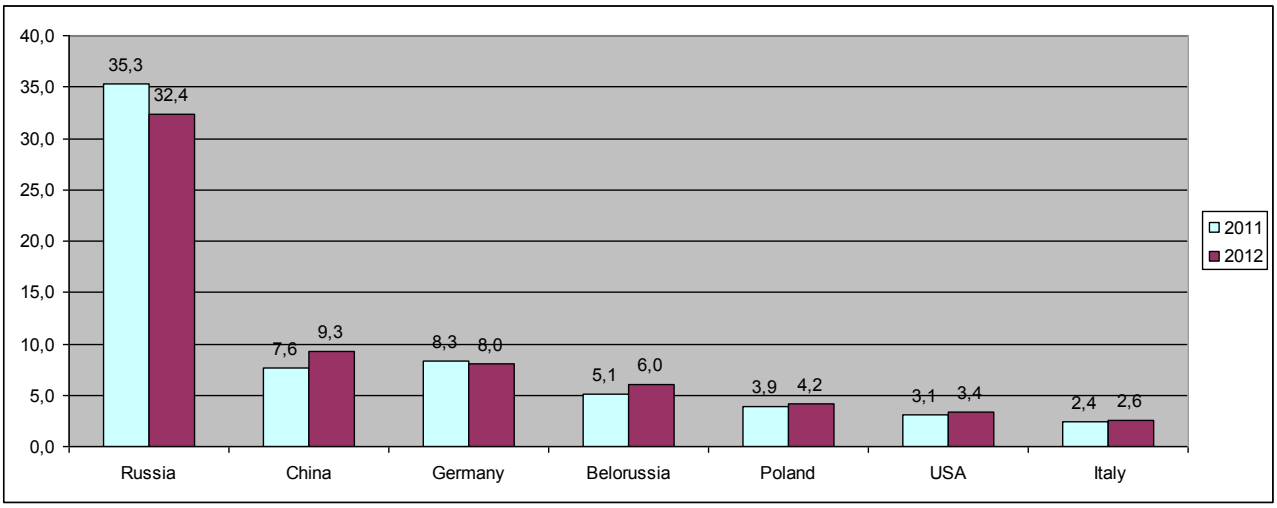
The movement not only of goods but also of capital especially in the form of investments is very important in the relationship between the countries. Practice shows that the exchange of investment contributes to the development of both Polish and Ukrainian business. Thus, according to the data of the State Statistics Committee of Ukraine, as for December 31, 2011, Polish investments in Ukraine reached 875.5 $ million, and the volume of Ukrainian investments in the Polish economy, as for the same period was 48.2 $ million (Fig. 3). On November 2012, Ukrainian

investments in the Polish economy raised up to 53.3 $ million. (i.e. 0.8% of the total Ukrainian investments abroad) [8].



Source: State Statistics Committee of Ukraine: http://ukrstat.gov.ua.

Fig. 1. The main economic partners of Ukraine in exports, %



Source: State Statistics Committee of Ukraine: http://ukrstat.gov.ua.

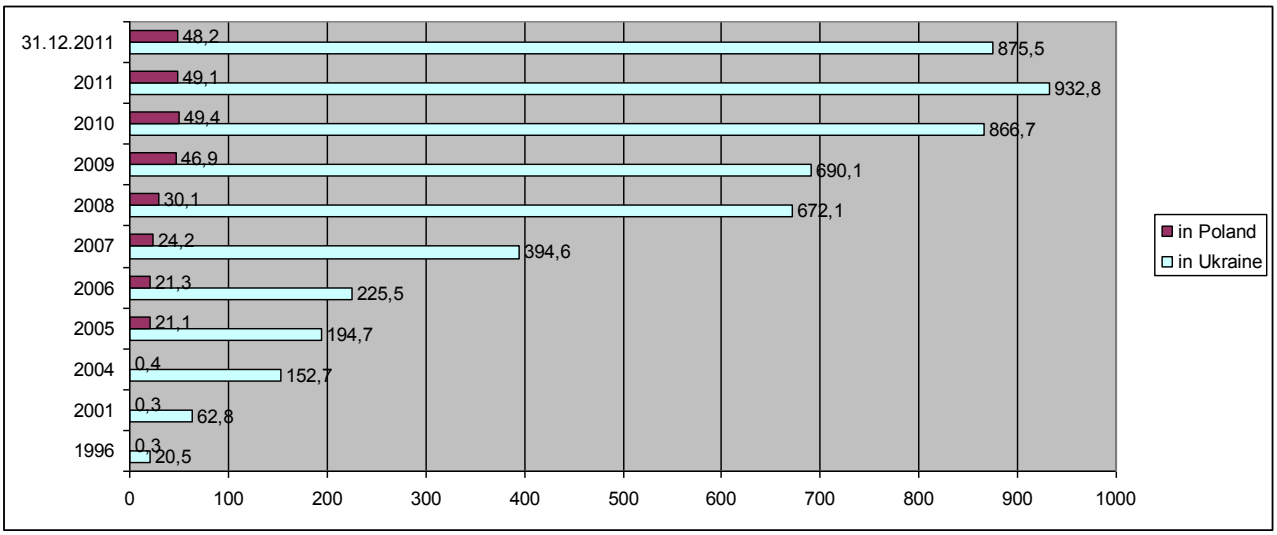
Fig. 2. The main economic partners of Ukraine in import, %

Ukrainian statistics is more than 1 $ billion. The most successful Ukrainian investment projects in Poland are: Iron and Steel Works "Huta Czestochowa" (investor ISD), Shipyard "Sewage Gdansk" (investor ISD), "Guth Pokuy" (investor "Private"), lighting plant "Helios" (investor "Iskra"), fruit-processing plant «T.B.Fruit Dwikozy» (investor «T.B.Fruit» (owner of the trademark "Yablonevij Dar") [6].

So, Ukraine, as a country with a high scientific and technical potential, is ready to cooperate with Poland in the field of nuclear energy, aviation, construction of nuclear power plants.

Interregional cooperation between Poland and Ukraine also successfully developed, that is today one of the main priorities, as these relationships have the prospect of becoming a locomotive that will bring the mutual relations to a qualitatively new dimension.

To date, almost all political lands of Poland signed an agreement on mutual cooperation with the Ukrainian regions (signed 450 agreements on interregional cooperation). Moreover, some of the Polish provinces have of 4-5 such agreements [7].



Source: State Statistics Committee of Ukraine: http://ukrstat.gov.ua.

Fig. 3. The dynamics of the Ukrainian-Polish investment cooperation, $ million

At the same time, the volume of real Ukrainian investments in Poland, which are not fixed by

Practice shows, that today Ukraine has the most extensive network of inter-regional cooperation exclusively with Poland, and the process of signing the contract has steadily increased. Most partners have Carpathians, Lublin, Lodzskoe, Silesia and Mazovia. From the Ukrainian part the most Polish partners have Lviv, Odessa, Ivano-Frankivsk, Vinnytsia and Volyn region.

Implemented in Ukraine and Poland inter-regional projects are concerning to important aspects of Polish-Ukrainian relations. They are aimed primarily at the exchange of experience in the field of regional development, agriculture, tourism, economy and business, promoting local administrations, commercial and tourist companies, non-governmental organizations, schools, higher education institutions to establish direct cooperation.

Special place in the inter-relationship between Poland and Ukraine are occupied by cross-border cooperation. Border areas are able to stimulate economic development and look for innovative ways to solve different problems.

The cross-border cooperation In Ukraine is both a tool for the development of border areas and a factor in the realization of European aspirations, which are displayed in the National Strategy of Regional Development of Ukraine for the period until 2015.

It should be noted that heterogeneity or differentiation of the economic environment present in Ukraine. They influence on the political system, economic structure and efficiency, strategy and tactics of institutional changes and the socio-economic and environmental policies. Heterogeneity is a measure of regional disparities overall levels of economic development (economical activity) and life quality level in the border areas. Therefore, the main role of cross-border cooperation is not only the possibility of accelerating the convergence of life quality levels in border areas and to achieve free movement of goods, people and capital across the border to the full integration, but also in smoothing out imbalances of social and economic development of certain areas of Ukraine.

FEATURES CROSS BORDER COOPERATION

The term "cross-border cooperation" in the scientific literature and in European legal instruments identified changes in the views of politicians, scientists and ordinary citizens concerning to the functions of state borders and the role of local and regional communities establishing mutual cooperation between them.

In this context, interesting is the point of view the famous Swiss expert on the development of border regions and cross-border cooperation R. Ratti. He notes that "the boundary contains a dual concept: at the same time it can be a factor that separates the different political-institutional system

and the factor that ensures contact between different social groups". In this case, in R. Ratti opinion, the plan is to create a "distribution line, which is typical to the historical phase, known as the European Convention". In the classic sense of the border – it serves as a "legal control when it is necessary to clearly distinguish areas which are subject of different national legislations and different legal systems". This function R. Ratti describes as a "filter". Aims of this function are control and manage contacts (connections) along the border.

Describing the border as a "contact factor", R. Ratti said that in this case it is "probably not a line, but functional space", where crosses "different societies and communities – and that's why it is possible to talk about the cross-border regions". Thus, according to the further typology R. Ratti, *border* is a *barrier* (the prevailing factors are isolation and secrecy, as the effect of economic isolation), a *filter* (generally the border is opened, but it is a filter according to the tasks of national policy), and *opening border*, where the dominant is the contact and cooperation functions across borders as part of the integration process [14].

Offered by R. Ratti typology of "border functions" points needs for a theoretical framework to define areas of cross-border cooperation in the European integration. Definition of the border concept is the starting point to find recommendations regarding cross-border cooperation of local and regional authorities in Europe, proposed by the Council of Europe, which proclaims that "the role of the border has changed, instead of the barrier it is becoming to a place where two kinds of reality meets and where is opportunity for synergies" [11].

Cross-border cooperation exists in the format of cross-border regions. Cross border region can be defined as a territory within the border of the administrative-territorial units of neighboring countries. A border is a factor in identifying the cross-border region of the aggregate to province. Functional cross-border regions are based on the border territories of shared natural resources, history, social and cultural similarities, which are potential areas for cooperation and inter-regional relations in pursuit of common interests [3].

Cross-border cooperation in the law of Ukraine is defined as a joint action aimed at the establishment and deepening of economic, social, scientific, technological, environmental, cultural and other relations between the territorial entities and their representative bodies, local executive authorities of Ukraine and the relevant authorities of other countries within the scope defined by their national law [9]. This definition coincides with the explanation of cross-border cooperation of the European Outline Convention on Trans-frontier Cooperation between Territorial Communities or Authorities [4].

Topic of cross-border cooperation was made before Ukraine gained independence. In Soviet times there was a right to certain forms of this activity, but they were rather declarative character. Mainly Kiev and other Ukrainian cities establish such connections with the cities of the so-called socialist camp.

Positive and negative results of international cooperation Ukraine could feel after the proclamation of independence. Although this activity was non-regulated by national law in 1990's, local authorities, especially in the western border regions, began to look for opportunities to collaborate with the administrative-territorial units of the neighboring countries, especially with the Polish regions.

According to expert opinion from Association of European Border Regions (AEBR), cross-border cooperation bring so-called "added value" for the development of regions. The European added value is based on previous experience of the population, which lives along the border in the neighboring regions and therefore wishes to cooperate and facilitate the promotion of values such as peace, security and human rights. This is the political, institutional, socio-economic, ecological and socio-cultural added value [1].

Cross-border cooperation between Poland and Ukraine exist in several forms. First of all, it is the traditional contract between the administrative-territorial units' countries on cooperation in such areas (cultural and humanitarian ties, sports, education, environment, etc.).

The next type of cross-border cooperation is so-called Euro-regions. At the moment, border regions of Ukraine are involved in the operation of eight Euro-regions: "Bug", "Carpathian",

"Lower Danube", "Upper Prut", "Dnepr", "Sloboda", "Yaroslavna" and "Donbass". They include Volyn, Donetsk, Zakarpattia, Ivano-Frankivsk, Luhansk, Lviv, Odessa, Sumy, Chernivtsi, Chernihiv and Kharkiv regions of Ukraine. "Bug" and "Carpathian" are Polish-Ukrainian Euro-regions.

Particularly the Euro-region "Carpathian" exists on the basis of the Declaration on the cooperation of communities living in the Carpathian region, as well as on the basis of the statute of the Interregional Association "Carpathian Euro-region", signed February 14, 1993 in Debrecen (Hungary). Today the "Carpathian Euro-region" covers an area of 140 thousand square meters. km with a population of 14 million people and includes 4 of the Polish provinces and 4 Ukrainian regions, also 4 Hungarian, 5 Romanian regions and 6 Slovakian municipalities [5].

Functioning of "Bug" Euro-region is governed by the Agreement on the establishment of Cross-Border Association "Euro-region Bug", signed September 29, 1995 in Lutsk between Volyn regions and former Kholm, Lublin, Tarnobzhez and Zamost regions of Poland (before changes in 1999).

As the results show, using the potential of European regions enables regions of Ukraine and Poland to cooperate effectively in the field of trade, agriculture, science and education, culture, tourism, environmental protection, development of transport and communications, crime control and cope with disasters. Funding of individual projects and overall functioning of the European regions carried out by different EU-funds in programs RNARE, TACIS, INTERREG, CREDO (EU gives about € 1 million only for "Carpathian Region"). Most influenced international charities that sponsor European regions are American Institute of «East-West» (IEWS) and Rockefeller Foundation.

The third form of cross-border cooperation is programs cross-border cooperation, which are implemented in the framework of the European Neighborhood Policy (ENP). Ukraine participates in four such programs: "Ukraine - Poland - Belarus", "Ukraine - Slovakia - Hungary - Romania," "Ukraine - Romania - Moldova" and "Black Sea". EU-budget for this purpose is more than 378 million euros for 2007-2013. Implementing projects in areas of improved border management, contacts between people, ecology, the improvement of the competitiveness of border areas are realized for this cost.

CBC Program "Ukraine - Poland - Belarus" directed on projects in the following areas:

- Increasing the competitiveness of border areas;
- Improving the quality of life;
- Institutional cooperation and support community initiatives.

It should be noted that, 170 projects have been implemented as part of the program in recent years for a total of € 12 million [10].

First of all, we should note the project "Strengthening cross-border cooperation in the provision of business services and facilitate access to business" [12]. The project aims to promote and enhance cross-border cooperation in the field of business culture and institutional development, direct support for small business, the strengthening of business, public, educational, governmental and non-governmental organizations of the border regions. The project concludes six micro-projects to achieve a common goal "Ukrainian-Polish virtual exchange of innovative projects and proposals", "Creating conditions for development of tourism infrastructure in the border areas on historical castle complexes", "Development of cross-border business cooperation", "Development of eco-tourism and creating a positive tourist image of the border region", "Development of cross-border cooperation in the area of improving the access of small enterprises", "Improving the investment climate in the border regions".

Other collaborative projects that have been successfully implemented in the border regions of Ukraine and Poland are [2]:

1. "Ukrainian-Polish cross-border agency - together into the future". Goal is to improve the institutional framework for cross-border cooperation by establishing a network of local agencies in the regions.
2. "Creating a cross-border strategy to prevent flooding in the basin Western Bug".
3. "Expert". The improvement in the cross-border labor market.
4. "The development of institutional cooperation in the field of entrepreneurship and

innovation in the border regions of Poland, Ukraine and Belarus".

5. "Partners of tourism in Europe". Support the development of tourist industry and cooperation between Poland, Slovakia, Czech Republic, Germany and Ukraine.

Also projects are undertaken to improve the organizational and technical support of functioning of border points as well as the construction of new border crossings.

It suggests that normalization of relations comes due to cross-border cooperation between countries, which make possible to avoid border conflicts. Helping to revitalize business in the border areas, creation of joint ventures with the capital of the Polish and Ukrainian entrepreneurs, development of tourism, cultural, scientific and educational cooperation, both Poland and Ukraine intensify social life.

HINDERED PROBLEMS FOR CROSS-BORDER CONNECTIONS BETWEEN POLAND AND UKRAINE

With the positive changes some areas for further development of the border relations between Poland and Ukraine are not neglected. First of all it concerns simplify cross-border movement of goods, which are produced and consumed in these areas. Also it concerns the development and implementation of the border areas, modernization of system and communications infrastructure in the border regions (mainly Ukrainian) etc. As scientific results show, a number of problems (economic, legal and social) are reason for inhibition the development of cross-border cooperation between Poland and Ukraine.

First of all, we should highlight the economic problems, which include a variety of rates, the direction and character of the transformation of society, the economic potential countries. Also it includes the insufficient financial capacity, working capital, banking infrastructure, investment of joint projects and the presence of the shadow economy in Ukraine. The legal problems include bad coordination of legal systems in Poland and Ukraine, especially after Poland's accession to NATO and EU; instability of Ukrainian economic legislation and legal framework for cross-border cooperation; bad coordination of Ukrainian legislation with EU law. Social problems include negative stereotypes of public consciousness that hamper the development of partnerships between countries; psychological unwillingness to cooperate with the public; low level of interest population in the results of cross-border cooperation.

It should be noted that the success of the Ukrainian-Polish cross-border cooperation depend on the socio-economic development of the border regions. Historically, economy in the border area is less developed in comparison with central regions. Thus, the economy of the eastern Polish provinces is less developed than the central and western. However, these provinces of Poland now are showcase of eastern EU. Moreover, Poland went through a process of decentralization, and regions including Eastern, were given the power to promote international cooperation. This contributes economic development in these provinces. Unfortunately, it doesn't depend on Ukraine, which are centralized and the socio-economic development of the western regions of Ukraine has lags behind other regions. Moreover, Ukraine still underestimates the importance of cross-border cooperation as an instrument of territorial development and improving the quality of life in the border regions.

The constraints include the fact that in many cases regional and local authorities in Ukraine are not ready to accept the cross-border cooperation as a sphere, which needs coordination function and monitoring functions of compliance with the current legislation, but not the using of the hard administrative control.

In contrast to Poland, which are a mostly delegated people of the public and business sectors to administration of Euro-regions, the border regions of Ukraine are represented by government employees. It doesn't facilitate the rapid and effective attraction of Ukrainian small and medium-sized businesses and public sector to the promotion of cross-border cooperation.

Significant constraint is difference in the mechanisms of aid from the EU through the PHARE and TACIS. In comparison with the countries of Central and Eastern Europe Ukraine has limited access to the opportunities provided by the EU through programs and initiatives. In some

cases, these differences are even lead to loss interest in further participation in the overall project as part of cross-border cooperation. This is one of the problems that need addressing in the general level of the Ukrainian Government and the European Commission.

Naturally, Poland and Ukraine must to resolve all these problems with the purpose of strengthening the process of cross-border cooperation.

MAIN DIRECTIONS OF FURTHER CROSS-BORDER COOPERATION BETWEEN POLAND AND UKRAINE

In our opinion, the main directions of further development of cross-border relations between countries should be:

- development and improvement of the institutional framework of cross-border cooperation;
- interstate settlement of legal relations;
- creation of concept of cross-border cooperation concerning to foreign policy of Poland and Ukraine;
- formation, development and modernization of the border infrastructure, which includes building, organizational and technical support for operating cross-border settlements in accordance with the standards of the EU, as well as the construction of new border crossings (including Ugryniv-Dolgobychuv, Grushiv-Budomezh);
- creation of a common communications system, including the modernization and development in the border areas of communications infrastructure, construction of new roads;
- development of economic cooperation, establishment of the general preferential system for certain types of international economic activity in border areas; attracting foreign capital and investment; creation of conditions for development of small business; simplification of cross-border movement of goods and services in the border areas, which are produced and consumed in these areas;
- development of cooperation in the field of environmental protection, monitoring of cross-border pollution of soil, air and water and creation on this basis joint programs and mechanisms to solve ecological problems, as well as the protection and rational using of natural resources;
- implementation of programs for the development of the border areas;
- development of international tourism, cooperation in culture, science, education, etc.

CONCLUSIONS

Cooperation between Poland and Ukraine depend on the centuries-old traditions of relationships, common demographic roots, close cultural ties and common political and strategic interests. That is why today it is important to develop an effective model of cooperation between Poland and Ukraine, to develop and deepen connections in accordance with the national interests of both countries, to introduce new forms of integration and cooperation, to demonstrate the economic opportunities and benefits in the investment plan.

Practice shows that the inter-regional cooperation is an important component of the strategic partnership between Ukraine and Poland, the effective point in integration of Ukraine, as well as a practical tool implementation of European standards at the regional and local levels.

Cross-border cooperation is a necessary factor for socio-economic development of the border areas. It determines the proportion of economic development, productive forces distribution and development of economic infrastructure. Cross-border integration helps to improve the industry structure, to raise productivity and quality of products and services and to intensify of the economy and the development of border areas.

The competitive advantages of cross-border cooperation are:

- association of resource potential (labor, recreational resources and social infrastructure);
- significant growth of export-import operations in border regions;
- creation of joint ventures, which provide the opportunity to enhance investment and use advanced technologies;

- growth of innovative potential cross-border region by increasing of scientific researches;
- inter-regional and international cooperation in the field of intellectual property;
- cooperation in the field of education and science.

Euro-regions are a bridge in the process of European integration. It was practice in the Western, Northern and Southern Europe in the late 60's - early 70's of the XX century, and it is from the early 90's at the borders of Central and Eastern Europe.

The activity of Euro-regions in Poland and Ukraine ("Bug" and "Carpathian Euro-region") yields positive results. Favorable conditions are created for the further rapprochement of the Polishes and Ukrainians. Contacts are not only in the level of government and business organizations, but also in the level of human relations. Moreover, the activity of European regions makes it possible to attract EU funds through appropriate programs for their development, which significantly reduces government expenditures. However, it should be noted that these results are not enough, especially in the context of the potential participants in the Polish-Ukrainian cross-border cooperation. The efforts of both parties should be directed primarily for finding possible solutions of existing problems, for development of an optimal model of cooperation the Euro-regions with the provisions of the law, trade regimes and EU standards.

REFERENCES

1. Андерсон Н.В. Эффективность трансграничного сотрудничества и формирование европейской региональной политики / Н.В. Андерсон // Економічні інновації. – 2011. – Випуск 43. – С.9–18.
2. Гребельник О.П. Сучасні тенденції транскордонного співробітництва України та Польщі / О.П. Гребельник // Вісник Хмельницького національного університету. – 2009. – №1. – С.167–172.
3. Дергачева В.В. Трансграничное сотрудничество как основная составляющая международного научно-технического сотрудничества / В.В. Дергачева // Економічний вісник НТУУ «КПІ». – 2010. –№12. – С.54–58.
4. Долішній М.І. Регіональна політика на рубежі XX–XXI століть: нові пріоритети / М.І. Долішній // НАН України. Ін-т регіон. дослідж. – К. : Наук. думка, 2006. – 510 с.
5. Еврорегиональное сотрудничество государств Центральной и Восточной Европы [Электронный ресурс]. – Режим доступа: http://www.nasledie.ru/politvne/18_10/article.php?art=75(15.08.2000).
6. Євро-2012 допомогло Україні розвіяти стереотипи [Електронний ресурс]. – Режим доступу: http://poland.mfa.gov.ua/ua/press-center/publications/962-posol-ukrajini-v-respublici-po-lyshha-jevro-2012-dopomoglo-ukrajini-rozvijati-stereotipi.
7. Міжрегіональне співробітництво між Україною та Польщею [Електронний ресурс]. – Режим доступу: http://poland.mfa.gov.ua/ua/ukraine-pl/regions.
8. Офіційний сайт Державного Комітету статистики України. – Режим доступу: http://ukrstat.gov.ua.
9. Про транскордонне співробітництво : Закон України від 24 червня 2004 р. №1861-IV // Голос України. – 2004. – №134. – С.7.
10. Состояние и перспективы украинско-польских отношений [Электронный ресурс]. – Режим доступа: http://www.mfa.gov.ua/poland/ua/publication/ content/29136.htm.
11. Студенніков І. Регіональна політика в країнах Європи: Уроки для України / І. Студенніков // За ред. С. Максименка. – К.: Логос, 2000. – 171 с.
12. Транскордонне співробітництво // Україна – Євросоюз у деталях. – 2010. – №3(6). – 16 с.
13. Украинско-польские отношения [Электронный ресурс]. – Режим доступа: http://www.mfa.gov.ua/poland/ua/publica-tion/content/981.htm.
14.Ratti R. Borders and Regions in a Changing Europe – a Theoretical Framework / R. Ratti // Regional Contact. – 1997. – №12. – P.32–40.

CONVERGENCE OF REGIONAL INNOVATION INFRASTRUCTURE OF UKRAINE AND THE EU

Elena Dotsenko

The article deals with regional innovation infrastructure as an innovative component of the EU policy, analyzes its components and the possibility of integration of its structural elements into the infrastructure of Ukrainian regions as well as participation of Ukraine in European policies to stimulate innovation development.

INTRODUCTION

Growing interdependence of national economies and change in the importance of sustainable economic growth factors turned the innovations in economy into the most significant factor in the integration processes. The position of the European Union in the global economy is determined by modern competitive conditions, based on the constant generation and development of scientific and technical potential for innovative production and continuous transformation of scientific knowledge into innovative products sold in the market.

For the implementation of priority tasks innovative development strategies are developed by the EU and all activities performed by the EU member states in the innovation area are coordinated. Developing and carrying out a general effective innovation policy involve reduction of differences between member-states in terms of social and economic development and intellectual potential, forming a common innovation space.

Within the framework of the collective EU strategy towards Ukraine the importance of Ukrainian integration into the common European economic and social space, based on knowledge and innovation is emphasized. The EU experience in raising the competitiveness of economy of both the whole country and its individual regions, developing intellectual potential, reducing the differentiation between regions, implementing effective innovation policy is relevant and essential to the development of Ukrainian economy.

The innovative way of Ukraine's development and its regions requires the use of proven practices of international and European experience in terms of the country's course of integration into the European Community. The following practices are the most essential to implement:

- creation of innovation investment funds;
- creation of a common financial market;
- creation of common elements of innovation infrastructure;
- development of scientific research centres;
- proper remuneration for scientists;
- improvement of the quality of university education.

Regional and industrial differentiation is a serious obstacle to the formation of effective innovation economy in Ukraine. Ukraine needs integration of education, science and innovation, creating favourable conditions for effective partnership between the state and business in the innovation economy. Innovation will develop in Ukraine only under the condition that the innovation component becomes dominant in the activity of all economic entities. First of all it is necessary to develop innovative infrastructure in the regions, which will facilitate the formation of supply and demand for innovative products, the creation of competitive markets and greater social and economic development.

The main idea of the EU innovation policy lies not only in financing projects but also in promoting European regional cooperation between different subjects of innovation activity, coordinating innovation policies of the EU member states, developing a common strategy, as well as sharing the best national experience in creating innovation. The program of fostering innovation in the EU is aimed primarily at the diffusion of innovation by forming structural elements and mechanisms of implementing innovation policy. The EU has accumulated the most extensive experience in the development of innovative cooperation among regional economic integration

organizations. The promotion of innovative development is being done through multiple interdependent and complementary channels including Framework for R&D, "Eureka" project and Structural Funds.

According to the Law of Ukraine "On the innovation activity" [1] innovation infrastructure is a set of businesses, organizations, institutions and associations of any form of ownership which provide services for implementing innovation (financial, consulting, marketing, information and communication, legal, educational, etc.).

Fig. 1 shows a diagram of the innovation infrastructure, which includes [2]:

- financial component to ensure continuous funding of innovative projects at all stages of their implementation;
- industrial and technological component: technoparks, innovation and technological centres, business incubators, technology transfer centres, etc.;
- information, consulting, educational and marketing components.

The main elements of innovation infrastructure in the EU are business innovation, telecommunication and retail chains, industrial parks, business incubators, innovative technological centres, consulting firms, financial institutions and others.

A significant place in the EU innovation infrastructure is given to the creation of the network of innovative regions involved in the development of innovative strategies and exchanging experiences on the diffusion of innovation. European innovation infrastructure includes more than 1.5 thousand different innovation centres, including more than 260 scientific and technological parks.

Among various forms of innovative structures in the EU countries there are centres for innovation coordination (technology transfer centres) called IRC (Innovation Relay Centre). Their aim is to ensure effective communication in the area of transfer of new knowledge and technologies between national entities of the innovation market and outside the country. The experience of European countries shows that the functions of innovation centres include exchange of scientific, technical and economic information; recommendations on innovative design, funding opportunities and the use of EU structural funds; collection and organization of information about European projects; collection, systematization and transmission of information about innovative features of the region; search and mediation for international project partners; organization of seminars on innovation, implementation of innovation at enterprises, EU funding opportunities and innovative development of the region; advice on the development and management of innovative projects, services on tenders preparation and proposals for public funding of projects. [3]

Among other components of the regional innovation infrastructure of EU countries it is necessary to mention the system of knowledge generation, represented by a set of state and public organizations that perform fundamental research and applied research and development. In addition, a significant amount of research and development is carried out by universities.

Universities occupy a significant place in European innovation infrastructure because on one hand they are an integral part of research training, on the other hand university laboratories are the base for fundamental research. Another type of European universities innovation activity is conducting applied research and creating intermediate structure for its industrial implementation. Universities also attract enterprises of high-tech industries into the region and provide the region with highly skilled engineering staff which raises its attractiveness for foreign companies as well.

This shows the importance of higher educational institutions as a factor of economic development on an innovative basis. The innovative component of the state policy also covers the range of national scientific institutions (institutes, research centres, university laboratories), which is aimed at creating conditions for market implementation of innovative product.

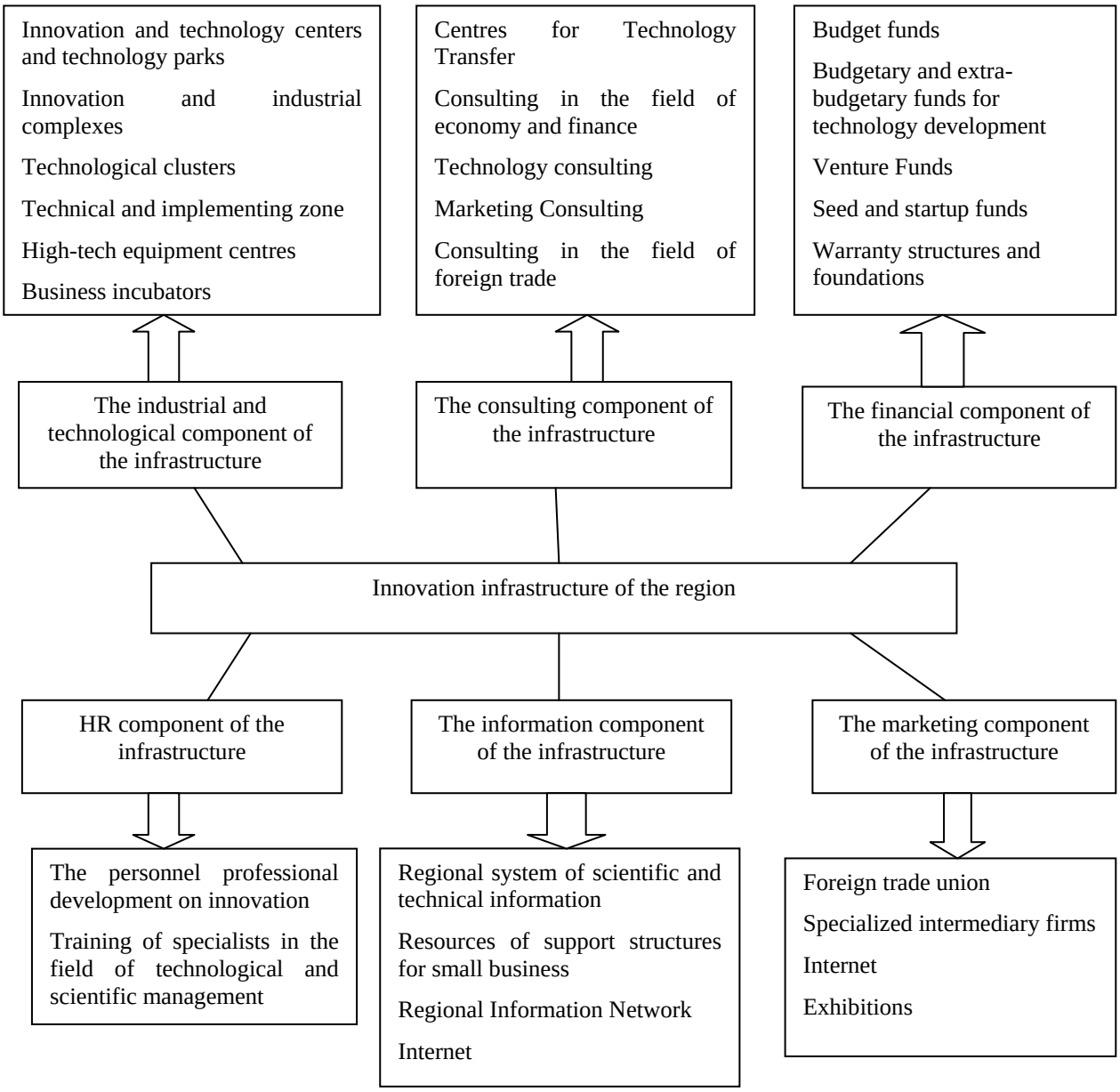


Fig. 1. Basic elements of innovation infrastructure in the region

The development of Ukrainian universities as components of the innovation infrastructure, improvement of their quality and cooperation with European universities is not possible without effective implementation of the Bologna process which promotes general education and scientific space not only across the EU but also in other countries (including Ukraine) that joined the process and accepted the values of European innovation model. The new EU policy in education involves improvement of interaction between education, science, business, state and supranational structures, building a chain of "education, science and industry", which increases the competitiveness of the EU in world markets. The fact that such organizations as the European Union, the Council of Europe (Council for Cultural Cooperation, part of which is the Documentation Centre on education in Europe), UNESCO-CEPES (European Centre on Higher Education), the European University Association (EUA), the European Association of Institutes of Higher Education (EURASHE) and the National Unions of Students in Europe (ESIB) joined the cooperation in this field should be considered the most important feature of the present stage of integration in the field of higher education and science.

In the framework of the Bologna process growing attention is given to the development of the third stage of the higher education which involves obtaining a scientific degree. It is the degree

holders who make the largest contribution to the development of science and enable putting scientific knowledge into practice. A special role in coordinating and exploring the establishment of common European research area is given to the European University Association (EUA). The development of the third stage of higher education will facilitate effective innovation policy of common European space for science and education, training professionals who, due to their knowledge, have high level of mobility and competitiveness and meet the current social, economic and technical requirements.

Together with joining the Bologna process, the development of Ukrainian universities and science is fostered by the partnership programmes on joint research projects (Table.1)

Table 1. Partnership Programmes on researchers' support and exchange within joint research projects [5]

Scientific organization	Number of Projects	Number of delegated scientists	Number of enrolled scientists
Polish Academy of Sciences	102	275	170
National Centre for Scientific Research of France (CNRS)	49	105	132
Bulgarian Academy of Sciences	45	72	-
Hungarian Academy of Sciences	39	129	54
Academy of Sciences of the Czech Republic	35	60	43
Slovak Academy of Sciences	29	43	33
Council for Research of Turkey (TÜBİTAK)	14	69	29
Romanian Academy of Sciences	12	58	44

Both large industrial corporations and small and medium enterprises that operate in knowledge-intensive business produce high-tech products in the EU countries. Small and medium-sized innovative enterprises (SMEs) are considered to be a form of intermediate structure between public research sector and large industrial firms. Their support is one of the priorities of innovation policy in all countries of the European Union. Multiple innovative institutions were established to assist SMEs; among them are centres of innovation and technology transfer, technology diffusion networks, information networks and other structures for technology transfer and innovation support [4].

One of the most important elements of the European innovation infrastructure is funding innovative projects through venture capital funds. According to the European Venture Capital Report, published by Ernst & Young and Dow Jones Venture One in Europe, Europe saw 212 deals accounting for €777 million in the first quarter of 2010, down 10% from the €861 million put into 227 deals during the same period in 2009.The average size of transactions increased by 9% to €2.25 million [10]

One of the tools of venture business development in Ukraine and its convergence with the European venture capital market is holding venture fairs, which can be a catalyst for the development of innovative technologies market. For small and medium businesses interested in attracting investment a venture fair is a unique opportunity to submit their project to the investors who act in the market of direct and venture investments.

Adam Smith Conferences in London is very actively engaged in expanding its portfolio of measures for Ukraine. The most important among them is the Ukrainian Investment Summit, which is held annually in London with the support of the Embassy of Ukraine in the UK. [6].

An essential role in promoting innovation belongs to structural funds which provide financial support for the development of innovation infrastructure, especially in the less developed regions of the EU. Currently the European Union provides financial assistance through multi-regional development programs drawn between the regions, Member States and the Commission,

and also within specific initiatives and schemes of the Community, with the help of four structural funds.

- the European Regional Development Fund (ERDF) finances infrastructures, provides investment to create jobs, finances local development projects to support small and medium-sized businesses;

- the European Social Fund (ESF) was designed to help the workforce adapt to changes in the labour market, as well as the unemployed and other vulnerable groups to find work, particularly by financing their professional training;

- the European Agricultural Guidance and Guarantee Fund (EAGGF) finances rural development measures and provides financial assistance to farmers, especially in regions lagging behind in development, and also within the Common Agricultural Policy in other regions of the EU;

In addition, there is also the Cohesion Fund in the EU, which finances projects in the field of environment and transport networks in those Member States whose Gross National Income (GNI) per inhabitant is less than 90% of the Community average. The financial resources of the Fund serve to reducing economic and social deprivation and stabilize the regional economy. For the 2007-2013 period the Cohesion Fund concerns Bulgaria, Greece, Estonia, Cyprus, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia, Hungary Slovenia and the Czech Republic. [7]

Over the past 10 years the EU countries have significantly increased the importance of regional innovation cooperation. As a result, three levels of regional policy formation (a policy that is carried out by regions, the regional component of the federal innovation policy and supranational EU policy) are very closely intertwined.

Innovation policy has become an integral part of the national regional policy. The regions that lag behind get government assistance in the form of promotion the development of innovative policy and infrastructure development instead of direct financing. Eliminating disparities of regional development is the main function of the EU, so the network of Innovation Relay Centres (IRC) works in the field. IRCs are national and transnational associations in the sphere of development and exchange of experience on innovation strategy. The innovation diffusion centres have the status of independent consulting organizations in the field of technology and business, supported by the European Commission on Enterprise [8]

The task of EUREKA, an intergovernmental program, established in 1985, is to strengthen the competitiveness of the economies of European countries by providing support to businesses, research centres and universities to develop innovative products: goods, processes and services based on new technologies.

The EUREKA program, which represents a decentralized community, sensitive to the market demands, offers partners a quick access to the acquired knowledge, skills and expertise across Europe and facilitates access to public and private sources of finance. Scientific and practical knowledge of Ukrainian researchers and scientists should be put into practice to yield business results. In addition, Ukrainian industry and infrastructure should make use of new innovative products and technologies to support economic development and competitiveness of the state.

EUREKA program should become one of the complementary tools to accelerate the transition of Ukrainian economy to the innovative way of development. To achieve this, regional institutions responsible for the innovation projects organization should extensively adopt the EUREKA principles. Regional scientific and educational institutions should be informed about the EUREKA programme, the mechanisms of its functioning, procedure of preparation and submission of projects and international cooperation opportunities opened through the programme. [9]

CONCLUSION

Nowadays the EU moves to a new strategy of innovation stimulation which involves the growth of R&D expenditures, creation of a common European research and innovation space, expansion of horizontal and vertical coordination of innovation policy and strengthening innovation

policy at the regional level. European experience in stimulation of the integration process in scientific and technical activities aimed at strengthening the competitive position in the world hi-tech markets may be useful for the design of innovative models of cooperation between Ukraine and the EU. Synthesis and analysis of the EU experience in formation of the regional innovation infrastructure can be a valuable contribution to determining main directions of regional innovation development of Ukraine.

REFERENCES

1. Закон України «Про інноваційну діяльність» від 04.07.2002 № 40-IV
2. Доценко О.Ю. Формування інноваційної інфраструктури регіону як елемента регіональної інноваційної системи / О.Ю. Доценко//Економічний вісник НГУ. – 2010. - № 2. – С. 12-19
3. Бабець І. Г., Полякова Ю. В., Мокій О. А. Обґрунтування напрямів розвитку інноваційного підприємництва з урахуванням світового досвіду Електрон. ресурс/ Режим доступу: URL http://niss.lviv.ua/analytics/65.htm
4. В.В.Иванов, Б.И.Петров, К.И.Плетнёв Территории высокой концентрации научно-технического потенциала в странах ЕС - Программа ЕС-TACIS. Москва – 2001 – С. 180
5. Соловйов В'ячеслав Інноваційна інфраструктура в Україні: шляхи розвитку
6. Володимир Нежиборець Венчурне інвестування в Україні: стан та перспективи Електрон. ресурс/ Режим доступу: URL http://www.ndiiv.org.ua/index.php/2009-05-25-13-09-10/266-2009-10-07-11-27-58
7. Практичний порадник державного службовця з організації регіонального співробітництва / Уклад. Л.Л. Прокопенко, О.М. Рудік, І.Д. Шумляєва. – Д.: ДРІДУ НАДУ, 2007. – Вип. 3: Регіональна політика Європейського Союзу. – 60 с.
8. Г.О. Андрощук, Р.Є. Еннан Інноваційна політика європейського союзу Наука та інновації. 2009. Т. 5. № 5. С. 85—97
9. Принципи EUREKA та інших європейських програм як чинники інноваційного розвитку України: Наук. практ. Семінар, Київ, трав. 2009 / Редкол.: Смертенко П.С. та інш. - 2009, К.: ФО-П Т.А.Кінько, 2009, 72 с.
10. Q1 2010 European Venture Financing Report http://www.dowjones.com/pressroom/SMPRs/PM/1Q10EuropeFinancing.html

CHAPTER 4.
PROBLEMS OF ENVIRONMENTAL MANAGEMENT AND ENVIRONMENTAL PROTECTION AND THEIR SOLUTIONS IN THE CONTEXT OF GLOBALIZATION AND INTEGRATION PROCESSES

DECISION MAKING UNDER THE CONDITIONS OF FUZZY INFORMATION ON THE STATES OF NATURE

Zygmunt Przybycin
Stefan Forlicz

Economics is a science studying processes of economising which consist in making choices under the conditions of insufficient amount of goods and means of production available. Therefore, economists are particularly interested in how economic entities examine the decision making activity. In the pursuit of this goal, they consider the decisions being made under various conditions, i.e. deterministic, risky, uncertain or conflicting ones[27]*. The authors of this article analyse the case of making decisions when individual states of nature are known, but the probability of their occurrence is unknown.*

1. DECISION MAKING UNDER THE CONDITIONS OF UNCERTAINTY

If a decision maker faces a situation when the probability of occurrence of individual states of the surrounding environment is unknown, the decision can be made based on one of four criteria referred to in the publications referred to:[28] the pessimistic criterion, the optimistic criterion, the Laplace criterion or the disappointment criterion.

Following the pessimistic criterion, the decision maker acts as if believing that, in every case, the nature acts against them, which means that regardless of which strategy they choose, they would still obtain the worst possible payoff. Consequently, the decision maker chooses a strategy which ensures that in the worst possible state of nature, as perceived from their perspective, the utility of their payoff would be the highest, in other words, such a strategy that guarantees payoff of the highest minimum utility (or the maximin).

On the other hand, adopting the optimistic criterion, one will choose a strategy assuming that one can obtain the maximum payoff from among all the possible ones.

The Laplace criterion is based on the assumption that if one has no knowledge on the probability of occurrence of individual environment states, one should assume them to be equally probable. In such a case, the decision to be consequently made should be one for which the expected utility of outcomes on equal probability of occurrence of all possible states of nature is the highest.

And finally the disappointment criterion is one which proposes to apply the measure of a difference between the utility of the payoff actually obtained and the utility of the payoff which may have been obtained had the state of nature which occurred been known beforehand. Therefore, one should develop what is commonly known as the disappointment matrix and only apply the pessimistic criterion with reference to it, by choosing such a strategy that ensures the largest disappointment to be minimal.

Example 1.

If the decision maker does not know the probability of occurrence of individual states of nature, then for the following matrix of payoff utility:

[27] See e.g.: Forlicz 2001.
[28] See e.g.: Miller, Starr 1971.

	X1	X2	X3
A1	100	50	0
A2	30	40	50
A3	-120	60	180

they will choose strategy **A2** while applying the pessimistic criterion, since the worst possible outcome when this decision has been made is payoff of the utility of **30**, whereas the worst outcome on the choice of decision **A1** is payoff of the utility of **0**, and on decision **A3** – payoff of the utility of **-120**. By choosing strategy **A2**, one obtains the maximum of minimal payoffs in the worst scenario. Assuming the optimistic criterion, strategy **A3** will be chosen, since it is the one which ensures the maximum utility payoff of **180**. According to the Laplace criterion, if the probability of occurrence of individual states of the surrounding environment is unknown, one should assume them to equal 1/3 and make the **A1** decision as it ensures that **U(A1) = 50**, whereas **U(A2) = 40** and **U(A3) = 40**. In order to determine the optimum strategy in terms of the disappointment criterion, one must first transform the payoff utility matrix into the following one:

	X1	X2	X3	**maximum disappointment**
A1	0	10	180	**180**
A2	70	20	130	**130**
A3	220	0	0	**220**

The minimum maximum disappointment will be experienced on the choice of strategy **A2**, consequently being the optimum one under the criterion assumed.

What criterion the decision maker will choose for the sake of optimisation of their subsequent conduct is conditional to the persons' character and disposition. It is generally assumed that, in most cases, people tend to be cautious by nature, and hence while making a decision under uncertain conditions they follow the pessimistic criterion[29].

However, the above-described pure criteria of decision making will be applied in unique situations, when one cannot additionally apply what is referred to as mixed strategies. If, however, one can make decisions multiple times under identical decision making conditions or if the available means can be distributed while making a one-time decision, they will usually obtain a better outcome by applying the mixed strategy. Such a mixed strategy can be developed by perceiving the given situation as a game against nature and following the guidelines provided in the game theory.

In order to verify whether, in the given situation, it pays to apply one pure strategy or whether it is more profitable to apply a mixed strategy, one must check if the payoff matrix contains what is referred to as the saddle point, namely such a payoff matrix component which constitutes, at the same time, the highest minimum value in each matrix line (maximin) and the lowest maximum value in the matrix columns (minimax).

If there is such a saddle point, then the best strategy is always the player's strategy corresponding to the saddle point, regardless of the nature's behaviour. If the nature departs from its optimum behaviour minimising the player's win, also resulting from the saddle point, then the player may only benefit.

[29] It is also worth stressing that, in a risky situation, when the decision is not made multiple times but only once, a person reluctant to take risk will follow the pessimistic criterion.

Example 2.

The matrix of payoff utility is as follows:

	X1	**X2**	**X3**	**minimum value in line**
A1	10	50	100	**10**
A2	100	70	90	**70***
A3	150	60	0	**0**
maximum value in column	**150**	**70***	**100**	

The maximum value among minimum values in lines equals 70, and so does its minimum value among maximum values in columns, and hence maximin = minimax. Therefore, there is an optimum pure strategy from the player's perspective, namely **A2**, since regardless of the nature's behaviour (state of environment), the decision maker will always be ensured the payoff of the utility of at least 70.

However, if the payoff utility matrix features no saddle point, then the mixed strategy will prove more beneficial than any of the pure ones.

Example 3.

Let us consider an identical payoff matrix as in the previous section:

	X1	**X2**	**X3**	**minimum value in line**
A1	100	50	0	**0**
A2	30	40	50	**30***
A3	-120	60	180	**-120**
maximum value in column	**100**	**60***	**180**	

There is no saddle point in this matrix, and hence there is no optimum pure strategy. Having applied the pure strategy of maximin, or in other words following the pessimistic criterion, only in the worst case would the player obtain an outcome of the utility of 30. However, it is possible that the player should always obtain a better outcome by applying the mixed strategy. In this case, such a prime mixed strategy for the player would be to apply strategies **A1** and **A2** at the frequencies of **1/6** and **5/6** correspondingly, and not to apply strategy **A3** at all[30]. By applying such a mixed strategy the player may count on a win of the utility of at least **41** and **2/3** regardless of the nature's behaviour. Implementation of this mixed strategy in repeatable situations consists in random application of strategies included in the optimum mixed strategy featuring appropriate probabilities, whereas in a situation when, for instance, diversification of means is possible, in dividing them under suitable proportions (e.g. dividing the capital in a manner ensuring than **1/6** of the available funds is spent to purchase securities corresponding to strategy **A1**, and the remaining **5/6** – those corresponding to strategy **A2**).

[30] The manner in which such a mixed strategy can be developed has been discussed, for instance, in *Williams 1963, Kofler 1968, Malawski, Wieczorek, Sosnowska 1997.*

2. DECISION MAKING UNDER THE CONDITIONS OF FUZZY INFORMATION

Let us now assume that the decision maker has no credible information on the states of nature, and that they only have access to fuzzy information, which means that the set of states of nature is a fuzzy set.

Hence the decision making problem is noted in the following form: < $\breve{X}$, A, U > where: $\breve{X}$ = $\mu(X_1)/X_1 + \mu(X_2)/X_2 + \ldots + \mu(X_n)/X_n$ is a fuzzy set of states of nature, $\mu(X_j)$ is a membership function of the state of nature X_j[31], whereas A= $\{A_1, A_2, \ldots A_m\}$ is a strategy set and U= $[u_{i,j}]$, i=1,2, …m; j=1,2,…,n is the utility (payoff) matrix. Having formulated the decision making problem in the foregoing manner, strategy A_i does not generate payoff $u_{i,j}$, and the said payoff is obtained to the degree set by the membership function. The solution of the < $\breve{X}$, A, U > decision making problem can be brought down to establishment of the optimum strategy or satisfactory strategies. The solution algorithm for the above decision making problem is as follows[32] ():

1. For each strategy A_i, a quasi fuzzy set of utility marked as U_i is determined based on the following formula:

$U_i = \sum(\mu(x_{j,1}) \blacksquare \ \ldots \ \blacksquare \mu(x_{j,p}))\ /u_{i,j1} = \sum v_{i,j1}/u_{i,j1}$ i= 1,2,…m. (2.1),

where the ■ symbol designates a probabilistic sum[33], and summation is conducted on all degrees of membership $v_{i,j1}$, whereas sequences of states of nature $X_{j,1}, \ldots, X_{j,p}$ assume the same utility of $u_{j,1}$.

Support U_i of the quasi fuzzy utility set is a modified i^{th} line of the U utility matrix (the modification consists in deleting from the given line the recurring components and those for which the X_j membership degree equals zero).

2. The quasi fuzzy utility set is transformed into fuzzy set $\breve{U}_i$:

$$\breve{U}_i = \sum_{suppU_i}(v_{i,j1} \wedge \frac{u_{i,j1}}{u_{max}})/ u_{i,j1} \qquad (2.2)$$

where $suppU_i$ is the U_i set support,[34] symbol ^ means the minimum operation, u_{max} = max($\cup_i suppU_i$) (hence u_{max} is the highest value in these utility matrix columns to which non-zero membership degrees of states X_i from fuzzy set $\breve{X}$ correspond).

1. Determination of the $\breve{A}$ fuzzy strategy according to the following formula:

$$\breve{A} = v(\breve{U}_1)/A_1 + v(\breve{U}_2)/A_2/A_2 + \ldots + v(\breve{U}_m)/A_m/A_m \qquad (2.3)$$

where the $v(\breve{U}_i)$ membership of strategy A_i is a weighted average of all membership degrees of fuzzy set $\breve{U}_i$.

---

[31] A finite fuzzy set is represented as a sum of pairs $\mu(x_i)/x_i$, where the first component of the pair is the membership function and the second one is the set member.

[32] Compare: Kacprzyk 1986 and £achwa 2001.

[33] The probabilistic sum is determined in the following manner: $\mu_{A \blacksquare B(x)}$= ,μ-$A(x)$.+$\mu_{B(x)}$- ,μ-$A(x)$. ,μ-$B(x)$.

[34] The fuzzy set support is determined as: supp(A)= { x: $\mu_{A(x)} > 0$ }. Therefore, the fuzzy set support is an acute set containing these members of the space (universe) which belong to the fuzzy set of non-zero membership degree.

2. Optimum strategy determination – the optimum strategy is this acute strategy for which the membership function attains its maximum value. In formal terms, the optimum strategy is given by the following formula:

$$A^* = A_i \text{ for which } v(\breve{U}_i) = \max\{ v(\breve{U}_1), \dots, v(\breve{U}_m) \}. \quad (2.4)$$

It may happen that the optimum strategy is not explicitly determined. This is the case when there is more than one strategy having the same maximum value of the membership function or when these values are close the maximum value, when it is proposed that the solution to be adopted should be the satisfactory strategies, i.e. such acute strategies whose acute utility is higher than the threshold value assumed

The solution algorithm for the decision making problem assuming fuzzy information on the states of nature has been illustrated in example 4.

Example 4. An investor is to make a choice between shares of three companies. The rates of return on the shares analysed depend on the market standing. The relevant market information has been provided in the following table.

Market state	X_1	X_2	X_3	X_4	X_5
Share no.					
A_1	-3.2	1.0	5.1	10.1	11.4
A_2	0.2	9.2	7.0	9.3	9.5
A_3	-11.0	15.0	6.2	0.0	7.5

The market standing is established by fuzzy set $\breve{X}$, where:

$$\breve{X} = 0/X_1 + 0.3/X_2 + 0.7/X_3 + 0.2/X_4 + 0.1/X_5$$

The investor's optimum strategy (choice of shares) is to be determined according to the following algorithm

1. Based on formula (2.1), one determines quasi fuzzy utilities for shares A_i:

$U_1 = 0.3/1.0 + 0.7/5.1 + 0.2/10.1 + 0.1/11.4$

$U_2 = 0.3/9.2 + 0.7/7.0 + 0.2/9.3 + 0.1/9.5$

$U_3 = 0.3/15.0 + 0.7/6.2 + 0.2/0.0 + 0.1/7.5$

2. Based on formula (2.2), one determines fuzzy utilities:

$\breve{U}_1$ = 0.3^ 0.07/1.0 +0.7^ 0.34/5.1 +0.2^ 0.67/10.1 + 0.1^0.76/11.4 = 0.07/1.0 + 0.34/5.1 + 0.2/10.1 + 0.1/11.4

$\breve{U}_2$= 0.3/9.2 + 0.47/7.0 +0.2/ 9.3 + 0.1/9.5

$\breve{U}_3$ = 0.3/15 + 0.41/6.7 + 0/0.0 + 0.1/7.5

Based on table 2.1, u_{max} is determined to equal 15.

3. The fuzzy strategy is established according to formula (2.3).

$\breve{A}$ = 0.18/A_1 +0.26/A_2 +0.20/A_3, and the degrees of membership $v(\breve{U}_i)$ have been determined assuming equal weights.

4. Consequently, the investor's optimum strategy is to purchase shares A_2.

One should definitely also note that the minimax strategy for the utility matrix without the first column leads to the same solution.

The authors of the article have discussed the manner in which decisions are made when the only information concerning the states of nature one may rely on is fuzzy. In the next stage of the authors' considerations, they are to analyse a case when one has no piece of additional information on the states of nature (not even a fuzzy one) and the information on the payoff value is fuzzy.

REFERENCES

1. Drewniak J. (1984), *Podstawy teorii zbiorów rozmytych*, Uniwersytet Śląski.
2. Forlicz S. (2001), *Niedoskonała wiedza podmiotów rynkowych*, Wydawnictwo Naukowe PWN, Warsaw.
3. Kacprzyk J. (1986), *Zbiory rozmyte w analizie systemowej*.
4. Kofler E. (1968), *Wstęp do teorii gier*, PZWS, Warsaw.
5. Łachwa A. (2001), *Rozmyty świat zbiorów, liczb, faktów, reguł i decyzji*, AOW EXIT.
6. Malawski M., Wieczorek A., Sosnowska H. (1997), *Konkurencja i kooperacja. Teoria gier w ekonomii i naukach społecznych*, PWN, Warsaw.
7. Miller D.W., Starr M.K. (1971), *Praktyka i teoria decyzji*, PWN, Warsaw.
8. Piegat A. (1999), *Modelowanie i sterowanie rozmyte*, AOW EXIT.
9. Przybycin Z. (2009), *Zarządzanie ryzykiem inwestycji kapitałowych w warunkach nieostrych informacji – VaR rozmyty*, Scientific Booklets of the University of Economics in Katowice.
10. Williams J.D. (1965), *Strateg doskonały. Wprowadzenie do teorii gier*, PWN, Warsaw.

THE INTERNATIONAL EXPERIENCE OF TAKING INTO ACCOUNT ENVIRONMENTAL ISSUES OF INVESTMENT AND INNOVATION ACTIVITY

Artem Bardas, Olexandra Tymoshenko

It is examined that complications of geological conditions of natural resources extraction such as energy, requires significant capital investment. It is determined that rapid investment growth is especially inherent to developing countries. It is noted that environmental constraints limit the extensive economic growth. The rationality of investment projects implementation that will increase the level of ecological production of shale gas and oil is proved. It is examined out that the realization of innovative progress achievements carried out through the investment process, but the system of effective innovation management at mining enterprises has not been generated so conditions of innovation remains are unsatisfactory.

INTRODUCTION

The increase of anthropogenic impact on the environment is a result of poor solving of environmental problems, increasing capacity excludes the possible consequences for the environment, lack of effective economic instruments, and lack of attention to the management of conservation both in Ukraine and in the world.

Reducing the anthropogenic impact on the environment while maintaining production capacity can be realized through integrated ecological production processes in all industries, especially mining. Ecologization of production depends on greening of its separate components, the most important of which are technological solutions. Environmental imperfection technical equipment and technology is one of the main reasons for eco-destructive impact on the environment. Solving environmental issues through environmental activities in conditions of outdated technologies requires a significant investment and does not lead to the desired results. So, the ecologization strategy of production should be based on the implementation of new technologies with low natural-capacity and little waste.

For most of existing industries, especially mining - extractive direction, the use of innovation was not the main factor of development. To satisfy the demand of innovation that

has affected, an effective mechanism must be created that will allow this sector of economy to explore technological innovations - today this is the one of the most important tasks. So, the purpose of this research is the theoretical foundation and study of the world experience in solving environmental problems in terms of investment and innovation. The introduction of innovative mechanisms at micro and macro level will lead to positive impact on competitiveness of mining industry enterprises.

INNOVATIVE SOLUTION OF ENVIRONMENTAL PROBLEMS

Despite the fact that the concept of innovation is very complex, innovative process is a practical science that you can explore, learn and manage. This is confirmed by The Haas School of Business at the University of California at Berkeley that was concentrating on innovation management [1].

After all, the United States still leads in innovation. Whether it is by traditional measures, like spending on research and the number of patents registered, or less tangible but more important ones, like the number of entrepreneurial start-ups, levels of venture-capital funding or the payback from new inventions, America is invariably at the top of the league. Indeed, the Council on Competitiveness recently concluded in a report that, by and large, the outlook is bright for America.

In an age of mass innovation the world may even find profitable ways to deliver solutions to the 21st century's greatest needs, including sustainable clean energy, reducing the anthropogenic impact on the environment, and new resource saving and low-waste technologies. The one natural resource that the world has left in infinite quantity is human ingenuity [2].

ENVIRONMENTAL ASPECTS OF INVESTMENTS IN THE PRODUCTION OF DIFFERENT ENERGY

The main environmental directions of investments in the world are determined, first of all, as the priority research. Many of scientific developments are connected with the prevention of global warming.

In general, this phenomenon is not based on the quality of data, but on the fact that there was a little ice age from about 15 to 19 century. It is not surprising that the temperature now rises, because we have already emerged from this period. At the same time the moment of transition from a period of cooling in the current era is matched with the beginning of the industrial era, which was accompanied by emissions of greenhouse gases.

A recent study of a wide variety of policy options by Yale economist William Nordhaus showed that nearly the highest benefit-to-cost ratio is achieved for a policy that allows 50 more years of economic growth unimpeded by greenhouse gas controls. This would be especially beneficial to the less-developed parts of the world. It is necessary to support rational measures to protect and improve our environment, but it makes no sense at all to back expensive programs that divert resources from real needs [3].

Europe has already has an upper limit for emissions that is designed to be an obstacle for polluting fuels, such as coal. The use of coal for electricity production leads to increasing of greenhouse gases. That's why oil or natural gas is used, but coal is cheaper. In countries where there is no limit on emissions and where demand for power is growing rapidly, such as India and China, coal "is thriving." Every week in China appears a new power plant working on coal. In Europe, several powerful companies building new power plants that will run on coal, despite the fact that each ton of carbon dioxide that they emit will require special written permission [4].

China has become a net importer of coal this year. During the past 20 years imports of India increased continuously. The International Energy Agency predicts that the demand for

coal will rise by 2.2% per year by 2030 – that is faster than the demand for oil and natural gas. The largest exporters of coal are mining enterprises of Indonesia and Australia that are developing deposits as fast as it can be [4].

As for production of such energy source like oil, the recent years it is become widely discussed the issue of an alternative to Arab oil fields. This is because the Arab countries are often threatened to use its "oil weapon" - huge reserves of oil deposits.

According to the innovative approach of Harold Vinegar, heated rods are inserted underground into the shale, releasing from it natural gas and light liquids. The natural gas provides the project's need for heat; the light liquids are easily refined into high-value jet fuel, diesel and naphtha. The new bottom line: oil at a highly profitable cost of about $35-$40 a barrel and an exceedingly low environmental footprint. Vinegar's process produces greenhouse gas emissions less than half that from conventional oil wells and, unlike open pit mining, does not consume water. This way the greening of production processes in the extraction of shale oil is carried out [5].

Our civilization is based on cheap energy stocks. The economic rise of countries will inevitably lead to a sharp and sustained increase of energy demand for decades. In these conditions gas has the great importance.

Despite the fact that some innovations appeared in the 1970s, large-scale production of gas from shale deposits began only after experiments Mitchell Energy and Construction Corporation (Mitchell Energy and Development Corporation) in the 1980s and 1990s, which allowed to start a commercial extraction of deep laying shale gas deposit in Barnett, Texas. By now the development of shale gas fields has changed the rules of the natural gas market in the USA.

The new activity has increased dry shale gas production in the U.S. from 0.39tn cubic feet in 2000 to 4.8tn cubic feet in 2010, or 23 per cent of U.S. dry gas production (Fig. 1). Vastly more is to come. The EIA estimates 860tn cubic feet of "technically recoverable" U.S. shale gas against just 273tn cubic feet in today's "proved reserves." If this estimate is correct, shale gas on its own would give the U.S. 40 years of gas consumption, at current rates.

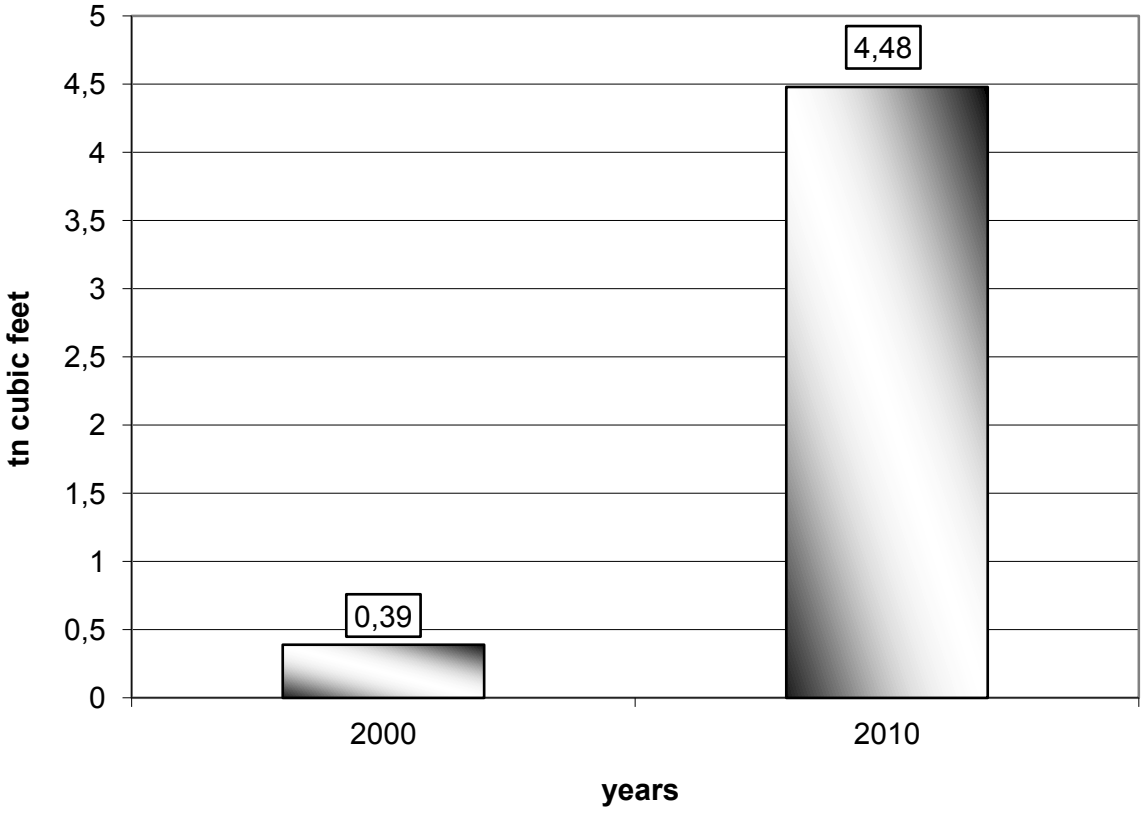


Fig. 1. The dynamics of dry shale gas production in the U.S.

The EIA asked consultants to examine 48 shale gas basins in 32 countries. Their report estimates “technically recoverable” global shale gas resources at 6,600tn cubic feet, roughly equal to today’s proved reserves. The largest identified resources, apart from those of the U.S., are in China, Argentina, Mexico, South Africa, Canada, Libya, Algeria, Brazil, Poland and France (Fig. 2). Regions excluded from this analysis include Russia, central Asia, the Middle East, south- east Asia and central Africa. Global potential should be far larger still.

In World Energy Outlook for 2011, prepared by the IEA, said that "among of the all analyzed case scenarios, the share of natural gas in the aggregate of energy resources used in the world as of 2035 is much higher than it is now." Within the scenario of the "golden age" the gas demand will grow by 2% per year from 2009 to 2035 years. Even more careful script "new policies" the demand will increase by 1.7% per year and for a specified period will increase by 55%.

As a result, gas will replace other sources of energy, particularly in the production of electricity and heat. Gas also has great potential as a transport fuel. In general, according to BP, represented in the latest Energy Outlook, by 2030 gas will seriously compete with coal and oil for being the main sources of energy.

In terms of the problem of the greenhouse effect and emissions to the atmosphere, replacing oil and coal to gas would be desirable. Emissions of combustion gas are half the emissions of carbon dioxide by burning coal and 70% of the emissions from the burning of oil per unit of energy produced. In addition, the sulfur emissions are generally negligible.

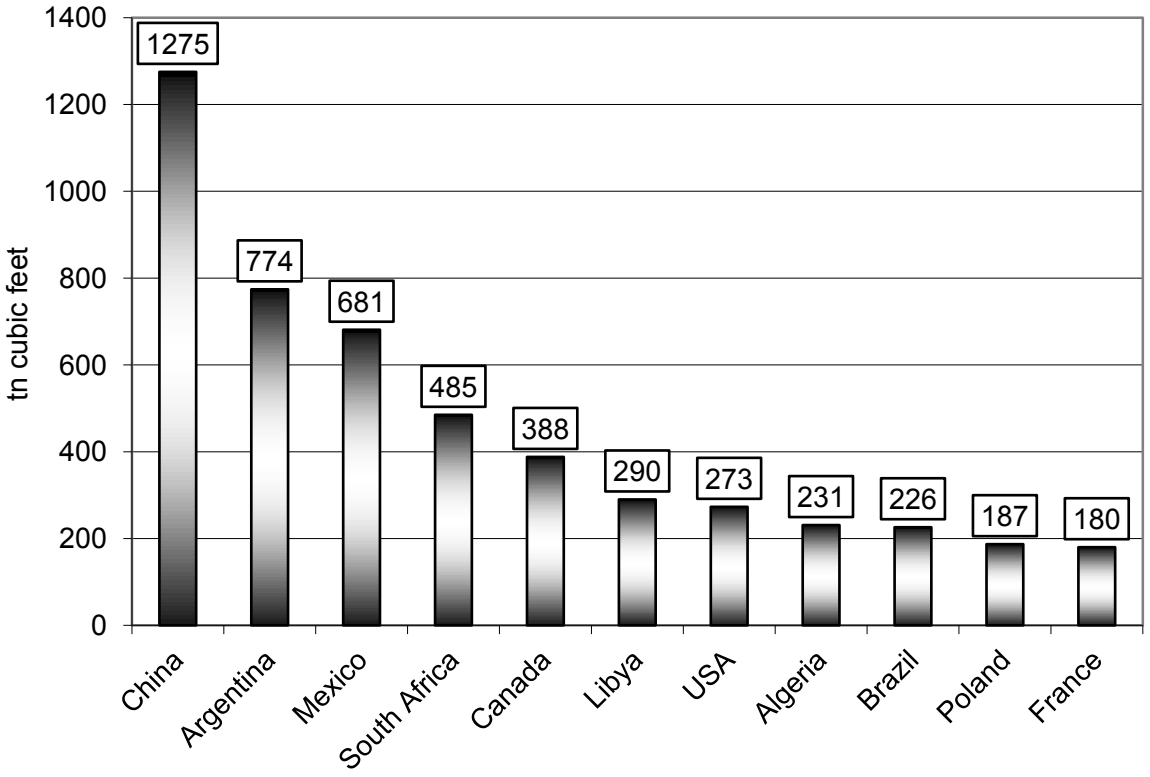


Fig. 2. Global shale gas resources

In any scenario that involves the reduction of harmful emissions will increase the share of natural gas consumption by reducing other energy sources, although the development of cheap methods of extraction and storage of carbon also increase the attractiveness of coal.

ECOLOGICAL AND ECONOMIC ASPECTS OF INNOVATIVE TECHNOLOGIES IN MINING OF MINERAL RESOURCES

The controversial aspect of the new technologies is the influence on the environment. In an article in the November 2011 Scientific American, Chris Mooney, a writer on science, notes that "horizontal fracking requires enormous volumes of water and chemicals. Huge ponds or tanks are also needed to store the chemically laden 'flowback water' that comes back up the hole after wells have been fractured."

It is little wonder critics allege the new technology threatens severe pollution of groundwater and is, for this reason, an environmental nightmare. The article suggests it is not yet known whether such contamination has occurred. At this stage, it concludes, risks are uncertain. The activities of the new industry need to be rigorously monitored, everywhere.

The wisdom of proceeding rapidly with this technology globally will depend on several considerations: first, the local opportunity costs of water; second, the abilities and reliability of the operators; third, the capacity of the regulators; fourth, the benefits of any extra gas, compared with those of alternative fuels (or conservation), including for security; and, fifth, better knowledge of the impact of the technologies. To take one example, the competing demand for water and dangers of pollution might make large-scale extraction of gas from Chinese shales dangerous.

Shale gas is a new source of energy. It also suggests the welcome possibility of cheap natural gas for many decades. But care needs to be taken over how – and how swiftly – the technology is introduced: environmental costs might prove heavy. "Make haste slowly," as the ancient Romans used to say.[6].

Natural gas has always been versatile, efficient and clean — and now it is also very cheap. As Eni CEO Paolo Scaroni explains, this is why it will play an increasingly important part in the world's energy future. However, he warns that cheap gas is causing investment in production and infrastructure to more or less dry up — a trend that must be reversed in the coming years.

On the supply side, Europe was almost exclusively served by domestic production and a small number of gas producing countries — Russia, Norway, Algeria and Libya — which were linked to us via pipelines and long-term oil-linked take-or-pay contracts. Gas has always been versatile, efficient and clean. And now it is also very cheap. That is why it will play an increasingly important part in our energy future.

On the one hand, global demand has collapsed owing to the recession: In Europe, gas consumption decreased by around 6% in 2009. On the other, the shale gas revolution in the United States has extinguished the need to import gas into North America, freeing up a lot of supply for the rest of the world. Liquefied natural gas (LNG) cargoes which used to make straight for the United States have now changed route and are sailing into Europe and Asia. The collapse in demand and the increase in supply has had a huge effect on prices.

But gas demand growth is also a secular trend. Gas is by far the cleanest fossil fuel, emitting 50% less CO2 than coal and 30% less than oil when used to generate one kilowatt hour of electricity. That means that gas is currently the best way we have of combining economic development and environmental preservation — including tackling climate change.

As well as being the cleanest fossil fuel, gas is now even cheaper relative to oil and coal. Historically, a barrel of oil equivalent (i.e., a quantity of gas which contains the same amount of energy as a barrel of oil) used to cost 70% of a barrel of oil. This year, spot gas has traded as low as 30% of the price of oil.

While cheap gas is good news for the economy and for the environment, it is also having an impact on supply, causing investment in production and infrastructure to more or less dry up.

If gas continues to be so cheap, it could even take a significant share of the transport market. There is certainly room for growth. Today, natural gas vehicles account for only around 1% of the vehicles in the world.

But while cheap gas is good news for the economy and for the environment, we must be aware that it is also having an impact on supply, causing investment in production and infrastructure to more or less dry up. Gas projects are being postponed all along the value chain. [7].

Europe should continue to invest in new gas supply sources, in new transport infrastructure to diversify transit routes and in interconnecting European countries. In terms of diversifying supply sources, the biggest opportunity for Europe is the Caspian region and the huge gas reserves in countries like Kazakhstan and Turkmenistan. Any is involved in both these countries, with giant projects in Kazakhstan. In Turkmenistan, where we are the only large international oil company, we are in discussions about using our gas competences to transport gas from Turkmenbashi, across the Caspian Sea, to Baku in Azerbaijan.

To go a long way towards solving the supply security issue there is one thing that Europe can do, by itself: ensuring the sufficient interconnections among member states. The real threat to Europe's supply security is no longer Russia. Today, Russian gas represents only 35% of our overall imports, compared to 75% in 1990. But the figure of 35% for the EU as a whole masks very different, underlying situations. The lack of interconnections among European member states means that, should Russian gas be unavailable, some of these countries would be left in the cold while others would be unable to come to their rescue.

The real priority for the European Commission should be to link energy companies and to promote a flexible and integrated network of European gas and power links which would yield real benefits for the continent's consumers.[8].

CONCLUSION

Complications of geological conditions of natural resources extraction such as energy, requires significant capital investment. It is founded that the rapid investment growth is especially typical for developing countries. Environmental restrictions limit the extensive economic growth. The danger of industrial accidents rises. This is due to the depreciation of the industrial and cleaning equipment.

The rationality implementation of investment projects that will increase the level of ecological production of shale gas and oil is proved. The impact of new technologies in mining should be carefully monitored.

A very important task is raised before the economic science - the automatic implementation of innovative achievements progress should be developed and maintained in coordination with the changing conditions through the investment process. An integrated system of effective innovation management at mining enterprises is not generated so conditions of innovation remains unsatisfactory.

REFERENCES

1. A dark art no more. The Economist [from PRINT EDITION]. Posted on Oct 11th 2007. Available at: http://www.economist.com/node/9928239?story_id=9928239.

2. The age of mass innovation. The Economist [from PRINT EDITION]. Posted on Oct 11th 2007 by Noma Bar. Available at: http://www.economist.com/node/9928291 ?story_id=9928291

3. No Need to Panic About Global Warming. The Wall Street Journal [online]. Posted on January 27, 2012 by Steve Milloy. Available at: http:// chimalaya.org/2012/01/27/no-need-to-panic-about-global-warming/.

4. Still going strong. The Economist [From print edition]. Posted on Nov 15th 2007. Available at: http://www.economist.com/node/10145492?story_id=10145492

5. Israel's new energy. Financial Post [online]. Posted by Lawrence Solomon Jun 10, 2011. Available at: http://opinion.financialpost.com/2011/06/10/israels-new-energy/.

6. Prepare for ‘a golden age of gas. The Financial Times (2012) [online]. Posted on Tue, Feb 21, 2012, 8:06 pm by Martin Wolf. Available at: http:// www.ipolitics.ca/2012/02/21/prepare-for-a-golden-age-of-gas/.

7. Natural Gas and International Relations (part 2). The Globalist [online]. Posted by Paolo Scaroni | Thursday, August 12, 2010.

Available at: http://www. theglobalist.com/StoryId.aspx?StoryId=8565.

8. Natural Gas and International Relations (Part 1). The Globalist [online]. Posted by Paolo Scaroni | Wednesday, August 11, 2010.

Available at: http://www. theglobalist.com/StoryId.aspx?StoryId=8564.

ATTRACTIVE TECHNOLOGICAL AND ECONOMIC ASPECTS OF UKRAINIAN COAL PRODUCTION DEVELOPMENT

Vasul Prokopenko,
Anna Kyrychenko

Having in mind Ukrainian experience in innovation activity with dramatically insufficient output of science-intensive products, and basing on examples from developed countries of the world the authors have analyzed favorable possibilities to realize innovative development of Ukrainian economy with the help of “strategy of the borrowed knowledge”. The article shows economic effectiveness and promising aspects of technological upgrading of engineering environment in Ukrainian mines by own efforts of the mining operators through implementation of available innovative models of the roadway supports.

INTRODUCTION

Today about 90% of Ukrainian products are manufactured with no state-of-the-art scientific basis. Research departments in the factories have been shortened by quarter in number. A great majority of industrial enterprises are impetuously reducing their innovative activity. Totally 6.5% of all sold products can be classified as innovative and only by some characteristics, though in European Union this figure exceeds 60% [1]. Growth of Ukrainian GDP at the expense of introduced up-to-date practices is 0.5 – 0.7% if compare with 60-90% in developed countries of the world.

Among the most critical problems, manufacturers consider lack of own funds (80% of respondents) and great expenses needed for innovations (57%) as well as insufficient financial support of government (54%) and high level of risks (41%). However, the author believe that the above mentioned prime problem – lack of own funds – is actually a consequence of the fact that national industries produce out-of-date products that consumers are not eager to buy.

Law of Ukraine [7] “About First-Priority Fields for Innovative Activity” lists 41 fields of national economy starting from space-rocket hardware and aeronautic engineering and ending with technologies to preserve agricultural products to which Ukrainian government will set the greatest store and, consequently, will allocate budgetary funds. To compare, this year Russians have compiled a list of their scientific priorities that accounts only eight positions, and in Germany such list includes totally five items. From all world-known structures involved into innovative activity only technological parks are available in Ukraine to this or that extent. These parks have produced science-intensive products in amount of USD 1.5 billion and created 3 000 new working places, and this is tens times less than certain technological parks in China or India.

Fingers of two hands are enough to count business-incubators in Ukraine that operate by classic scheme. No systems for financial support and no legislative mechanisms of innovation processes have been created up to now in the country. Only one from three enterprises that devote

their certain efforts to innovations sells their products abroad. It means that two from three innovations are not recognized by other countries as a high-technological product.

Situation with advanced technological practices is even worth. According to official statistics, in 2004 only three technologies were sold (by two companies) abroad and no one last year. Selling of up-to-date technologies inside the country is also not impressive: eight designers have sold 16 advanced practices.

Today among the key factors threatened to innovative safety of Ukrainian coal-producing industry we should mention a poorly developed infrastructure for sharing advanced technologies, growing dependence on imported science-intensive goods and unsatisfactory informational support. As for the coal production technology and economy, all above mentioned problems could be successfully solved today with no essential time and money consumption if basing on available national scientific and technological support. This article focuses attention exactly on these target tasks: to generalize scientifically existing thoughts and opinions concerning strategy of the coal production development; to choose a priority model for the industry economic growth; and to establish proper approaches to improve informational safety of the industry.

1. FORMULATION OF THE TASK

Technical innovations are one of the most important instruments that can raise economic effectiveness and improve competitive strength of the coal mines through realization of the following innovation basic components [2]:

– to provide high level of qualification and purposeful training of personnel in order to gain universal knowledge of how a mine operates;

– to choose optimal scheme for secondary workings with taking into account concrete geological conditions and technical characteristics of equipment;

– to introduce advanced and economically highly effective practices for preparatory operations in the mines.

The coal industry is one of the oldest fields of economy and still will be among the main suppliers of primary inputs and energetic resources [3]. The industry differs from all other fuel-producing industries by variety and complexity of conditions that could involve a great number of different technological practices and equipment. Continuous improvement of machineries (mainly safety and reliability of the equipment) and practices of the coal mining is an indispensable condition for successful development of the coal industry.

During the last decades, processes of production concentration were intensified, productivity of work was increased, coal quality was improved, capacity and reliability of equipment were upgraded in leading coal-producing countries of the world resulting in less uninterrupted operations and improved labour conditions and safety.

Analysis of strategic measures that have been taken in the coal industries of Great Britain, Germany and Poland in order to exit from the crisis shows that principle of effective operation of up-to-date machinery and technologies was in the heart of the processes of their production concentration and underground production intensification. In these countries, technological practices were continuously oriented to utilization of full potential of state-of-the art machineries, and, at the same time, the machineries were continuously improved to be maximally adapted to specific mining, geological and technical conditions of concrete mines.

Condition of the Ukrainian coal industry is still unsatisfactory in spite of the fact that the country has managed to stabilize annual coal output at the level of 80 million tons. The critical state of the industry is explained by two key factors: difficult mining and geological conditions for developing the coal reserves and obsolete mine facilities caused by funds chronically not allocated in a volume needed for capital reconstruction and modernization of production. Privatization is in process, and majority of the mines are still public.

Following the above mentioned, the authors have considered concrete approaches worked out by researchers and manufacturers of the industry that concern opportunities of Ukraine to

realize innovative development of national economy basing on a "strategy of the borrowed knowledge". A many-sided estimation of this strategy was made by I. Egorov, O. Popovych and V. Soloviov in their work [4] and supported by the Governmental Fund for Fundamental Researches of Ukraine. The authors analyze different models of economic growth and role of science and technology in these processes in various countries. This analysis is an evidence of the fact that a key factor of success is harmonization of all aspects of industrial, social, scientific and technological policies.

Orientation to the "strategy of the borrowed knowledge", i.e. focusing of national production mainly on applying of up-to-date practices worked out in other countries of the world is much more difficult process as it could be thought on the face of it. Thus, in this article we are setting more store on the issue: what exactly and to what extent it is necessary to borrow knowledge today.

2. RESULTS

Advocates of strategy of maximal orientation to the foreign experience often mention Japan and new industrial countries as an example and, as a rule, direct our attention to the aspects that are evidence in favour of policy of borrowing. However, addressing to Japan and South Korea the strategy of borrowings advocates neglect that fact that both countries had to buy licenses for foreign technological products due to the lack of own technologies and, at the same time, they were and are intensively increasing their scientific and technical potential [4]. In 70s of the last century, when this strategy was mostly presented in policy of Japan this country each year invested additionally 6.4% of funds into science, and after less than 10 years the allocated funds had reached 2.2% of national GDP. Reformation of technological structure of economy was impossible in the country without own research and technological potential. So, beginning from 80s, government of Japan always keeps the emphasis on necessity to increase financial support of fundamental researches and to actively prepare specialists. During 90s, total number of research institutions in the Science and Technology Agency of Japan was doubled.

During 1971-1988, South Korea was increasing funds spent on science 6 times quicker than gross domestic product was growing [4]. It should be noted that expenditures of private sector of Korean economy on scientific researches and projects during this period of time was increased 16 times quicker than the national GDP.

During the last decades such not great Asian countries as Taiwan, Singapore and Hong Kong demonstrate a phenomenal progress of their economies. These countries, in spite of their different initial specialization in the world market, step-by-step moved from manufacture of technically simple products towards hi-tech goods with much greater additional value. Priorities of researches and developments (RED) were declared at the highest governmental levels and were realized by government programs of economic, scientific and technical development.

Licenses for the best practices were intensively bought; but at the same time part of the GDP that was invested by Taiwan, Singapore and Hong Kong (as well as South Korea) to develop own science was 3 – 5 times increased during the period 1980-2000. Such policy on development of own researching sector could not but give positive results – within this period of time number of patents that were registered in these countries was 3 - 6 times more than during the previous 20 years, while number of patents received by residents of other countries shows stable tendency to reduction. Increased number of authors from South Korea and Taiwan published their works in the USA during the last twenty years is really impressive: 100 times - for authors from South Korea and about 70 times - for authors from Taiwan.

The most important feature of all mentioned countries is high and trending to further growing level of population education especially in the field of technical and natural sciences. In South Korea it has been grown by almost 4 times.

Thus, we can conclude that all new industrial countries intensively realize a policy that focuses on creation of own developed scientific and technical potential able not only to receive and

adapt some borrowed foreign advanced practices and innovations but also generate own innovative technologies with very high economic results after their implementation. It means that "strategy of borrowings" was just an episode in the long-term innovation policy in these countries, a step that is justified by initial weakness of their national scientific and technological potential.

One more example of successful economy modernization on the basis of scientific and technological achievements is Ireland. The country demonstrates high rates of economic growth: more than 5% in average in 1985 – 2000. To meet competition at the world market, Ireland adopted a strategy of European integration. The most important elements of this strategy are participation in EU projects and programs on regional development and focusing on scientific and technological factors of the modernization. But above all these, the key component of the governmental innovation policy the government considers essential strengthening of the Irish national science and research system as only with the help of this instrument it is possible for the country to provide adaptation of technological innovations in its economy. The result is that expenditures of Ireland on the RED actually have reached average figures in the EU, i.e. about 2% of national DGP. Special attention the government draws to financing of priority researches.

Thus, none of the above mentioned countries that successfully used foreign scientific and technological developments to innovate their own economies never did it at the account of destruction of their national scientific potential [4]. All of them proceeded from the understanding that no real breakthrough is possible without development of national science. Studies [5] show that countries that have no own developed scientific basis face essentially more difficulties with assimilation of revolutionary technologies and innovative achievements of the world contemporary science.

We could continue to analyze all possible strategies on innovating development of economies but today it is much more important to recognize that Ukraine still has a needed potential and every prospects to make order in own home and to be a welcome visitor in somebody else's homes without any help from outside [4]. Because all criteria needed for putting the order in the country have been already determined and stated in a lot of legislative and normative documents though they do not work in real life. It is absolutely obvious that to sort out which issues have already been worked out and to put them in good order in a one strategy is not just simpler but also less risqué than to begin with "turning over a new leaf". Today the most important task is to unite efforts not of situational but of proved professionals who are aware of true contradictioness of the present situation, have own proposals of how to eliminate these contradictions, and who are ready to creatively cooperate to reach the end point – innovative economy.

In the present conditions of scientific innovative development of industrial infrastructure of Ukrainian economy a problem of renovating and strengthening of technological component of production process in the coal industry is the most important as this branch features high intellectual potential of researchers and engineers and highly qualified labour resources that have been prepared for work in hi-tech productions. Besides, today our financial-industrial holdings orient to innovative development, and some mines have already their own scientific, researching and technological developments based on strong engineering school.

Continuous improvement (safety and reliability in the first place) of machinery and coal-mining practices is necessitated for successful development of the coal mines. In judgment of O. Ruban [6], a contrast between obsolete technological level of the coal production and high innovative potential of researching sector is especially striking in Donbass. In average today's output of the longway faces is 800 t/day in Ukraine. The weakest link that should provide proper reliability and resource parameters for highly technological organization of secondary workings is designing and introduction of coaling plants of new technical generation. First of all, it is necessary to improve mechanized facilities for mining operations and for keeping the roadways in an operating state. Great depth of the coal bedding plus complicated mining conditions for the roadway driving lead to lost stability even of preparatory roadways, gateroads, slops, passways, etc. in the Donbass mines requiring repairs as earlier as at the drivage stage, i.e. far long before the mining.

Traditional supports of old type are characterized by working resistance and flexibility that are too weak to ensure proper stability for the mine tunnels at big depths. Their stability in such conditions can be provided only by absolutely new main structural elements of supporting frame and new practice of the support setting as a whole. Such approach attracts great interest to supporting facilities for the underground mine tunnels and stimulates innovating activity of the coal mines. And this is a pressing problem for our country both from theoretical and practical points of view.

Achieving of high working resistance of the mine supports is possible only with the help of new types of supporting frames, new materials, additional strengthening of arch frame provided by new-type supporting, and a set of technological measures. For example, preparation and development of a working horizon with the help of arch supports КМП – А5С – 18,6 essentially improved condition of the gateroad and made possible to refuse from re-setting of support until the gateroad extinction. Rejected operation on arranging of machine stables has increased daily output of the logway up to 2300 … 2800 t. Totally, no-stable mining practice used instead of standard technology gives a raise of monthly output and reduces expenditures by 2 … 3 times (see Table 1.1).

Table 1.1

Expenditures on driving and repair operations with different types of supports, UAH/r.m

Pos.	Expenditures	A.G.Stakhanov Mine				A.F.Zasyadko Mine	
		Gateroad		Boundary passway		Gateroad	Gateroad
		АП3-15,5	КМП А3 Р2	АП3-15,5	КМП А3 Р2	АП3-18,3	КМП А5С-18,7
I.	**Operations**						
1.	Support setting	2210	1440	2210	2030	1944	2542
2.	Cost of supporting	168	126	217	176	65	86
II.	**Support maintenance**						
1.	Resetting of supports	5211	564	2320	0	4360	282
2.	Undermining of the floor						
	up to 1200 mm					510	0
	up to 1000 mm	836	836	886	886	370	400
	up to 500 mm	214	214	0	0	148	148
3.	Cost of new supports for re-setting	2210	241	740	0	1302	0
III.	**Totally, incl:**	**10849**	**3421**	**6373**	**3092**	**8699**	**3458**
1.	Setting of supports: I(1+2)+II(3)	4588	1807	3167	2206	3311	2628
2.	Maintenance and repair: II (1+2)	6261	1614	3206	886	5388	830

“Geomehanika” Zapadno-Donbassky Research-and-Production Center (Pavlograd, Dnepropetrovsk region, Ukraine) designs various models of the steel supports of new technical level that advantageously differ from those that are widely used today. Design of these new models is based on scientific achievements with legislative validation that orient to further development and governmental support of national science. Supports of the Geomechanics type and design ensure:

1) longer stability of the mine tunnels and, consequently, more productive and economical operation of the coal mines;

2) reduced costs to produce 1 t of coal;

3) faster rates of preparatory development for coal mining and transportation from the longway face;

4) reduced costs of maintenance and repair of the roadways that service mining districts;

Let's consider each of the above mentioned effects of innovative activity of the mine and total outcome resulted from innovative technical facilities used to strengthen mine tunnels and improve labour conditions in this or that district of the roadway.

When estimating innovation effectiveness the following aspects should be considered. Chosen supports and their setting could be not expensive; however, their repair during the operation could require great expenditures. Or, on the contrary, support setting as one of operations of preparatory development could cost big money but in future the installed supports would be rarely damaged and, thus, would not require essential funds for their repair. Thus, when making decision on choosing supports of the new technical level (the NTL supports) it is necessary to take into consideration not only primary expenditures on strengthening the mine tunnels when the supports are set but future expenditures on maintaining the installed supports in a stable state as well.

If a new support improves stability of the mine tunnel then intensity of failures r of the support and time period t_p needed to repair this support are reduced. Volume of the coal production $O_в$ grows in direct proportion to reduction of the failure intensity and time period needed for the repair. In this case the following equation:

$$\frac{O_{в.н}}{O_{в.т}} = \frac{\left(T_{р.в} - r_{в.н} \times t_{р.н}\right)}{\left(T_{р.в} - r_{в.т} \times t_{р.т}\right)}, \quad (1)$$

operates where $O_{в.н}, O_{в.т}$ are a coal output, t/m, with the NTL supports and traditional supports, correspondingly;

T_p is a fund of working time for the coal mining and transporting, h/month;

$r_{в.н}$, $r_{в.т}$ are failure intensity for new and traditional supports, correspondingly, in operation, month^{-1};

$t_{р.н}$, $t_{р.т}$ are time periods to repair, hours per frame, with the NTL supports and traditional supports, correspondingly.

If to accept that coal production increases in direct proportion to the time needed to transport the coal along the mine tunnels then the equation (1) is correct for relative increase of the coal production. Let's designate this increase by coefficient $K_о$. Then volume of the coal production depends on transporting capacity of the mine tunnels (longways, crosscuts, etc.) and can be expressed by the following formula:

$$O_{в.н} = K_о \times O_{в.т}, \text{ t/month} \quad (2)$$

If to use the innovative supports then prime cost of the coal production and transportation is equal to:

$$C_{в.н} = V_{в.н} + \frac{H_{в.н}}{O_{в.т} \times K_о}, \text{ UAH/t,} \quad (3)$$

where $V_{в.н}, H_{в.н}$ are variable expenses and summarized fixed expenses, UAH/t, correspondently, to produce and transport coal when the mine tunnel is supported by the NTL supports.

According to formula (3), calculation of the costs within one mining district assumes changes of both variable and fixed costs due to the implementation of the new supporting model. Reduction of production cost thanks to the increased coal output is a difference between:

$$\Delta B_{о.в} = B_{о.т} - B_{о.н}, \text{ UAH/month,} \quad (4)$$

where $B_{о.т,} B_{о.н}$ are expenditures on the coal production and transportation to the mine shaft at supporting with the new and traditional supports, correspondingly, UAH/month.

So, we use equation (3) and receive:

$$B_{о.т} = V_{в.т} \times O_{в.т} \times K_о + H_{в.т}; \quad (5)$$

$$B_{о.н} = V_{в.н} \times O_{в.н} \times K_о + H_{в.н}. \quad (6)$$

Difference between values of $B_{o.m}$ and $B_{o.н}$ calculated by the equations (5) and (6) allows us to determine possible reduction of production expenses due to the more productive and more economical operation of the mining district in conditions of stable state of the mine tunnels. This reduction can be as big as:

$$\Delta B_m = (V_{в.m} - V_{в.н}) \times O_{в.m} \times K_o + (H_{в.m} - H_{в.н}), \text{ UAH/month} \quad (7)$$

If speed of the tunnel driving grows from V_m to $V_н$ thanks to the NTL supports it is possible to gain coal production to:

$$O_{в.д} = m_в \times \gamma_в \times L_л \times (V_н - V_m), \text{ t/month,} \quad (8)$$

where $\grave{o}\ \hat{a}$ is a thickness of the coal seam, m;

$\gamma_в$ is a density of the coal, t/m^3;

$L_л$ is a length of the longwall (with width of the extraction field), m;

$V_m, V_н$ is a rate of the tunnel driving (main haulage roadway and air roadway) basing on speed of the roadway strengthening by setting traditional and innovative supports, correspondingly, m/month.

The received additional coal output can give the mine additional gross profit in amount calculated by formula:

$$П_д = (Ц_в - C_{в.н}) \times O_{в.д} \times (1 - C_{п.п}), \text{ UAH/month,} \quad (9)$$

where $Ц_в$ is a wholesale price of the coal marketing, UAH/t;

$C_{п.п}$ is a profit tax rate, parts of unit.

Useful coal resources in the pillar or panel (depending on the seam mining system) are defined by their size (length, width and thickness of the coal seam). These resources are constant at any rate of the longway drivage, and, consequently, the summarized economic effect of the mine from the innovative supports does not depend on the face drivage rate. At the same time, a moment when this effect occurs is very critical for the mining operators. Earlier (ahead of a scheduled date) received fund could be invested into certain innovations for the production operations (for example, to purchase and install new equipment), or in alternative production, or in bank deposit providing the mine with additional profits. Taking into account this approach, the intensified face drivage rate and increased coal output can be very promising and favourable giving the mine an opportunity to plan its profit during the $T_в$ period of time calculated by the following formula:

$$П_{д.a} = П_д \times \left((1 + R_a)^{T_в - 1} - 1\right), \text{ UAH/month,} \quad (10)$$

where $П_{д.a}$ is a profit resulted from turnover of additional funds $П_д$ in alternative productions, UAH;

R_a is a profitability of alternative investments, parts of unit/month;

$T_в$ is a time period the received additionally funds $П_д$ to be turned over in alternative productions, months.

Increased productivity of the mining district leads to less prime cost of 1 t of coal thanks to the reduced relatively-fixed expenses spent directly on the mining operations. With this approach total reduction of the expenditures on the mining district can be calculated by a formula similar to formula (7), namely:

$$\Delta B_в = (V_{в.m} - V_{в.н}) \times O_{д.m} \times K_o + (H_{в.m} - H_{в.н}), \text{ UAH/month} \quad (11)$$

where $V_{в.m}, V_{в.н}$ are variable expenses spent directly on the coal mining with traditional and innovative supports, correspondingly, UAH/t;

$O_{д.m}$ is productivity of the mining district with traditional supports in preparatory roadways;

$H_{в.m}, H_{в.н}$ are summarized relatively-fixed expenses spent directly on the mining operations in faces with traditional supports and NTL supports, correspondingly, used for preparatory development, UAH/month.

When estimating additional profit $П_{д.а}$ it is necessary to take into consideration the following. Productivity $О_{в.л}$ of the mining district by rates of the face driving can exceed productivity $О_{в.н}$ of this district by transportation facilities. In this case productivity $О_{в.л}$ should be accepted as equal to productivity $О_{в.н}$, and economic effect $П_{д.а}$ should be estimated on the basis of productivity $О_{в.н}$. If this productivity is higher than productivity $О_{в.л}$ of the district by the face driving rate then productivity $О_{в.л}$ should be taken into account in calculations of economic effect $П_{д.а}$.

Implementation of innovative supports could be resulted in reduced operational expenses because of: 1) cheaper metal-structure set; 2) reduced operational costs of supporting frame installation and arranging of railways; and 3) reduced relatively-fixed costs of other processes of the mining cycle (borehole drilling, undermining operations, rock loading into the wagons). These expenses $В_{г.в}$ spent on mining with any model of the supporting frames can be generally calculated by the following equation (12):

$$В_{г.в} = \left(\mu_к \times А_к \times \sum_i V_{п.цi} + Н_{п.м} \right) + \left(S_{к.1} + В_{к.1}\right) \times \mu_к + \mu_к \times А_к \left(В_{р.п} + В_{п.в}\right), \text{ UAH/m},$$

where $V_{п.цi}$ is variable expenses for the 3rd process of the mining cycle, UAH/month;

$Н_{п.м}$ is fixed (disproportional) expenses for mining operations except expenses for support setting. UAH/month;

$S_{к.1}$ is a value of one set of metal supports, UAH;

$В_{к.1}, В_{р.п}, В_{п.в}$ are expenses on setting and arrangement, depending on appropriate supporting frame, of the railway and water-draining channel and for the roadway itself (including labour costs and cost of the purchased materials), UAH/m.

Fist sum, in the round brackets of equation (12), reflects operating expenditures spent on the mining operations. Summands of this sum assume costs of materials and work associated with the mining cycle except process of support setting. Actually, these expenditures do not directly depend on model of the tunnel supports; however, when driving of the tunnels becomes faster due to the reduced time needed for setting the supporting frames sum of variables $\mu_к \times А_к \times \sum_i V_{п.цi}$ is increased. As the fixed expenses $Н_{п.м}$ are not changed, so expenditures on developing 1 r.m of preparatory gateroad are reduced.

Second sum, in the round brackets of equation (12), assumes payment of charges to purchase and set supporting frames and their elements. Necessity to use innovative models of supports is primary defined by these expenses. Supports of the improved technical level should be cheaper and should require less expenditures on their installation (per one set of supports or per 1 r.m of the mine tunnel).

Third sum of the equation (12) helps to calculate costs of the railway arrangement and the tunnel itself depending on supporting model. If costs $В_{р.п}$ and $В_{п.в}$ mainly consist of relatively-fixed expenses then the faster is development of the roadway the less is cost of 1 r.m thanks to these expenses. As expenditures on arranging the railway and water-drainage channel and for other operations constitute a small part in the total expenses, and it is difficult to distinguish this part so these expenditures should be considered together with costs of the key driving processes.

Possible economic effect from innovative supporting due to the less costs and faster driving of the mining workings would be equal to:

$$Е_{п.в} = В_{п.т} - В_{п.н}, \text{ UAH/month},$$

where $В_{п.т}, В_{п.н}$ are costs of haulage roadway (air roadway) arrangement with traditional supports and the NTL supports, correspondingly, UAH/month.

To calculate value of $В_{п.т}$, costs should be divided along the whole length of the mine tunnel strengthened by the NTL steel frames, and the length should be adjusted to productivity of the

mining district taking into account possible speed of the roadway driving, capacity of the mine transports and throughput capacity of the mine tunnels.

As soon as the coal is mined costs calculated by the equation (12) for the haulage and air roadways at panel mining should be transferred to the coal cost price by the item "Extinction of preparatory development". Thus, economic effect $\Delta B_{п.в}$ can be received simultaneously with the effects $\Delta B_{о}, \Delta B_{т}$ and $\Delta B_{в}$. These effects mean value of possible reduction of the current inputs of the mine into its production process when the NTL supports are used. Total economic effect from the innovative facilities used for the mining operations is equal to:

$$E_{э} = \Delta B_0 + \Delta B_{т} + \Delta B_{в} + \Delta B_{п.в}, \text{ UAH/month} \quad (13)$$

With the pillar mining, haulage and air roadways from the very beginning are driven till the boundary of the mine field, and coal is extracted by retreat mining. In this case economic effect from the innovating model of supports is created at the account of 1) the same factors shown in the equation (12), and 2) the shorter time period for the coal-pillar preparation. At the pillar length $L_{с}$ and speed $V_{к}$ of the mine tunnel drivage time period $T_{п}$ for the pillar preparation is:

$$T_{п} = \frac{L_{с}}{V_{к}} = \frac{L_{с}}{\mu_{к} \times A_{к}}, \text{ month} \quad (14)$$

The equation (14) assumes that if traditional supports are used speed of the mining is $V_{т}$, and coal pillar is cut during the time period $T_{т}$; when innovating supporting is used speed of the mining is $V_{н}$, and time period for the pillar preparation is $T_{н}$. If monthly expenditures on the mining operations are equal to $B_{п.т}$ and $B_{п.н}$ accordingly to the supporting methods then expenditures needed during the tunnel driving till the end of the mining operations on preparation of the coal pillar are equal to:

$$B_{ст.т} = \sum_{t=1}^{T_{т}} B_{п.т} \times t \times (1 + R_{а})^{t-1}, \text{ UAH;} \quad (15)$$

$$B_{ст.н} = \sum_{t=1}^{T_{н}} B_{п.н} \times t \times (1 + R_{а})^{t-1}, \text{ UAH} \quad (16)$$

In result of the tunnel driving with the help of NTL supports it becomes possible to receive economic effect equal to:

$$\Delta B_{ст} = B_{ст.т} - B_{ст.н}, \text{ грн.} \quad (17)$$

The faster preparation of a coal pillar means earlier beginning of the coal extraction. When duration of the preparation is shortened by $(T_{т} - T_{н})$ it is possible to produce coal ahead of schedule in amount:

$$О_{д.н} = (T_{т} - T_{н}) \times I_{д} \times A_{д} \times L_{л} \times m_{в} \times \gamma_{в}, \text{ t,} \quad (18)$$

where $I_{д}, A_{д}$ are, accordingly, intensity of the coal seam mining by the set of winning machines, cycle/month, and drivage of the gateroad per one cycle, m.

After selling the coal the mine can receive gross profit in amount of:

$$П_{ш.д} = (Ц_{в} - C_{в.н}) \times О_{д.н} \times (1 - C_{п.п}), \text{ UAH} \quad (19)$$

Money received ahead the schedule could give the mine additional profit $П_{ш.д}$ thanks to their turnover in other spheres. This profit can be planned by formula:

$$П_{ш.в} = П_{д.шt} \sum_{T_{н+1}}^{T_{т}} ((1 + R_{а})^{t} - T_{т} + T_{н}), \text{ UAH,} \quad (20)$$

where $П_{д.шt}$ is a profit of the mine after selling the coal produced, thanks to the faster preparation, ahead of the schedule in comparison with the schedule of fulfilling the secondary workings by traditional way in *t*-th month, UAH/month.

This analytical models (1) – (20) help to estimate how innovating facilities and, in particular, supports of a new technical level (NTL supports) used for secondary workings in the mining district can influence the coal mine's economic figures. Summarized effect from the NTL support implementation is estimated by the scale of their implementation (quantity of the mine tunnels and their length). Below are peculiarities of a mechanism for creating a profit for the enterprise when a significant volume of traditional supports are replaced by the NTL supports.

Implementation of innovating supports helps to reduce metal consumption in the mine-tunnel supporting system and to extent length of the mine tunnels thanks to the bigger space between the arch frames. Extended length of the tunnels means preparation to extract additional coal reserves. I.e. innovative models of supporting indirectly increase the coal production. Results of the NTL support implementation in the mines [8] confirm essential reduction of funds spent on repair operations and, what is mostly important, on re-setting of supports in the mine tunnels to arrange greater working space in the tunnels.

Let's analyze impact of the NTL supports on the profit on the example of O.G.Stakhanov Mine. The Mine annually produces 1 mln. t of coal from the seam with thickness 1.2m bedded at the depth 836 m. To be prepared to mine this volume of coal the Mine should develop in advance about 7 km of the tunnel. Cost of 1 km is UAH 4.5 mln. in average. We assume that the NTL supports are used everywhere along the preparatory roadway. These supports helps to arrange greater space between the arch frames, and, thank to this, metal consumption in the tunnel supports is reduced. And, consequently, costs of support driving, supporting, maintenance and repair are also reduced (Table 2.).

Table 2.

Costs by factors that constitute effectiveness of the NTL supports in the O.G.Stakhanov Mine

Pos.	Expenditures	Expenditures, UAH/r.m	
		traditional supports АП 3–15,5	NTL supports КМП А3Р2 (16,1)
I	*Setting*		
1	Support setting	2210,0	1440,0
2	Cost of supporting	168,0	126,0
II	*Maintenance*		
1	Re-setting	5211,0	564,0
2	Undermining of the floor up to 1200 mm up to 1000 mm up to 500 mm	 – 836,0 214,0	 – 836,0 214,0
3	Cost of new supports for re-setting	2210,0	231,0
III	*Totally*		
1	Supporting	4588,0	1797,0
2	Maintenance and repair	6261,0	1614,0

Through implementation of the innovating facilities to strengthen the mine tunnels it is possible to increase a gross profit of the Mine by the value of economic effect $E_{ін}$ that is calculated by formula:

$$E_{ін} = \Delta B_{м} + \Delta B_{р} + \Delta B_{в} - B_{у}, \quad \text{UAH/year,} \tag{21}$$

where $\Delta B_{м}, \Delta B_{р}, \Delta B_{в}$, are reduction of operational expenses thanks to the reduced metal consumption of supporting system, less costs of repairing and resetting operations and cost of the working space expansion, UAH/year;

$B_{у}$ is a purchasing cost of special equipment and machines to build tunnels, UAH/year.

$$\Delta B_{м} = Ц_{к} \times \Delta M_{з} \times L_{в}, \text{ UAH/year,} \quad (22)$$

where $Ц_{к}$ is a cost of 1 kg of special metal profiles, UAH;

$\Delta M_{з}$ is a reducted metal consumption in the tunnel supporting system, kg/r.m;

$L_{в}$ is a length of the tunnel strengthened by metal arches, r/m/year.

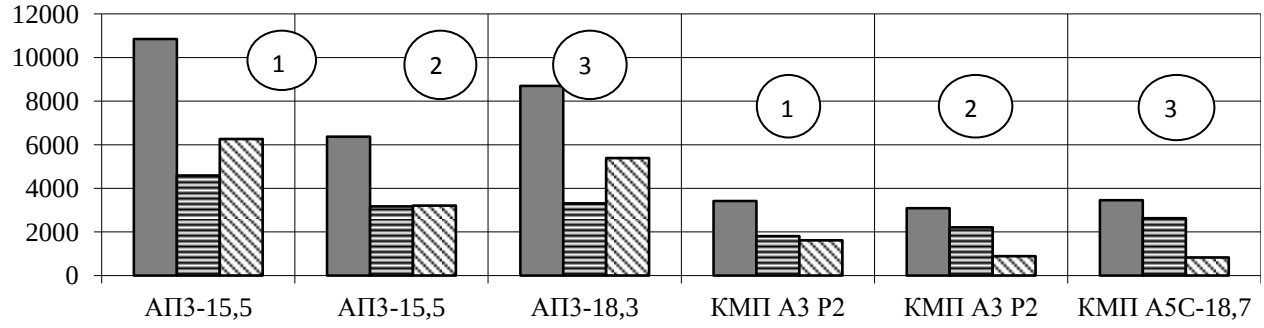
After the components $\Delta B_{р}$ and $\Delta B_{в}$ have been calculated we can define dependence of economic effect on above mentioned factors of implementation of the NTL supports (with index *i*) instead of traditional supports (mp):

$$E_{н} = L_{в}\left(Ц_{к} \times \Delta M_{з} + (1 - P_{et}) \times \left(C_{р.тр} - C_{р.н}\right) + \left(C_{в.тр} - C_{в.н}\right)\right) - B_{у}, \text{UAH/year,} \quad (23)$$

where $(1 - P_{et})$ is a part of supporting sets that are damaged, of their total volume (this factor reflects length of districts where the supports are repaired and re-set and working space is expanded);

$C_{р.тр}, C_{р.н}, C_{в.тр}, C_{в.н}$ are, accordingly, cost of support repair and maintaining in a stable state and cost of the working space expansion with traditional supports and NTL supports, UAH/r.m.

With the aim to calculate economic effect, we assume that cost of 1 t of metal profile is UAH 2 500 for traditional supports and supports is UAH 2 800 for the NTL.



(*totally; supporting; maintenance and repair)

Fig. 1. Expenditures on the mine-tunnel supporting, maintaining and repairing using traditional supports and supports of the SPC Geomechanics design: 1, 2, 3 are for favourable, restrictedly favourable and complicated conditions

Possible mining and geological conditions for the working driving in the Mine are divided into three groups: favourable (weight of 1 r.m of the frame with special profile is 22kg), restrictedly favourable (the same but 27 kg) and complicated (the same but 33 kg) [8]. According to these groups, spaces between the installed metal frames are assumed as 0.8m; 0.5m; 0.33m for traditional supports and 1.0m; 0.8m; 0.5m for the NTL supports. Portion of damaged supports is assumed as 0.5 for traditional supports and 0.4 for the NTL supports. Costs of the active opencast expansion are assumed at the level 20% of the original costs of the tunnel supporting system. For these items, expenditures on preparatory roadway maintenance and repair are shown in Fig.1.

In case the Mine replaces traditional supports by the NTL supports profit increases in direct proportion to the economic effect which changes in accordance with mining conditions in the following way (.000 UAH/year):

Operational conditions	*Traditional supports*	*NTL supports*	*Economic effect*
Favourable	22890	10647	12243
Restrictedly favourable	25480	16968	8512
Complicated	25480	9800	20632

We have analyzed reduction of summarized expenditures spent on purchasing and repairing metal profiles and established the following regularity: the more complicated are conditions of the mining labour, the greater is economic effect from implementation of innovative supports in the mine tunnels. With traditional supports the mine's profit is UAH 5 mln. at output 1 mln. t per year. All-round replacement of these supports by innovative ones gives a rise to the mentioned profit to UAH 8,5–20.6 mln. depending on the labour conditions.

Our practical experience in O.G.Stakhanov Mine confirms high economic effect of the NRL supports used for the tunnel strengthening and maintaining in a stable state and for the working space expansion. Basing on the above method, operation of the NTL supports were also studied in mines of Joint-Stock Company "Pavlogradvygillya". The mines continuously increase their output showing growth of the coal production from 10.22 mln. t to 12.06 mln. t, i.e. by 15%, during 2000-2006. The growth was possible thanks to increased production load of the longway face (from 838 t/day up to 912 t/day) and advanced preparatory development. Without major modification of the mining technologies further complication of the mining conditions due to entering the greater depth would have to be resulted in significantly grown expenditures.

All above data are an evidence of good opportunities to improve economy of the coal mines through innovative supports in the mine tunnels. However, process of replacement of traditional supports by the innovative ones is associated with essential expenses of labour hours and facilities, and duration of the transition period depends upon content of a strategy chosen for the company development in whole.

Thus, the authors have systemized economic effects that a mining company can achieve through implementation of innovative products. As for innovative methods of the tunnel supporting, the effects are achieved thanks to more productive and economical operation of the mining district, reduced costs of the tunnel repair and maintenance, and additional and earlier mined tons of coal. Possible cost saving obtained in consequence of above mentioned economic effects is shown in this article in analytical form.

The authors have worked out and put into practice a set of methodical recommendations how to estimate productivity of organizational and technical innovations in the coal mines and, in particular, viability of advanced practice of frame-anchor supporting of the longway faces in Pavlogradvugillya mines effectiveness of which was calculated on the basis of reported data [8]. According to the reports, each of the 10 mines of the Company produced more than 1.2 mln. t per year; productivity of one miner labour was 43.1 t/month that was exceeded by 1.97 of average figure in the industry; output of the face was 912 t/day. i.e. 1.27 increase; costs of 1 t of produced coal (UAH 150.73) was 1.8 lower that average (UAH 272.53) in the industry. By these factors the Pavlogradvugillya Company is the best among Ukrainian coal-producing companies. At the same time, the Company can further optimize its resources by way of innovative re-organization of processes of the coal mining and transporting [8].

To technically re-equip the mines, the Pavlogradvugillya Company can realize the following key economic concepts:

– Concept *A* – «receiving of credit → implementation of innovating technologies → obtaining of additional income from the implementation → redemption of the credit and gaining of profit»;

– Concept B – «implementation of innovating technologies at the account of internal reserves → gaining of profit»;

– Concept C – «rational combination of Concept A and Concept B advantages».

Researchers specialized in mining science [3] are of the view that the following variants are available for the embodiment of each of these concepts (Table 3.) (description of the variants is below):

Variant 1 assumes arranging of mounting stables; using of innovative supports and re-using of existing gateroads; and arrangement of longways with high production loads;

Table 3.

Production factors of the Pavlogradvugillya Company with different variants of the mine technical re-equipment

Factors	Variant			
	factual	1	2	3
1. Number of longways	35	35	35	35
2. Length of the longway, m	180	180	180	217
3. Production load, t/day	912	912	1800	1785
4. Output produced, mln. t/year	12,06	12,06	24,12	22,14
5. Length of the mine tunnels, km				
– mother entries	21	21	42	40
– gateroads	83	41,5	83	80
6. Length of the extraction pillar, m	1200	1200	2400	2400
7. Costs of the operations, UAH mln.				
– secondary workings	339,6	339,6	510,4	500,1
– preparatory development	400,0	217,6	435,1	416,3
– general	1705,6	1523,2	2544,1	2336,7
8. Prime cost, UAH/t	*150,7*	*126,9*	*106,0*	*105,5*

Variant 2 assumes arrangement of longways with load production 1 800 … 2 000 t per day, first, in three mines of the Company and then in all the rest mines without changing existing park of longwall set of equipment;

Variant 3 assumes introducing of not standard for the West Donbass basin longwall set of equipment with the scrapers and mechanized re-setting of supporting sections; re-structuring of transporting and technological lines with the aim to reduce average number of longways in the basin; and strengthening of new and re-used gateroads with the help of the frame-anchor technologies.

The first variant can be realized within frames of economic concept B or C, variant 2 – concept C only, and variant 3 – only concept A. Variant 2 and Variant 3 assume coal-production intensification through using of new technology of the frame-anchor supporting first in the in-seam preparatory roadways and later in the mother entries. Such supporting system makes possible to double daily production load of the gateroad and, in general, coal production in all mines of the Pavlogradvygillya Company and, thanks to this, cost of the coal can be essentially less: UAH 105.5 per ton instead of UAH 150.7 per ton. The proposed innovative technology prevents coal-production costs from growing when mining operations enter the greater depth with more complicated labour conditions.

CONCLUSIONS

1. Ukrainian scientific, technological and innovation policy should differ from strategy of developed countries. Role of Ukrainian government in transforming of scientific and innovative sphere should be weightier.

2. Ukrainian coal-producing industry features high intellectual potential of researchers, engineers and technicians who can ensure scientific-and-technological development of infrastructure in industrial sector of economy; Ukrainian existing financial-industrial holdings orient themselves towards innovating development, and mines have organized their own scientific centers with own technological projects and strong engineering school.

3. Promising direction of the coal mines transition to technological innovations is introduction of different models of the steel supports designed and manufactured by “Geomechanics” Research-

and-Production Center. By technical characteristics and operation experience, these models are not second to any world models.

REFERENCES

1. Karakay Yu. Future Is Impossible Without Innovative Development. Thoughts about results of hearings “Innovative Activity in Ukraine: Problems and Ways of Their Solving” in Education and Science Committee of Verkhovna Rada of Ukraine. [Electronic resource] // Golos Ukrainy. – 2006. – №245. – Access to the article: http://patent.km.ua/ukr/articles/group11/i1001.
2. Savytska I.K. Management Innovations in Donbass Coal Mines // Economic Herald of National Mining University. – 2004. – №1. – P. 96-101.
3. Kiyasko Yu.I., Kosarev V.V., Kirichenko A.V. About Effectiveness Of Putting Into Operation Additional Development Headings And Longwalls // Ugol Ukrainy. – 2006. – №11. – P. 15-18.
4. Egorov I., Popovych O., Soloviov V. «Strategy of the borrowed knowledge» And Science Development // Herald of NAS of Ukraine. – 2003. – №5. – PC. 3-14.
5. Pavitt K. What Do Firms Learn from Basic Research? // Foray D., Freeman C. (eds.) Technology and Wealth of Nations. - London: Macmillan, 1993. - P. 115 - 143.
6. Ruban O. Machines, Money And Brain. [Electronic resource]. – 2005. – Access to the article: http://patent.km.ua/rus/articles/group11/i731.
7. Law of Ukraine “About First-Priority Fields for Innovative Activity”.
8. Kyrychenko A.V. Improved Economic Methods for Managing Innovative Activity of a Coal-Mining Company. Diss. … Cand.Econ. / National Mining University. – Dnipropetrovs’k, 2009 . – 184 p.

EXTERNAL COSTS OF USING THE ROAD TRANSPORT INFRASTRUCTURE

Aleksander Szlachta

Owing to its geographical location in the very centre of Europe, Poland is where important international transport routes intersect. The state's accession to the European Union caused a sudden traffic volume increase on the roads, particularly among heavy vehicles. Although it is a huge developmental opportunity, it poses a number of threats as well. Transport related economic processes generate specific costs which encumber various parties involved to a different extent, and not only service providers, i.e. carriers, and service recipients, i.e. businesses making use of transport services. The part of costs which has not been covered by economic entities is incurred by both the state and the entire society. They are known as external (social) costs of transport resulting from numerous factors, such as the congestion phenomenon, road accidents, environmental pollution or noise.

INTRODUCTION

Owing to its geographical location in the very centre of Europe, Poland is where important international transport routes intersect. They link the north with the south as well as with the east and west of the continent. Although such a geographical location it is a huge developmental opportunity, it poses many different threats. Without a doubt, transport is still one of major economic growth factors of utmost importance for Central-Eastern European countries. It has caused a sudden traffic volume increase on the roads, particularly among heavy vehicles.

Transport related economic processes generate specific costs. The overall sum of costs related to transport services generated in the given economy must equal the sum of fees charged for the use of road infrastructure, fiscal charges and prices of transport services sold. The costs being generated encumber various parties involved to a different extent, and not only service providers, i.e. carriers, and service recipients, i.e. businesses making use of transport services, but the part of costs which has not been covered by economic entities is incurred by both the state and the entire society. These are external or social, to put it differently, costs of transport resulting from numerous factors, such as road accidents, environmental pollution or noise.

The very nature of logistic processes is a flow of economic goods through individual phases of various economic processes. One of characteristic properties of transport services is that the processes of production and consumption may occur simultaneously. Therefore, it is impossible to develop a transport service on a make-to-stock basis, and one must not forget that transport is in fact one of the most important links in the chain of supply.

The purpose of this article is to discuss the problem of external (social) transport costs incurred by the entire society, generated due to intensive use of the road infrastructure. The author has also provided a topology of the spatial arrangement of main roads and described the function performed by transport in the national economy as well as the threats caused by its sudden development.

TRANS-EUROPEAN ROAD TRANSPORT CORRIDORS

Decisions conditioning investments in the road transport infrastructure, being important for the economic development of the entire country, are made by central administrative bodies. The scope of infrastructural projects currently being implemented in Poland also depends to a considerable extent on the European Union guidelines, such as Decision no. 1692/EC of 23rd July

1996 on community guidelines for the development of the trans-European transport network (TEN-T)[35], amended with Decision no. 884/2004/EC of 29th April 2004[36].
In 1997, at the transport conference held in Helsinki, routes of five Pan-European Transport Corridors including motor car and river roads as well as railways were established along with four maritime zones. The main objective of all these efforts was to strengthen the European transport network and improve the manner in which trade was handled. Our country is an area through which four Pan-European Transport Corridors run, namely corridors I, II, III and VI, which have channelled the trends of modernisation and development of the domestic transport infrastructure for a long period of time to come.
The routes of transport corridors coincide with those of the most important national roads.
Corridor I
runs along the Warsaw - Kaunas - Riga - Tallinn - Helsinki line and it is based on the *Via Baltika* route running from Warsaw through Suwałki to Lithuanian Szypliszki. It has been assigned the status of a European express road with its branches extending to Elbląg and further on to Kaliningrad.
Corridor II
is arranged latitudinally and coincides with the A2 motorway connecting Świecko at Poland's western border with Kukuryki where Poland borders on Belarus, running through Poznań - Konin - Stryków - Warsaw - Siedlce - Biała Podlaska. The corridor also features the E-20 main railway line.
Corridor III
is arranged latitudinally and lies in the axis of the A2 motorway connecting Olszyna at Poland's western border with Karczowa at the Ukrainian border, running through Legnica - Wrocław - Katowice - Krakow - Tarnów - Rzeszów - Przeworsk. The corridor also coincides with the E-30 main railway line.
Corridor VI
is arranged meridionally based on the A1 motorway, beginning in the southern section of the Tricity ring-road, running through Grudziądz - Toruń - Stryków - Katowice up to Žylina at the Slovakian border. The corridor coincides with the E-65 and CE-65 main railway lines.
In Annex II to Decision no. 884/2004/EC, thirty priority investments to be performed in the transport infrastructure across Europe until the year 2020 were defined. By that time, the European transport network will have been extended by 4,800 km of motorways and 12,500 km of railway lines, and 3,500 km vehicle roads, 12,300 km railway lines and ca. 1,740 water routes will have been modernised. The costs related to accomplishment of the aforementioned plans were estimated (in 2005) to reach EUR 252 billion, and they were to be financed from the EU funds[37].
Among the plans made, the EU funds are currently utilised to finance the most important road investments, for instance construction of sections of the A1, A2, A3 and A4 motorways as well as modernisation of the E 20, E 30 and E 59 railway lines covered by the TEN-T trans-European network.
In the year 2008 in Poland, construction of one kilometre of motorway in an easy terrain cost ca. EUR 10 million, with the corresponding amount being two or three times higher in developed areas[38].

[35] Decision no. 1692/EC of 23rd July 1996 on community guidelines for the development of the trans-European transport network.
[36] Decision no. 884/2004/EC of 29th April 2004 amending Decision no. 1692/96/EC on community guidelines for the development of the trans-European transport network.
[37] European Commission, Trans-European Transport Network, TEN-T priority axes and projects 2005, Brussels 2005, pp. 6-7.
[38] Official Journal 2008/102, supplement entitled "Rynek budowlany" (construction market), p. 8.

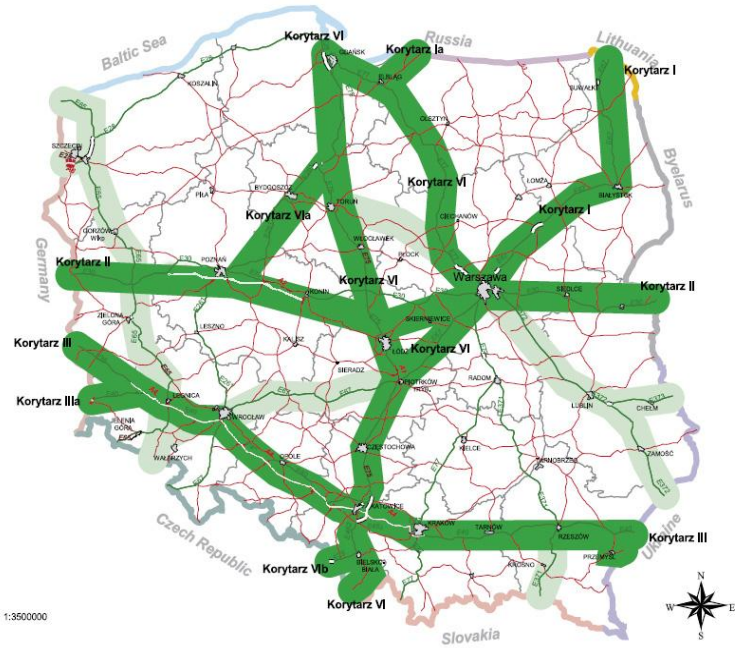


Fig. 1. International transport routes cutting through Poland

Source: *Drogi a środowisko* (Roads vs. Environment), siskom.waw.pl/nauka-srodowisko htm[39]

SOCIAL COSTS INVOLVED IN THE TRANSPORT ACTIVITY

Consumption of means of production in the course of any economic activity generates costs. Therefore, the single most important factor making an economic entity an enterprise is the economic aspect. It remains closely linked with the category of the owner (entrepreneur) of assets required to conduct the given activity at one's own account, risk and discretion[40]. What is decisive for both the object and the technology of economic activity in the sphere of transport is the type of work means at hand, i.e. the means of production of transport services (being the fleet, in most cases). An object of such an activity is usually the provision of transport services aimed to satisfy the demand of a certain market. One of characteristic properties of transport services is that the processes of production and consumption may occur simultaneously, and hence it is impossible to develop a transport service on a make-to-stock basis. A specification of transport services has been developed by the Central Statistical Office in the form of the Polish Classification of Products and Services[41]. Individual types of transport service have been qualified with regard to the types of environment in which they are provided. They are marked with symbols corresponding to individual sections:

- road and pipeline transport services – section 49,
- water transport services – section 50,
- air transport services – section 51,
- warehousing and auxiliary transport services – section 52.

The costs generated in connection with transport activity may be divided into external and internal.

[39] *Drogi a œrodowisko,* siskom.waw.pl/nauka-srodowisko htm.
[40] *Nowy leksykon PWN,* Wydawnictwo Naukowe PWN, Warsaw 1998, p. 1409.
[41] *Polish Classification of Products and Services (PKWiU) – Schematic classification* (Official Journal of Laws of 2008, no. 207, item 1293).

Internal costs are incurred by an enterprise and they are related to the consumption of means of production; they are referred to as costs of production.
The reasons for incurring external (social) costs may differ, although the main ones include noise, exhaust gases, car accidents, the road congestion phenomenon, deleterious changes taking place in the natural environment and even climate changes. In other words, they are all directly linked to the negative impact of transport activity on both the human life and the natural environment[42]. Covering of these costs is shared by the state and the entire society. They constitute the social portion of transport costs that are not incurred by transport operators or carriers.
The general classification of social costs of transport along with their breakdown into internal and external costs was provided in the Green Paper of the European Commission of 29th December 1995 entitled "Towards Fair and Efficient Pricing in Transport".

Table 1.

Classification of transport costs

Cost categories	**Social costs**	
	Internal/private costs	External costs
Transport expenditure	fuel and vehicle costs; tickets/fares	costs paid by others (free provision of parking spaces)
Infrastructure costs	user charges, vehicle taxes and fuel excises	non-covered infrastructure costs
Accident costs	costs covered by insurance, own accident costs	non-covered accident costs, e.g. pain and suffering imposed on others
Environmental costs	own disbenefits	non-covered environmental costs, e.g. noise disturbance to others
Congestion costs	own-time costs	delay/time costs imposed on others

Source: *Towards Fair and Efficient Pricing in Transport. Policy Options for Internalising the External Transport Costs in the European Union*, Green Paper, European Commission, Brussels 1995, COM (95) 691, p. 4[43].

EXTERNAL COST GENERATING FACTORS IN ROAD TRANSPORT

Investment related decisions affecting the activity level and the quality of the transport services rendered are made and performed by:

- state administration – infrastructural investments covering development of the country-wide transport network,
- carriers – suprastructural investments usually related to acquisition as well as modern fleet (both specialised and universal).

Technical advancement level of the investment performance, the level and quality of use of the road infrastructure as well as the generation of the equipment being operated are the factors directly

[42] A. Tylutki, J. Wronka, "Znaczenie kosztów zewnêtrznych dla polityki transportowej pañstwa", Przegl¹d komunikacyjny, no. 8/1995, p. 1.
[43] *Towards Fair and Efficient Pricing in Transport. Policy Options for Internalising the External Transport Costs in the European Union*, Green Paper, European Commission, Brussels 1995, COM (95) 691.

conditioning the amount of external costs incurred by the society. Poorly designed and built roads as well as obsolete or overloaded means of transport are direct reasons for intensification of negative phenomena generating external costs in the use of road infrastructure.

Table 2.

Social cost generating factors in road transport

Social cost generating factors in road transport	
Costs related to:	- noise caused by transport - air pollution - climate changes - transport accidents - environmental hazard - transport congestion

Source: authors' own study.

In the years 1990 and 1995, external transport costs were being researched in fifteen countries of the European Community as well as in Switzerland and Norway[44]. Some of the research results, namely those pertaining to road traffic, have been discussed in the following sections.

Costs of traffic noise

The main source of noise causing nuisance to people and the natural environment is traffic. This hazard becomes particularly intense in large urban areas due to such factors as transit, public transport or airfields.

The noise related costs result from the use of the transport infrastructure and they include treatment of all sorts of psychical and physical issues such as stress or heart and cardiovascular diseases.

They are also related to the expenses incurred due to the necessity to prevent or eliminate damage caused by the noise affecting the natural environment surrounding us. Noise is always alien to the natural environment. Certain bird species abandon their breeding grounds located in areas where the daylong equivalent noise level exceeds 40 dB. Where a transport route cuts through protected lands, it should unconditionally feature noise suppressing structures[45].

Fig. 2. Sawdust concrete noise abatement walls

Source: *Drogi a środowisko,* siskom.waw.pl/nauka-srodowisko htm.

[44] See: Wiel'dek A., "Koszty zewnêtrzne transportu", at: *Technologie transportowe XXI wieku,* Midur R. (ed.), Institute for Sustainable Technologies – National Research Institute, Warsaw – Radom, 2008, pp. 681-717.

[45] *Drogi a œrodowisko,* siskom.waw.pl/nauka-srodowisko htm.

Total external costs incurred in the European Community countries due to traffic noise in 1995 came to EUR 36,500 million, including as much as 32,100 million, i.e. 87.9%, spent on road traffic.
The contemporary approach to the traffic noise issue consists in involvement in the entire transport system. In order to reduce the noise level, the European Union authorities introduce emission standards for various means of transport.
The permissible noise level caused by intense use of transport infrastructure has been defined in the Regulation of the Minister of Environment of 29th July 2004 on permissible levels of noise in the environment[46].

Air pollution costs

The main sources of atmosphere pollution include heavy industry, power engineering, municipal and domestic sector as well as transport, particularly road transport. As with noise, the air pollution level depends on the same factors, namely traffic intensity, flow and share of heavy vehicles.
The exhaust gases produced by vehicles contain numerous harmful chemical compounds including nitrogen oxides, carbon oxide, suspended dust or lead. The costs related to air pollution are mainly incurred due to the negative impact of exhaust gas on human health, crops as well as the condition of forests and structures.
Air pollution with substances exhaust gas contains exceeding the permissible standard thresholds is usually the issue of large cities. Cities are commonly known to suffer from the highest congestion and frequent traffic jams. Exceedance of the permissible exhaust gas emission standards in suburban routes is mainly the case of areas directly adjacent to roads. Articles 85 and 86 of the environmental protection law[47] lay down the standards for air quality protection in the following scope:

- permissible air concentration levels of substances,
- division of the country depending on the air pollution level,
- air protection schemes.

The overall external costs incurred in the year 1995 in relation to air pollution by motor vehicles came to EUR 134,000 million, including road transport accounting for EUR 129.9 million, i.e. as much as 96.9%. The largest share of costs is attributed to medical treatment costs (i.e. 81%), followed by damage to buildings (18%) and crops (1%).

Costs due to nature changes

While designing transport routes, one must necessarily take the country-wide arrangement of legally protected areas into consideration. It makes it possible to avoid any potential issues in the course of road construction works as well as conflicts with the natural environment.
The costs related to changes introduced in the nature are both due to the fact that roads exist and to their utilisation in transport. In order to estimate the costs in question, one should particularly take the following factors into account:

- how the use of the existing road infrastructure influences the ecosystem of the surrounding area,
- pollution of surface and underground waters caused by the toxic compounds present in exhaust gas,
- other damage inflicted on the natural environment and landscape, such as on the land surface (mass movements), obstacles to the horizontal flow of surface and underground waters, impact on the living nature and landscape, impact on cultural heritage.

Environmental protection is growing in importance in the EU countries, and the European Commission attaches great value to appropriate performance of environmental impact assessment procedures under projects co-financed from structural funds. Should the environmental impact

[46] Regulation of the Minister of Environment of 29th July 2004 on permissible levels of noise in the environment (Official Journal of Laws No. 178, item 1841).
[47] Environmental protection law of 27th April 2001 (Official Journal of Laws of 2001, no. 62, item 627).

assessment be conducted in a manner nonconforming with the applicable EU's legal requirements, the European Commission may cancel the project, this resulting in a loss of investment funds.
The overall external costs incurred in this scope in the year 1995 by the EC states subject to the research as well as by Norway an Switzerland came to EUR 16,000 million including EUR 14,450 million, i.e. 90.3% spent on road transport.

Road transport accident costs

Costs due to road transport related accidents may be broken down into the following four groups:

- estimated indemnification amount – equivalent of the loss incurred by the accident casualty's relatives,
- treatment costs – expenditures related to post-accident medical treatment,
- administrative costs – e.g. insurance, court proceedings police, including social costs not covered by the given business entity[48].

In the countries subject to the research, the overall external costs of accidents in road transport came to EUR 155,300 million in the year 1995. This amount constitutes 96.6% of all external costs related to transport accidents.

Traffic congestion costs

They are most typical of road transport where traffic planning is encumbered with the greatest difficulty. The phenomenon of congestion (concentration of vehicles) may be:

- incidental (short-term), e.g. caused by road repairs or accidents,
- recurring (permanent), e.g. in a daily or seasonal cycle, due to depletion of the flow capacity of a certain road section, this implying an urgent need for the flow capacity increase.

Fig. 3. Acoustic covering – a tall curved shield

Source: *Drogi a środowisko,* siskom.waw.pl/nauka-srodowisko htm.

The phenomenon of traffic congestion (concentration) is a factor increasing the intensity of deleterious environmental impact of all negative aspects causing potential environmental hazards. Using the road infrastructure under the conditions of traffic congestion may have different outcomes, including loss of time, noise increase, considerable increase of air pollution with exhaust gas due to the vehicles stuck in traffic jams.
The occurrence and intensity of negative factors generating external costs depend on the following several aspects to the greatest extent:

- road traffic intensity,

[48] Mendyk E., *Ekonomika transportu,* Poznañ School of Logistics, Poznañ 2009, pp. 269-274.

- frequent occurrence of traffic congestion,
- arrangement of roads and their structure.

Total external costs related to the traffic congestion phenomenon incurred in the year 1995 in the countries researched came to EUR 33,321 million.

The heaviest traffic congestion is typical of national roads linking large cities. In large agglomerations, traffic may suddenly increase by ca. 100% up to as much as 200%. The map provided below illustrates both the existing roads and those planned to be built where traffic volume exceeding 10 thousand vehicles per day is currently observed, with more than 15 thousand vehicles running per day in certain sections.

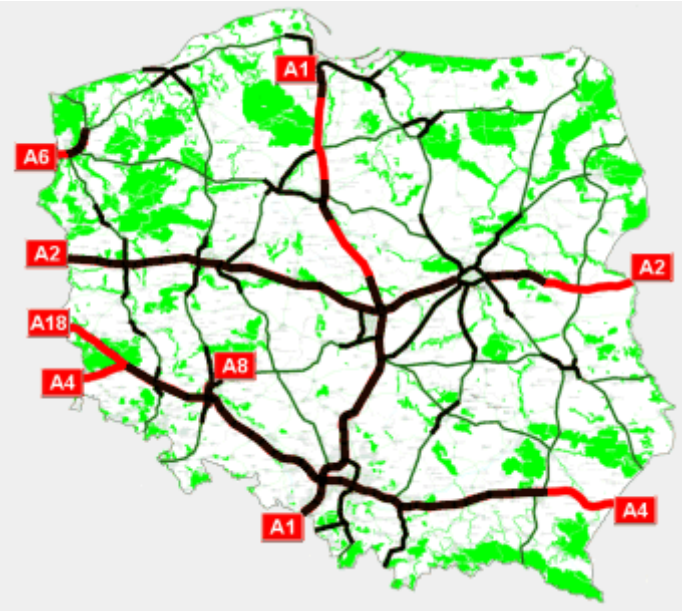


Fig. 4. Roads of average daily traffic (ADT) exceeding ten thousand vehicles per day

Source: *Drogi a środowisko,* siskom.waw.pl/nauka-srodowisko htm.

One may expect that, as a result of dynamic economic development, the average daily traffic (ADT) in most roads will considerably grow even further.

CONCLUSIONS

Our country is the European leader in terms of international road traffic. In this category, we have outdistanced such economic powers as Germany or the Netherlands. Road transport is also one of the factors strongly contributing to the economic growth as more than 84% of cargo is transported by roads. According to the data published by Eurostat for the year 2009, our country's share in the European carriage is nearly 15%. The Polish domestic market features ca. 24 thousand companies operating in the sector of international transport. They are in disposal of a fleet of more than 140 thousand transport vehicles mainly comprising (besides specialised vehicles) truck-tractors equipped with semitrailers[49].

Such a turbulent growth of the transport sector began after the country accessed the European Union and our domestic carriers were vested the rights to operate within the entire Community market. Polish carriers transport a very wide range of goods, starting from food, flowers, electronic equipment, fuels, chemicals, automotive spare parts to end up with entire cars.

[49] Grzeszczak, A., "Tiry narodowe", *Polityka* 6/2011, p. 32.

Even though important European transport corridors cut through our country, the technical condition of domestic road infrastructure leaves much to be desired. It is the reason for numerous unfavourable processes occurring both in transport and in other sectors of economy, the outcomes of which include growing social costs.

High external costs related to transport make the EU states strive for internationalisation,[50] being a process of adopting external values, standpoints or standards as one's own[51]. The very grounds for internationalisation of external costs should be the reasonable estimation of all factors which generate loss such as traffic noise, traffic congestion, air pollution or changes to the natural environment. Charging individual carriers and operators proportionally to their actual contribution to the occurrence of the foregoing phenomena seems only possible through administrative measures.

The process of internationalisation of external transport costs appears to be natural and inevitable. In the report from 2002[52], the OECD (the Organisation for Economic Co-operation and Development) estimated the external costs incurred in Poland to reach ca. 10% of GDP, with ca. 93% of these costs being related to transport. It is a share comparable to the results obtained in the 15 European Community countries subject to the research discussed.

In order to reduce external transport costs, various efforts have been undertaken for many years now, including the following:

- technological progress in car design – reduction of combustion (ecological certificates – EURO 0-V), application of alternative drive solutions,
- improving the flow of traffic – elimination of the congestion phenomenon by various means, including building grade-separated intersections, elimination of traffic bottlenecks,
- limitations for the traffic of heavy vehicles in favour of combined transport,
- construction of roads with quiet pavement,
- using artificial shields and green shields, e.g. noise barriers.

The foregoing objectives have been reinforced by the premises of the national transport policy for the years 2006-2027, where it has been stated in chapter 7 that intermodal and logistic operators should be supported. It has also been envisaged that competitiveness of other transport modes, besides the road and air transport, should be increased[53].

Since Poland accessed the European Union, the number of vehicles involved in international transport has increased by more than 50%. In the years 1990-2005, the number of passenger cars registered in the country increased by 134.5%, whereas the number of trucks registered in the years 1990-2004 increased by 129%. Average daily traffic in the domestic roads in the years 1995-2005 grew from 8.5 thousand to 13.5 thousand vehicles. The 2020 forecasts imply that the number of passenger cars may increase further on by 40% up to 60%[54] .

Under the current conditions, the only guarantee for cutting down the social transport costs and preventing environmental degradation is the construction of appropriately designed and properly used network of modern, high-quality roads Our country is situated in the very centre of Europe and must not constitute a road obstacle for neighbouring countries. Road traffic will keep growing in the incoming years and the economy will face an opportunity to make considerable progress in the sphere of transport.

[50] Tylutki A., Wronka J., "Znaczenie kosztów zewnêtrznych...", op. cit., p. 2.

[51] *S³ownik wyrazów obcych* (dictionary of foreign words and phrases), Wydawnictwo Naukowe PWN, Warsaw 1997, p. 483.

[52] *External transport costs in Eastern Europe*, OECD, 6th May 2002.

[53] Ministry of Infrastructure, *National Transport Policy for the Years 2006-2025,* Warsaw 2005, p. 33.

[54] *Drogi a œrodowisko,* siskom.waw.pl/nauka-srodowisko htm.

REFERENCES

1. Decision no. 1692/EC of 23rd July 1996 *on community guidelines for the development of the trans-European transport network (TEN-T).*
2. Decision no. 884/2004/EC of 29th April 2004 *amending Decision no. 1692/96/EC on community guidelines for the development of the trans-European transport network.*
3. *Drogi a środowisko,* siskom.waw.pl/nauka-srodowisko htm.
4. Official Journal no. 2008/102, "Rynek budowlany" supplement.
5. *Drogi a środowisko,* siskom.waw.pl/nauka-srodowisko htm.
6. Grzeszczak A., "Tiry narodowe", *Polityka* 6/2011.
7. *External transport costs in Eastern Europe*, OECD, 6th May 2002.
8. European Commission, *Trans-European Transport Network, TEN-T priority axes and projects 2005*, Brussels 2005.
9. Mendyk E., *Ekonomika transportu,* Poznań School of Logistics, Poznań 2009.
10. Ministry of Infrastructure, *National Transport Policy for the Years 2006-2025,* Warsaw 2005.
11. *Nowy leksykon PWN,* Wydawnictwo Naukowe PWN, Warsaw 1998.
12. *Polish Classification of Products and Services (PKWiU) – Schematic classification* (Official Journal of Laws of 2008, no. 207, item 1293).
13. Regulation of the Minister of Environment of 29th July 2004 on permissible levels of noise in the environment (Official Journal of Laws No. 178, item 1841).
14. *Słownik wyrazów obcych,* Wydawnictwo Naukowe PWN, Warsaw 1997.
15. Tylutki A., Wronka J., "Znaczenie kosztów zewnętrznych dla polityki transportowej państwa", *Przegląd komunikacyjny* no. 8/1995.
16. Environmental protection law of 27th April 2001 (Official Journal of Laws of 2001, no. 62, item 627).
17. *Towards Fair and Efficient Pricing in Transport. Policy Options for Internalising the External Transport Costs in the European Union*, Green Paper, European Commission, Brussels 1995, COM (95) 691.
18. Wielądek A., "Koszty zewnętrzne transportu", at: *Technologie transportowe XXI wieku,* Midur R. (ed.), Institute for Sustainable Technologies – National Research Institute, Warsaw – Radom, 2008

SYSTEMS APPROACH TO LOGISTICS MANAGEMENT

Marina Ivanova

A systematic approach to management of logistics activities at industrial enterprises aimed at European integration in the context of globalization of economic processes is investigated. The principles of management of material, financial and information flows as a set of interrelated elements are proposed. A logistics system that allows prompt identification of "bottlenecks" and their elimination, with the feedback to flexibly adjust the logistic processes, is developed.

INTRODUCTION

In today's globalized economy, a logistics management system of industrial activities will help to optimize the overall organizational and economic mechanism of industrial enterprise management, as it takes into account outside and inside influences, management functions, and provides an effective feed-back.

1. SYSTEMS APPROACH TO INDUSTRIAL ENTERPRISE MANAGEMENT

Issues of systems approach are spotlighted by both foreign and Ukrainian economists. Thus, V.D. Bakumenko considers entrepreneurship to be the most complex of social systems: it is an organization with numerous fields and types of activities, the corresponding subjects and objects of management at different levels, interrelations between them (internal) and with other social systems (external). Besides, the processes within social systems are probabilistic. In this regard, it is appropriate to apply existing systems approaches to analyzing complex systems. These approaches allow a representation and description of a complex system in terms of subsystems of lower complexity as compared with the original system [1, p.312].

A social system is defined as "multiple objects with a set of relationships between them and their properties, i.e. everything consisting of interrelated parts" [2, p.18]. This opinion is shared by S.L. Optner: a system … is 'a set of objects that possess the given properties and a set of relationships between the objects and their properties" [3, p.89]. Therefore, when applying a systems approach to study social systems, one should bear in mind that their basis is the human activity aimed at various transformations of the environment.

It should be noticed that the definition of system as "a multitude of elements of the random nature that have relationships to form certain integrity" [4, p.5] suggests the rule of emergentness. It says that the sum of the elements of a system is not equivalent to its own properties in general and indirectly postulates the presence of an environment in which the system exists and functions [5, p.14].

Modern management theories use several approaches to classify systems. They are [6,p.21]: a) functional (simple – complex, static – dynamic, deterministic – probabilistic systems), b) behavioral (goal-oriented – unfocused systems), c) hierarchical (simple static, simple cybernetic, social systems); d) managerial (adaptive management, educational systems); and e) in terms of flow (open, quasi-closed, closed systems).

An open system (logistics activities) may be characterized by properties that cause changes in the destination, functions, flow or structure of a system: wholisticity (interdependent integrity), cumulativeness, differentiation, isolation, centralization, dynamic equilibrium, negative entropy, deferred increase, recurrence of events, a strange attractor, completeness of destination [7, p.83-89].

The logistics activity in a plant is part of logistics processes, which integrates transportation, inventory, warehousing space, material handling systems, packaging, and other interrelated activities including expenditures and service from a supplier to the customer (the supply chain) [16, p.30]. The systems approach gives the opportunity to present logistics management as a set of elements that on the one hand are the subsystems, on the other hand are themselves systems. The logistics management system has the following properties [1, p.313]: complexity, openness, probabilistic processes, self-organization, the interoperability of subsystems that make decisions in particular.

The most characteristic feature of the logistics management system is people (employees) whose main function is management. Hence, the logistics management system may be presented as two subsystems: the managerial subsystem, which is the subject of management (functional departments of the enterprise) and the subsystem managed, which is the object of management (material, financial and information flows).

Logistics management process involves an interaction of the subject and the object of management to reach a goal using key management functions.

According to V.D. Bakumenko, the subject of management affects the object of management via managerial influences that are the result of certain managerial decisions. These managerial influences result from the latter through the communication function. Thus, we can assume that the managerial influences are relatively minor to administrative decisions and are a form of their manifestation (reflection). The managerial influence vector may exceed the decision-making vector, which is commonly found in the systems approach. A managerial decision and the corresponding managerial influences are to give rise to actions and/or events in the object of

management, which are aimed at the environment changes desired for the subject of management. The object of management manifests itself in different actions and events that are the result of various activities (such as economic, political, social, scientific, innovation activities, etc.). For reasons that these actions and events are caused by changes in the situations within the systems, they can be called perturbations. The concept of perturbation can also be extended to changes in the system states [1, p.313-314].

The closed management chain (the object – the subject) is referred to as "a management cycle" [8, p.78; 9, p.350]. It allows doing corrections, or adjustments (search for optimum) through a new managerial decision (MI1 → MI2 → … → MIn), which is made as a result of perturbations (PERT1 → PERT2 → …→ PERTk) and external factors. This is how the feed-back system works (Fig.1).

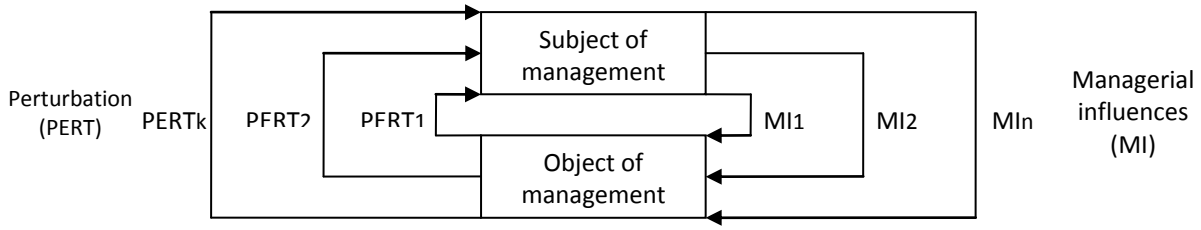


Fig. 1. A classic-type management cycle

Interactions between the subject and the object of management occur as a reaction between them. Through the feedback, managerial influences of the subject of management result in perturbations in the object of management, which in the open system alternate with each other. According to V.D. Bakumenko, the differences between the subject and object of management certainly exist, and they have a fundamental character at the level of investigating the activities, but not at the level of "management cycles" [1, p.314].

2. THE FORMATION OF LOGISTICS MANAGEMENT SYSTEM

In systems with multiple subsystems, many "management cycles" operate simultaneously. There is a mutual influence between many of them (but not by all and for all). Besides, it is vital to consider the influences of both external and internal environment (procurement, production and sales) (Fig.2).

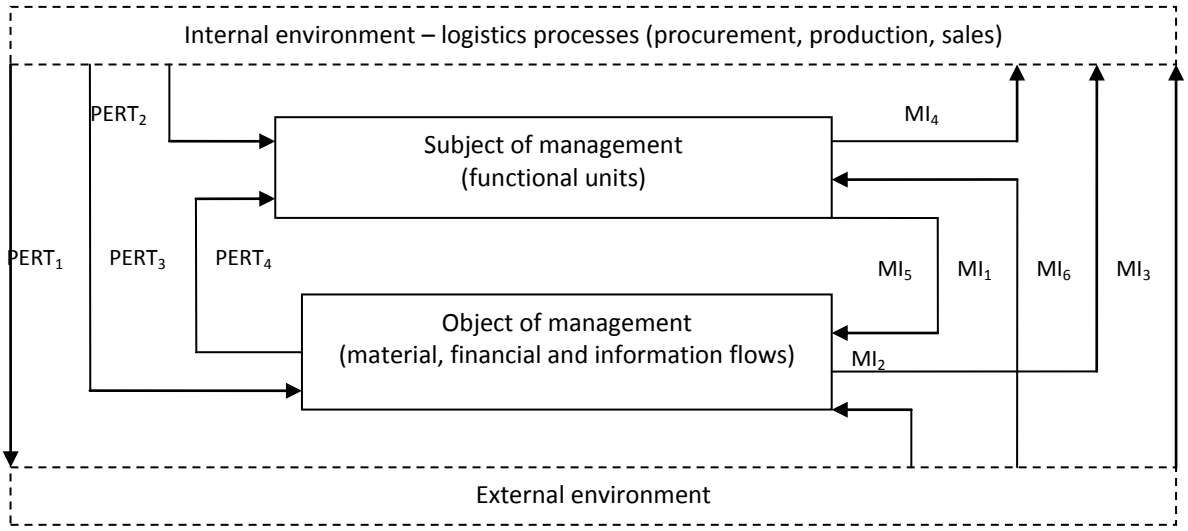


Fig.2. Logistics management system in an industrial plant, with inside and outside influences

The external environment influences the subject of management (MI1) through crisis and inflation, changes in legislation, or climatic factors. It also affects the object of management (MI2) through changes in the price and quality of raw materials and fuel and energy resources, automation level, deterioration of equipment and technology, availability of financial resources, timeliness and accuracy of information, changes in market conditions.

The subject of management influences the internal environment (MI4) by improved procurement conditions, extended payment terms, improved technology, an increased quality of after-sales service etc. In its turn, it affects the object of management (MI5) through the methods of the management of logistics flows at the industrial enterprise, which is a burning problem of today.

With insufficient resources (especially fuel and energy resources, raw materials and supplies) the subject of management affects the manufacturing process (MI6), which can lead to a violation of the agreements on the sale of products in the volumes under the supply contracts; it can also result in worsening economic and financial situation of the enterprise as a whole.

The effects of the external environment on logistics processes (procurement, production, sales) are of economic, political and environmental nature (MI3). However, these effects also cause perturbations (PERT1). A striking example of this is the production under oligopoly or monopoly, when a company is able to dictate the terms on delivery volumes and prices of its products. Perturbations of the internal environment in response to the impact of the object of management (PERT3) are manifested in the revision of production programs (towards an increase if there is an excess of resources, or towards a reduction if there is a lack). Search for funding of economic activities can also be an indication of these perturbations.

The subject of management experiences a perturbation from the internal environment (PERT2) via the system of economic incentives: in case the financial and economic performance of the company is improved, the staff can receive bonuses for an effective management of logistics flows (i.e. an effective influence on the object of management). Conversely, deterioration in the performance will result in a reduction of bonuses.

A perturbation of the object of management in response to the subject's influence (PERT4) is as a rule exhibited as better effectiveness of logistics management.

Most attention is required for a disclosure of relationships between the subject and the object of management with the use of "management cycles" techniques, which enables move from a static to a dynamic representation of systems.

3. Logistics Functions of an Industrial Enterprise

A logistics management system in an industrial plant including logistics management functions complies with a classic pattern of management (Fig. 3), which is based on the main logistics management functions [10, p.84-89].

Thus, firstly, planning or regulation of the constituents of the material, financial and information flows are in accordance with primary or secondary goals set, including the considerations of how to achieve them. Secondly, the distribution of authority as to making orders, the use and the formation of the constituents of the material, financial and information flows suggests the formation of the corresponding functional structures and the implementation of organizational functions. Thirdly, motivation for the efficient use of the component parts of the material, financial and information flows should provide for the involvement of all parties in achieving goals. Next, monitoring and control of the efficient use of components of the material, financial and information flows provides a possibility of a correction of goals, structure, authority, tasks and motivational attitudes in case of deviations from the predefined parameters. Finally, the function of the decision-making is implemented through developing and making of managerial decisions and communicating them in the form of managerial influences to the object of management through the function of communication.

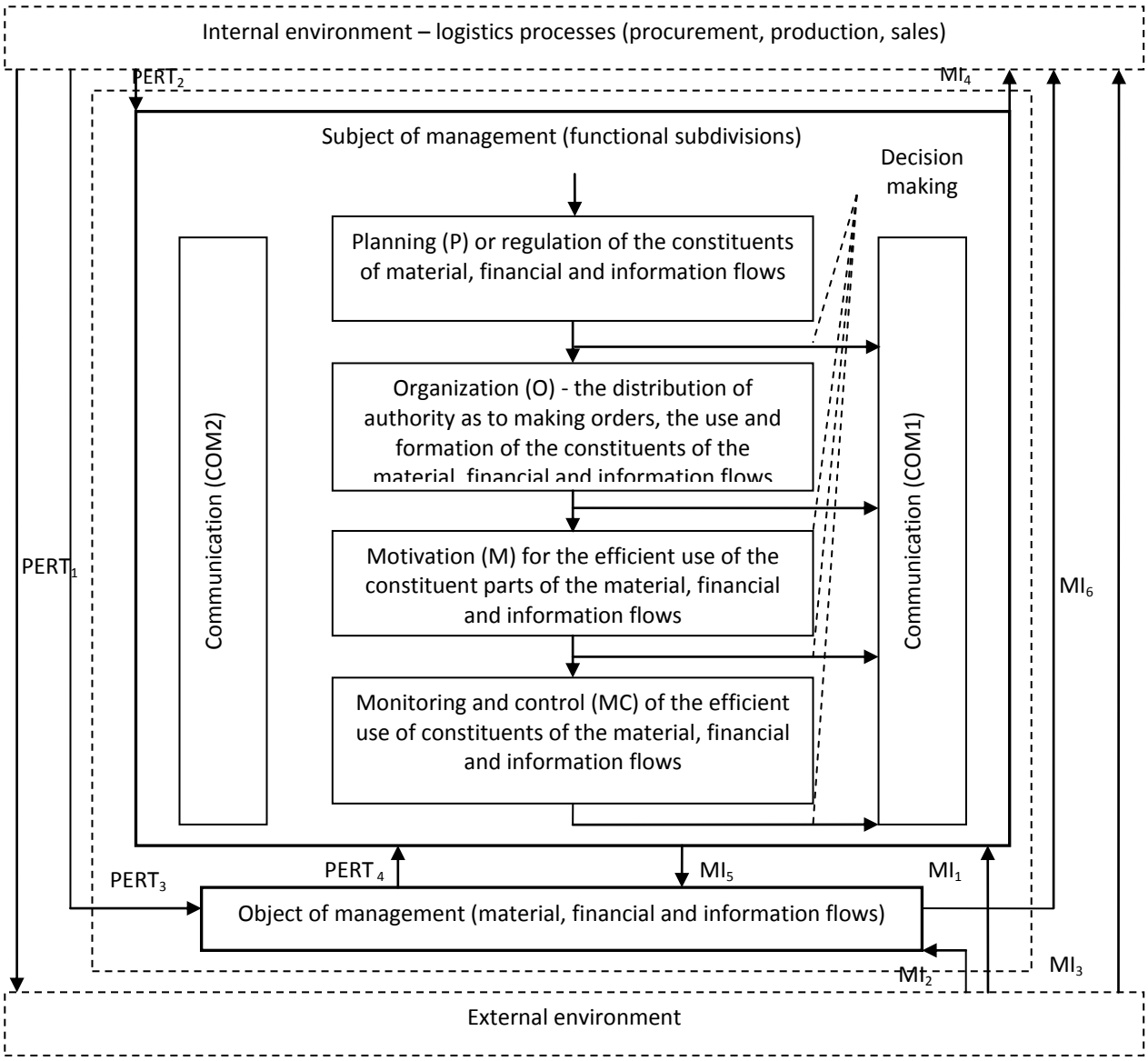


Fig.3. A system of logistics management of an industrial enterprise that takes into account the logistics management functions

The diagram in Fig.3 illustrates a well-known notion of managerial decisions and communication and processes connecting them. The diagram clearly shows that managerial decisions connect the logistics management functions with the object of management and with each other. The similar nature is also characteristic of communication (information exchange, processing, conversion, storage, accumulation) [1, p.318].

The object of management affects the character of the perturbations resulting from activities that lead to an expedient change and transformation of the environment for the good of people [11, p.381]. In other words, the results of the work of any enterprise (e.g. products, services, changes in the environment) are the perturbation [1, p.317]. The subject of management, as it was mentioned earlier, is the functional divisions of the enterprise, whose characteristic feature is the human factor.

It should be mentioned that to develop the logistics management system with distinguished "management cycles" in an industrial plant, it is possible to divide "management cycles" into their constituent elements – flows (raw material and supplies flow, fuel and energy flow, technical and technological flow, human, financial, and information flows). Each of them, in its turn, is also an object of management. They all are closely interrelated, which is objectively determined by the operation of an industrial enterprise. Our analysis has shown that today there are almost no major studies in the field of logistics management in industry. Studies in this field should take into account the peculiarities of formation and use of the constituent elements of the material, financial

and information flows, separately and in combination, as well as the specifics of the operation of an enterprise. That would provide a sound opportunity to respond to rapidly changing market conditions. The complexity of these tasks is increased by the individual characteristics of the functioning of enterprises in a real market economy.

A logistics management system of an industrial plant is to consist of a set of elements (such as input, output, object and subject, limitations, feed-back). These elements ensure effective managerial influences on the formation of a required volume and range of the constituents of material, financial and information flows, together with the measures to optimize the process. The main condition for the effectiveness of the management system in industry is the plant administration's prior experience of managing the constituents of material, financial and information flows as well as an opportunity to apply the new methods of management, which comply with today's realities. The other vital conditions are: the ability to take into account the changing stages of production and unite the elements using an inductive method; the formation of functional structures that can manage the constituents of the material, financial and information flows together with the general management of the plant; the development of norms and regulations, which would allow the best performance of the logistics management system.

The system of logistics management of an industrial enterprise as a scientific tool of investigation will enable: first, connect economic phenomena and processes that take place within the enterprise ("procurement, production, sales" as a set) with the external environment (Fig.2, 3). Second, this will enable connect the methods of management of the material, financial and information flow constituents with the enterprise's goals.

Thus, "the logistics management system of an industrial plant" may be defined as a functional unity of the management system object (material, financial and information flows and financial or economic relations), the management system subject (functional subdivisions in the plant), and the external environment.

The logistics management system of an industrial plant will allow to do the following: a) to define a goal and the object of investigation (the formation of the constituents of the material, financial and information flows so as to ensure continuous and systematic production and sales); b) to apply the latest methods of investigating the intricate processes of resources transformation (a functional-cost analysis, economic-mathematical methods); c) to develop a set of methods to manage material, financial and information flows; d) to take into account the influence of the external environment and to increase the adaptability of the logistics management system.

The subject of the logistics management system in an industrial enterprise is a special group of people who affect the material, financial and information flows and ensure their efficient formation and use as required by the actual procurement, production and marketing processes under the influence of the external environment.

We consider "the object of logistics management of the industrial enterprise" to be the constituents of the material, financial and information flows, which are subject to changes in the amount and form of existence; here also belong the financial and economic influences that arise at each stage of the production depending on the plant's financial and economic environment.

As to the elements of the logistics management system, we assume its input to be the values that change in the course of the procurement, production and marketing processes, such as the cost of the material, financial and information flow constituents intended to ensure these processes. The output is the result, or the final state of a process, i.e. the amount of money paid into the plant's account after the products have been marketed, or indicators of the logistics management effectiveness.

Three different processes occur in the system of logistics management of an industrial plant, just as in any other artificial system. They are: the basic process, feed-back and limitations [12, p.227-228]. The basic process transforms the input into the output. These are the activities of the subject of management, which ensures the move of the material, financial and information flows towards the main goal of the enterprise, viz. making profit. The feed-back will help compare the output sample with the output model and point out discrepancies; it assesses the discrepancies,

works out financial and economic decisions intended to bring the actual state of the material, financial and information flow constituents closer to the required level. The feed-back affects the basic process of the logistics management system so that the actual and model outputs would converge.

The output in the logistics management system is verified by comparing it with the model output (Fig.4) that takes into account the goals (increased logistics management effectiveness), compulsory relationships (transformed constituents of the material, financial and information flows), performance criteria (norms, regulations, financial plans, availability of financial sources etc.). If the output (Y) verified to the model output satisfies the subject of management, the latter will act so as to maintain or improve the existing logistics management system in the plant. If the output does not appear satisfactory, then the influence (A) is implemented, which is aimed at a readjustment of the object, the revision of the properties and relationships of the logistics management system, training and learning that a-priori enable distinguish between an actual and desired state of the logistics management system in the plant. Together with the impact of the external environment (X), the influence (A) affects the object of the logistics management system.

In other words, the feed-back is intended for adjusting the process of logistics management, control of the course of processes in the logistics management system of the plant, and persistent improvements using up-to-date methods of management.

The improved effectiveness of logistics management has a positive influence on the performance of the enterprise as a whole, as an optimum structure of material, financial and information flows ensures a trouble-free production process and sales of products.

According to D.V. Vankovych, the feed-back in the system suggests the following: the formulation of a problem to be solved through the financial and economic management on the base of prior experience and actual data; a financial-economic decision and its implementation; analyzing the results of the financial-economic decision as to its possible modifications and adding its results to the accumulated experience [12, p.231].

Limitations of logistics management system of an industrial plant are put by the goal (function) of the system and compulsory relationships (system qualities). Compulsory functions should be comparable with the goal. The basic function of the logistics management system in industry is an increase of the logistics management effectiveness. The main factors that affect its effectiveness are considered to be: nature of the business, the duration of the production cycle, the amount and variety of consumed raw materials and supplies; geography of counterparties; the billing system; customers' creditworthiness; the quality of banking services; growth in production and sales, and information support.

In this connection, it is necessary to establish criteria or standards for a logistics management system in an industrial enterprise (measurability, efficiency, reliability, optimality, stability) and to decide on the frequency of comparisons of the actual state of a functioning system with the criteria. Further, a mechanism should be developed to identify the causes of poor performance, as well as a mechanism for determining the nature and timing of a required corrective managerial influence [12, p.227]. In this case, the logistics management system in an industrial enterprise would meet the basic requirements, which allow a systems approach, such as: 1) between the constituent elements of the material, financial and information flows, there is a cause-and-effect relationship determined by the course of logistics processes (procurement, production, sales); 2) "management cycles" provide a dynamic functioning; 3) the constituent elements of the material, financial and information flows possess the parameters (regulation, planning), which can be influenced with managerial methods so as to change the entire course of the economic process in an enterprise.

All of the above will provide creating a mechanism for a logistics management in an industrial enterprise, which allows connecting all the system components and interactions of these components. The mechanism defines a set of organizational structures, particular forms and methods of logistics management of the industrial enterprise, and a required normative base. These will ensure achieving and implementing an influence on the results obtained from the logistics

processes in the plant (procurement, production, sales). The organizational-economic mechanism of logistics management of the industrial enterprise is shown in Figure 5.

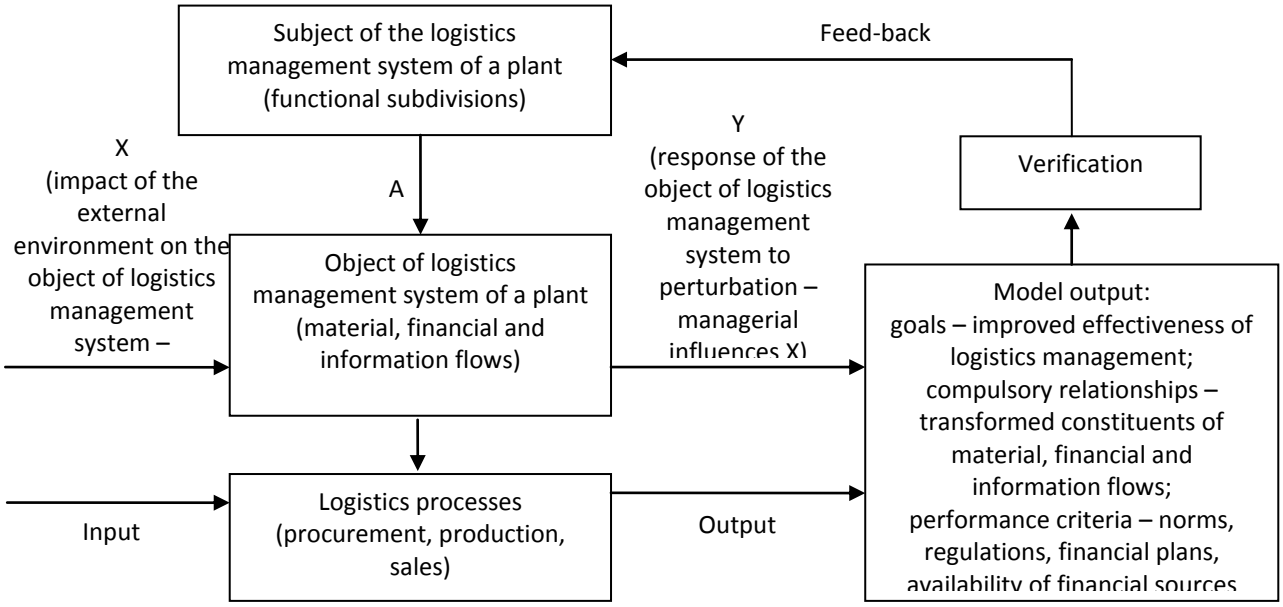


Fig.4. Logistics management system in an industrial enterprise (classic-type cycle) with the feed-back subsystem shown

This mechanism: 1) allows the evaluation of the relationship between strategic goals of the enterprise and the level of its supply with component elements of the material, financial and information flows by providing the managers of the enterprise, subdivisions and functional services with sufficient information to make valid managerial decisions and to promptly adjust the logistics processes (procurement, production, sales). 2) It takes into account the effects and dynamic changes in both internal and external environment. External factors include the peculiarities of market supply and demand, the type of competitive environment and the enterprise's competitive strategies. The internal factors comprise the structure of all major and minor production processes within the enterprise, the level of information support, etc. 3) It allows the simultaneous analysis of specific purposes of the material, financial and information flow constituents, assessment of their predicted amounts considering the transformations they undergo in the course of logistics processes (procurement, production, sales), and the development of the model output in the logistics management system of the industrial enterprise. 4) It enables making a decision about the use of the particular constituents of the material, financial and information flows, the creation of planning and regulatory indicators and their communication to the performers. 5) It allows a continuous accounting, distribution, running control and monitoring of the actual level of constituent elements of the material, financial and information flows. As a rule, these are performed through an internal audit system, which detects deviations in the values of constituent elements of the material, financial and information flows as compared with the target level. This enables identify the inner reserves of increasing the effectiveness of the logistics management.

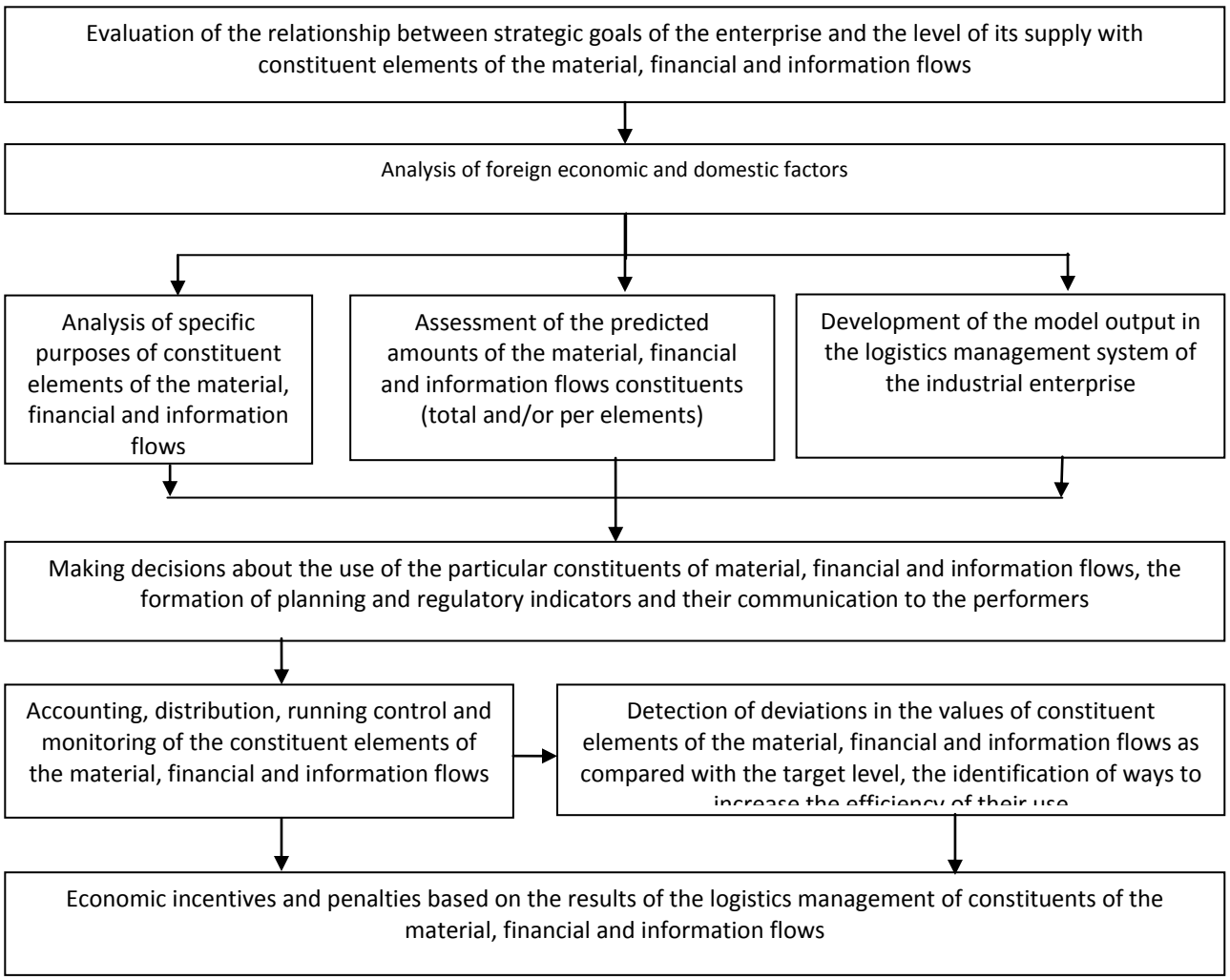
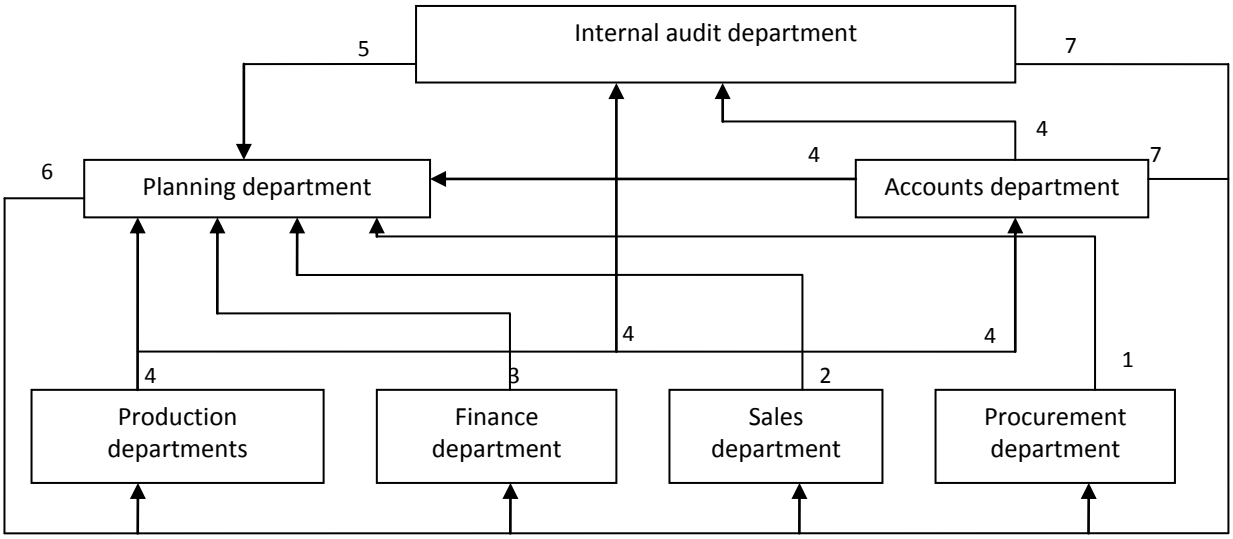


Fig.5. Organizational-economic mechanism of logistics management of the industrial enterprise

V.M. Kmit claims that "the enterprise's management information support is of particular importance for industrial enterprises that operate during recession and economic uncertainty in a highly competitive environment on the one hand, and due to instability of the domestic economy on the other hand" [14, p.53]. On the basis of his studies, we have proposed to streamline the information flows, bring them into a system as part of logistics management system of the industrial enterprise (Fig.6) [13, p.52].

In a highly competitive environment in the period of global integration, which is now accompanied by a high level of uncertainty about the political and economic situation in Europe, the industry should develop an effective logistics management system which takes into account the influence of the external and internal environment, enables assess the actual state of the constituent elements of the material, financial and information flows, reveal reserves, raise competitiveness of the products, and improve the results of financial and economic activity and the financial stability of the enterprise. The basic process elements in the logistics management system are: accounting, analysis, decision making, planning, coordination, regulation, control, influence. A logistics management system of an industrial enterprise is shown in Figure 7 (the managerial methods that may be used in an industrial enterprise are shown in italics). The system allows the implementation of such principles as: goal orientation - providing the production process with the material, financial and information flow constituents of the required quality and in sufficient quantity; effectiveness – the availability of a significant number of sub-systems, the ability to carry out the logistics processes (procurement, production, sales); flexibility - ability to adapt to changes in the environment and to the needs of the market; manageability – possibility of temporary changes in the

system depending on production needs.



The figures stand for:

1 – cost of input factors of production (constituent elements of material, financial and information flows);

2 – prices and market capacity as to the types of products

3 – value of financial resources

4 – actual level of component elements of the material, financial and information flows

5 – conclusions and suggestions for managing the material, financial and information flows constituents

6 – planned targets and performance standards of the management of the material, financial and information flows constituents

7 – incentives and penalties

Fig.6. Information flows under the logistics management of the industrial enterprise

CONCLUSION

The logistic systems approach to the management of industrial enterprise considers the logistics management in relation to the external environment and the procurement, production and sales processes, evaluating the quality of management of the industrial enterprise, eliminating the drawbacks of the statistical analysis.

Thus, the logistics management system of the industrial enterprise is a set of interrelated, interdependent and mutually agreed methods, principles, elements and tasks that specifically affect the constituents of the material, financial and information flows in order to improve the performance, the financial and economic state of the enterprise, and to control the resources within the given parameters and improve the efficiency of logistics activities.

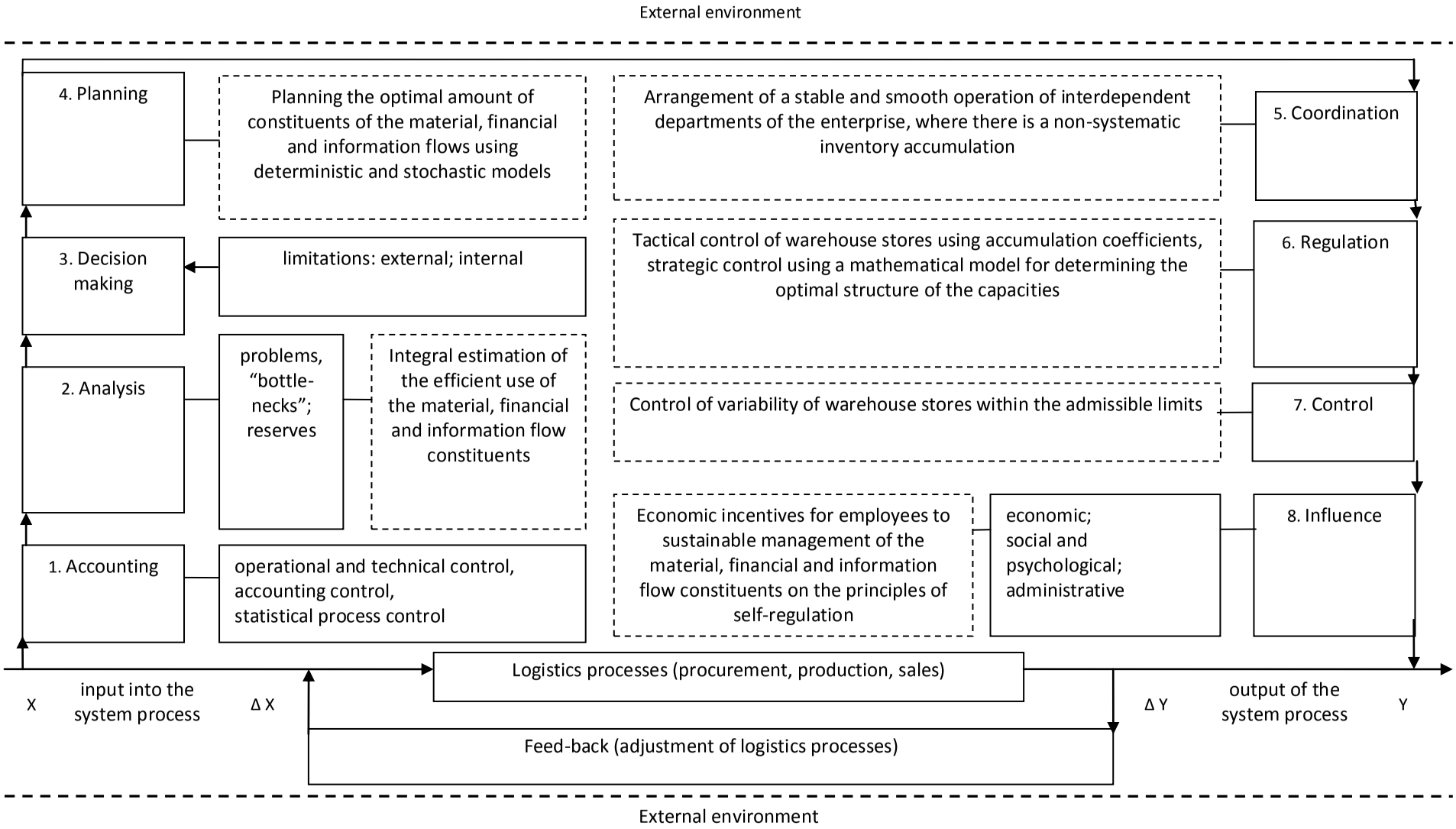


Fig.7. Logistics management system of the industrial enterprise

The definition of the logistics management system as a unity consisting of parts allows for the logistics management of industrial enterprise without isolating the constituent elements of the material, financial and information flows from the total production process. This suggests the creation of the feedforward and feedback (not only between the components, but also between the complexes of the elements that make up the subsystems) and implies revealing the affects of the environment, which enables the system to organize itself. The goals of subsystems that are its component elements should coincide with the goals of the highest order system and in the same way be transformed downwards. There is a two-way relationship between the whole system and its parts, so the properties of the whole are generated by the properties of its elements, and vice versa. The properties of the system are determined not by the sum of properties of its elements, but by the interaction of the elements and their properties.

The elements of the logistics management system of the industrial enterprise, which provide for its development and functioning, are: legislation, normative acts, design and technological maps, compounding change specifications etc. These enable adjust the formation and planning of the constituents of material, financial and information flows, managerial methods and techniques, and information sources.

Exercising the logistics management of the industrial enterprise, one should keep to the principles that would allow the following: to solve the tasks of tactical and strategic regulation of warehouse stores; to organize smooth and rhythmical performance of the interdependent departments of the enterprise where there is an occasional accumulation of warehouse stores; to monitor the remainder of finished products; to control the variability level of warehouse stores within admissible limits; to motivate employees for persistent control of the constituents of the material, financial and information flows on the principles of the system self-regulation.

The logistics system will function and develop and its stages will change under the influence of the logistics management process that is a goal-oriented active process with interrelated activities and influences from the procurement, production, sales and finance departments aimed to organize the proper use of the material, finance and information flow constituents.

The suggested system of the logistics management of the industrial enterprise can serve as a methodological framework for further developments, such as:

- analyzing the influences of individual logistics functions on the object (material, financial and information flows);
- presenting the vector of the subject's managerial influence on the object of management as a sequence of actions needed to perform logistics functions;
- investigating the influence of external and internal "management cycles" in the logistics management system of the industrial enterprise.

REFERENCES

1. *Бакуменко В.* Системно-ситуаційне зображення процесів управління в соціальних системах [Текст] / В. Бакуменко // Вісник УАДУ. – 1999. – № 3. – С. 312–324.
2. *Системный* анализ и структуры управления [Текст] / под ред. В. Г. Шорина. – М. : Знание, 1975. – 303 с.
3. *Оптнер С. Л.* Системный анализ для решения деловых и промышленных проблем [Текст] / С. Л. Оптнер ; пер. с англ. С. П. Никанорова. – М. : Советское радио, 1969. – 216 с.
4. *Пономаренко О. І.* Системні методи в економіці, менеджменті та бізнесі [Текст] : навч. посіб. / О. І. Пономаренко, В. О. Пономаренко. – К. : Либідь, 1995. – 240 с.
5. *Герасимчук В.* Управление предприятием как социально-экономической системой : функциональный подход [Текст] / В. Герасимчук // Экономика Украины. – 2003. – № 4. – С. 12–18.
6. *Современные* теории управления : Теория менеджмента на пороге XXI века [Текст] : учеб. пособ. / под ред. канд. экон. наук., доц. В. Ю. Пашкуса. – СПб. : Изд. дом „Сентябрь" : Изд. дом „Бизнес-пресса", 2003. – 272 с.

7. *Саати Т.* Аналитическое планирование. Организация систем [Текст] : пер. с англ. / Т. Саати, К. Кернс. – М. : Радио и связь, 1991. – 224 с.

8. *Афанасьев В. Г.* Человек в управлении обществом [Текст] / В. Г. Афанасьев. – М. : Политиздат, 1977. – 382 с.

9. *Щекин Г. В.* Теория социального управления [Текст] : монография / Г. В. Щекин. – К. : МАУП, 1996. – 408 с.

10. *Мескон М. Х.* Основы менеджмента [Текст] : пер. с англ. / М. Х. Мескон, М. Альберт, Ф. Хедоури. – М. : Дело, 1998. – 800 с.

11. *Советский* энциклопедический словарь [Текст] / гл. ред. А. М. Прохоров. – 3-е изд. – М. : Сов. Энциклопедия, 1984. – 1600 с.

12. *Ванькович Д.* Організація систематичного підходу в управлінні фінансовими ресурсами [Текст] / Д. Ванькович // Регіональна економіка. – 2001. – № 3. – С. 225–231.

13. *Іванова М. І.* Системний підхід до управління оборотними коштами [Текст] / М. І. Іванова // Академічний огляд. – 2004. – № 1. – С. 48–53.

14. *Кміть В. М.* Системний підхід до управління накладними витратами підприємств [Текст] / В. М. Кміть // Фінанси України. – 2002. – № 7. – С. 51–57.

15. *Іванова М. І.* Удосконалення методів управління оборотними коштами на промислових підприємствах [Текст] / М. І. Іванова // Економіка : проблеми теорії та практики : зб. наук. пр. – Вип. 242 : В 4 т. – Дніпропетровськ : ДНУ, 2008. – Т. 2. – С. 442–460.

16. *Уотерс Д.* Логистика. Управление цепью поставок [Текст] : пер. с англ. – М. : ЮНИТИ–ДАНА, 2003. – 503 с.

METHODOLOGICAL FOUNDATIONS OF CLUSTER ANALYSIS TO SUBSTANTIATE THE SELECTION OF FOREIGN SUPPLIERS UNDER GLOBALIZATION OF EXTERNAL ECONOMIC RELATIONS

Helena Varyanichenko, Valeriy Zagorudko

Methodological bases of substantiation of import operations management of company, which, unlike existing foreign suppliers, include optimization of foreign suppliers by the method of «the relationship between groups» cluster analysis and allow to take into account any number of numerical indices of different orders, identify groups of companies with similar characteristics, that allows to diversify and increase import effectiveness.

INTRODUCTION

The main defining features that characterize modern international business are internationalization and globalization. At this stage of development Ukraine is integrating into the world globalization process and becomes a full member of the world trade. Globalization is a natural step in the development of integration processes of the modern global economy. It is initiated and developed especially at the micro level, is to separate independent entities. They establish the production, trade, scientific, technical, financial links with their foreign partners. The main feature of globalization at the micro level is the overall strategic orientation of companies, worldwide in nature, which leads to macroeconomic consequences already at the national level.

Development of the world's leading product markets is characterized by a variety of consumers and suppliers, a high level of price and quality competition. The most modern businesses operate globally. Globalization marks the entry into a new phase of business activity because many

Ukrainian enterprises have already gained some segments of the foreign markets, they have strong and mutually beneficial relationships with foreign partners.

In the current economic conditions in the market operates a large number of suppliers of similar material resources, so there is the problem of choosing an attractive and efficient supplier that would be a reliable partner in business and had the ability to timely and fully meet the needs for material resources, organization of the buyer. Enterprise-buyer compelled to form competitive requirements to suppliers and other resources with minimal expenditures. This complicates the process of evaluating and selecting a supplier.

Topicality of this study is directly related to the need to find innovative solutions in the field of International Management in cooperation of enterprise with suppliers and consumers in globalized markets.

Such Ukrainian and foreign scientists as Anikin B.A., Bakanov M.I., Balabanova L.V., Blank I.O., Buzukova E.A., Voinarenko M.P., Vitlinsky V.V., Hadzhynskyy A.M., Potter L.A., Ivchenko I.Y., Kozlov A.P., F. Kotler, Lihonenko L.A., Linders M.R., Mazaraki A.A., Moskvitina T.D, Cradle Y.M., Novikov N.V., Raysnisch E.G., Saaty T., Sergeev V.I., Smolina I.V., Stepanova O.V., Sumets O.M., Tereshchenko O.O., Fedko V.P., Firon H.E., Cherepov V.V., J. Shraybfeder and others studied methodological instruments of substantiation of the choice of suppliers.

At the same time a number of unsettled problems remained that arise when choosing a supplier. The majority of authors offer expert valuation methods or the method of weighted average evaluation limited with recommendations for a typical set of performance indicators. Foreign and domestic experts suggest models that combine expertise, methods of forming limits of some indicators and economic calculations (models) using purchase prices of suppliers.

Despite having a huge number of scientific developments regarding the approaches to optimization of suppliers there is an important problem that confronted the existing mathematical models, namely, different order of quantities characterizing the quantitative and qualitative features of the supplier. As practice shows, in most cases a manager is only available company’s "expert", who buys this product group, which contains a large proportion of unwanted subjectivity. Expert evaluation - a universal method has been successfully applied in many cases and often finds himself only suitable for evaluation, but there is a need to develop other techniques based on analytical calculations, which may give more accurate and adequate results.

The purpose of this paper is to develop methodological instruments for managing imports on the basis of cluster analysis of suppliers.

The analysis of scientific papers Bull A., Garkavenko S.S., Duran B., Edel P., Kostenko I.V., Odell P., Tkachenko A.G., Shelehdy B.G. and others in the field of possibilities of cluster analysis has established the feasibility of using this method in the optimization of enterprise suppliers that will eliminate the above shortcomings of existing approaches.

Application of the proposed methodological approach to the study of the choice of suppliers allows companies to reduce overall expenditures and it is the basis for their performance in today's globalized environment of international business.

1. THE STUDY OF THE MAIN MODERN METHODS OF SUPPLIER SELECTION

The efficiency increase of industrial enterprises is connected with the solution of a number of objectives to improve product quality, optimize inventory levels, and integrate suppliers and customers into a single system. Interaction and coordination of market economic agents determines the main directions of the suppliers. Among them, selection of suppliers is considered as an important task of enterprise in the procurement of raw materials and other goods for their own use. Purchases for the needs of the enterprise is the decision process by which the company establishes a requirement in such goods, raw materials and services, and also detects, evaluates and selects specific brands of products and suppliers from among the available in the market [1].

An important step in this task is a search of potential suppliers. Different methods can be used which are well studied in the literature: the announcement of the competition (tender), the study of advertising materials; visiting fairs, exhibitions, correspondence or personal contacts with potential suppliers and other methods [5,6,8,10]. Due to the complex search the list of potential suppliers of material resources is formed.

Supplier selection involves consideration of various characteristics (parameters) of the counterparty. Thus, the problem reduces to the evaluation of selected parameters and the choice of the basis of the most attractive supplier. For practical use it is necessary that indicators were quantified and should be borne in mind that they differently affect the attractiveness of the supplier. Often for the evaluation and selection of suppliers are used the following parameters: price, product quality, reliability of supplier, distance of supplier from consumer, the term of orders, frequency of deliveries, payment terms, minimum consignment, discounts and its size, vendor share in covering expenditures, the completeness of the range, the conditions of risk allocation, availability of service, advertising support, supplier reputation, financial position and its credit provider [5, 6, 8, 10].

The most common method of selection of suppliers is a method of rating assessment highlighting the main and additional criteria for selecting [3].

According to the method of rating assessment the basic criteria for choosing of supplier are selected, then with a help of their significance is established with expert way. Value is calculated for each criterion rating and final rating for a particular supplier. Comparing the values obtained for ranking different suppliers, determine the best partner. If the rating score gives the same results for two or more suppliers for key criteria, the procedure is repeated using additional criteria. But keep in mind that when referring to potential suppliers is difficult, and sometimes impossible, to obtain objective data are required for experts.

Some authors in the search for reserves to reduce the total expenditures enterprises related to the purchase process, offer simultaneous use of a method for assessing the expenditures and method of dominant characteristics, indicating their advantages and disadvantages [3, 9].

The method of assessment of expenditures is sometimes called as costly-coefficient method or the "method of missions." It is that the whole study process is divided into several supply options (missions) and for each carefully are calculated all expenditures and income. Consequently, the data are obtained for comparison and selection of solutions (missions). For each supplier all basic expenditures and income are calculated (including all logistical risks). Then from a set of options (missions) is selected the most profitable (by the criterion of total income).

In fact it is a kind of ranking method (criteria) for the cost. The method is interesting in terms of valuation and allows to determine the "value" supplier of choice. The disadvantage of the method is that it requires a large amount of data and analysis of large amounts of information on each supplier. As an example, we can bring a list of logistics expenditures connected with the purchase of a particular product:

- marketing expenditures connected with the study of conditions in the market price of the product;
- expenditures connected with the search for possible suppliers and establishment of business contacts with them (travel, telephone calls, data processing, etc.);
- expenditures connected with finding and obtaining information about the cost of similar products from different suppliers;
- expenditures connected with the analysis of qualitative indices of goods from different suppliers (claim, the cost of rejection, the possibility of repair or restoration of quality indicators of the goods by the customer, etc.);
- expenditures for handling, warehousing and storage of goods;
- transportation expenditures of supplier and buyer, payment of customs, freight forwarding, insurance services through the delivery of goods;
- expenditures of insurance logistics risks etc.

All of these expenditures elements should be considered, assessed and controlled.

Method of dominant characteristics is concentrated on one of the selected parameter (criteria). This parameter can be: the lowest price, best quality, delivery schedules, inspires the most confidence, etc. The advantage of this method is its simplicity, the disadvantage is ignoring other factors-selection criteria.

Method of categories of benefit: in this case the assessment of supplier, including the choice of the method of its evaluation, depends on the information that flows from many parts of the firm. Engineering services give his assessment of the ability of the supplier to produce high-tech products and can competently judge its quality. The dispatch reports on time delivery of purchased materials. Production departments report on the ease and convenience of material resources use in the production process. This method implies the presence of a large and diverse data from many sources, which allows us to consider every factor along with others, while it may be a key factor, such as ease of use of the product in the manufacturing process.

Michael R. Linders and Harold E. Fironov pay special attention to an informal evaluation of supplier by employers of Buyer, which includes an assessment of personal contact between the supplier and the buyer of the company of departments, information are obtained from conversations at professional meetings, conferences and in media [6]. Today, almost all small companies are assessing sources in informal manner. When consumers and purchasing department are in daily personal contact and it is a fast feedback to the assessment of the supplier, this "informal" approach is entirely justified and appropriated.

The authors consider a stage-by-stage process and criteria for selecting suppliers and without concrete methods [1].

Substantiation of suppliers selection for multilevel system of logistics criteria can be carried out by comparison pairs using environment Microsoft Office Excel [3]. This method has both advantages and disadvantages. However, it takes into account the real situation for the coordination of various problems by identifying priorities. In addition, this method takes into account the "human factor", which is an important advantage of it.

The economic literature offers to optimize management decisions by dynamic programming using function R.E. Bellman criterion for "income" and calculate the integral index forecasting economic efficiency of commercial transactions by commensurability of values in multidimensional space under conditions of risk [3].

Developed numerous economic and mathematical model of study the supplier must meet the following requirements: accessibility, availability of software, efficiency, rationale criteria for assessing the quantity and quality, involvement of professionals in the role of experts and must be focused on achieving the strategic goals of the company.

Typically, the base of models includes the most important criteria for determining of selection. To preliminary and final selection of suppliers involves expert opinion. Preliminary choice provides a basis for the selection of possible suppliers and final – for the selection of potential suppliers. If the supplier from the group of possible suppliers does not answer basic criteria, it is not included in the list of potential suppliers. To establish the significance criteria matrix of comparisons with pairs is used [3].

Thus evaluation of suppliers can be represented as a tree of purposes. On the ground level there is a generalized indicator that characterizes the attractiveness of the supplier. At the first level there are indicators that affect the attractiveness of the supplier. Then there are local criteria, set their priority, conducted normalization of criteria due to their different dimension and determined attractiveness provider according to principles of goal formation on the value of additive utility functions [10].

Multiinformation systems providing automation of the main functions of the purchases process, collection and processing necessary for a decision on the choice of supplier information, and developers actually use only those methods that are described above. That is, the use of expertise in choosing of a supplier or assess the average weighted method with elements of economic price calculation is the only alternative example of this can be such a system as SAPR / 3 [7].

Returning to the urgency of the problem it can be argued that the choice of optimal suppliers is a time-consuming process, but to produce the specification of interaction of factors that affect the adoption of alternative solutions and allows us to solve a number of tasks to improve the efficiency of enterprise. It is proposed to apply the method of cluster analysis to select suppliers, which today has a good software implementation and can give a more accurate and adequate results, as it allows time to consider an unlimited number of numerical indices of different orders and determine groups of companies with similar characteristics and then making strategic decisions about each cluster.

2. THE GENERAL PRINCIPLES OF THE METHOD OF USING CLUSTER ANALYSIS APPARATUS FOR OPTIMIZING SUPPLIERS

The term «cluster» is translated from English as "bunch, bouquet," or as a "group, clusters, focus", etc. As a mathematical term - refers to physical proximity logically related objects within the same region. In other words, it is an association of homogeneous elements, which can be considered as a separate unit, which has some properties [4].

Cluster analysis is a multivariate statistical procedure that involves the collection of data to store information about the sample objects, and organize objects in a relatively homogeneous group [4].

The task of cluster analysis is that based on the data contained in the set X, the set of objects G divided by m (m - integer) clusters (subsets) Q1, Q2, Qm so that each object Gj belonged to one and only one subset of the partition and the objects belonging to the same cluster were similar, while objects appropriate to different clusters are dissimilar [2].

Solution of the problem of cluster analysis is a partition that satisfies some optimality criterion. This criterion may be some functionality that expresses the desirability of different levels of decomposition and groups, called target function. As the objective function can be taken intragroup sum of square of deviation [2]:

$$W = \sum_{j=1}^{n} (x_j - \bar{x})^2 = \sum_{j=1}^{n} x_j^2 - \frac{1}{n}\left(\sum_{j=1}^{n} x_j \right)^2 , \quad (1)$$

where: x_j - Is the measurement j-object.

To solve the problem of cluster analysis it is necessary to define the concept of similarity and diversity. Objects i, j would fall into one cluster when the distance (distance) between points $X_ı$ i X_j would be quite small and would fall into different clusters, when this distance is sufficiently large. So getting one or different clusters of objects is determined by the distance between the concept $X_ı$, X_j and Ep, where: Ep – p - Dimensional Euclid space.

Value $d\ (X_i,\ X_j)$ for $X_i,\ X_j$ is called the distance between X_i and X_j and is equivalent to the distance between G_i and G_j respectively selected characteristics ($F_1, F_2, F_3, ..., F_p$).

The most commonly is used Euclid distance [2]:

$$d_2(X_i\ ,\ X_j) = \left[\sum_{k=1}^{p} \left(x_{ki} - x_{kj} \right)^2 \right]^{\frac{1}{2}} \quad (2)$$

Let n of measurements $X_1, X_2,..., X_n$ is represented as a data matrix of size p × n [2]:

$$x = \begin{pmatrix} x_{11} & x_{12} & ... x_{1n} \\ x_{21} & x_{22} & ... x_{2n} \\ x_{p1} & x_{p2} & ... x_{pn} \end{pmatrix} = \left(X_1, X_2,..., X_n \right) \quad (3)$$

Then the distance between pairs of vectors $d(X_ı,X_j)$ can be represented as a symmetric matrix of distances [2]:

$$D = \begin{pmatrix} 0 & d_{12} & ...d_{1n} \\ d_{21} & 0 & ...d_{n} \\ d_{n1} & d_{n2} & ... 0 \end{pmatrix} \quad (4)$$

The notion opposite distance is the concept of similarity between objects G_i. і G_j. Material non-negative function $S(X_i;X_j)=S_{ij}$ called the degree of similarity.

Value pairs similarity measures can be combined in a matrix of similarity [2]:

$$S = \begin{pmatrix} 1 & s_{12} & ... & s_{1n} \\ s_{21} & 1 & ... & s_{2n} \\ s_{n1} & s_{n2} & ... & 1 \end{pmatrix} \quad (5)$$

The value of S_{ij} is called the coefficient of similarity. Today there are a lot of cluster analyses: the relationship between the groups (Between-groups linkage), communication within groups, a close neighbor, distant neighbor centrode clustering, median clustering, and Ward's method (Ward-Method) [4]. Since some of the proposed methods have obvious drawbacks (a close neighbor, distant neighbor), and others very little visual and poorly amenable to further analysis, it is recommended to use the most clear method of Between-groups linkage.

Quite often, the criterion of integration (number of clusters) is changing of the corresponding function. For example, the sum of squares deviation [2]:

$$E_j = \sum_{i=1}^{n} r_{ij}^2 - \frac{1}{n}\left(\sum_{i=1}^{n} r_{ij}\right)^2 \quad (6)$$

To the process of forming groups must accord minimum consistent growth of criterion of E value. The presence of a sharp jump in the value of E can be interpreted as a characteristic number of clusters, objectively existing in the studied population. So, thus determining the best number of clusters is to identify jumps above the phase transition from the strongly to linked to weakly linked of objects.

The best known method for matrix representation of distances or similarities is based on the idea dendrogram or tree diagram. Dendrogram can be defined as a graphic representation of the results of the sequential clustering which are carried out in terms of the distances matrix. With dendrogram can be represented graphically or geometrically clustering procedure, provided that the procedure operates only with the elements of the matrix of distances or similarities.

A number of algorithms of cluster analysis can be divided into hierarchical and non-hierarchical. Hierarchical algorithms associated with the construction of the dendrogram, divided into: agglomerative characterized by consistent association of primary elements and corresponding reduction in the number of clusters and dyvyzymni (scored), in which the number of clusters increases, starting from one, resulting in the formation sequence decomposing groups. Non-hierarchical methods are more resistant towards emission wrong choice metric insignificant variables included in the framework for clustering and so on. But to use them to advance to record the resulting number of clusters usually stop and, for that reason, the initial cluster center. Last time significantly displayed on the efficiency of the algorithm. Since there is no reason to artificially set this condition, it is advisable to use hierarchical methods.

Thus, the application of cluster analysis requires to solve some tasks:

1. Formation of initial data – selection of metrics, choice of method of standardizing how to work with dependent samples.

2. Decision-making - how many clusters should be formed, which clustering method to use or not use all observations, whether to exclude certain subsamples.

3. Analysis of the results - how the resulting partition different from random, whether it is a reliable and stable in subsamples that the relationship between the results of clustering and variables that did not participate in the process of clustering, can interpret the results.

Thus cluster analysis algorithms are appropriate to use on market segmentation suppliers company.

3. THEORETICAL BASES OF CLUSTER ANALYSIS TO JUSTIFY THE CHOICE OF FOREIGN SUPPLIERS

Methodological bases of justification control imports on the basis of cluster analysis of suppliers include:

1. Market Research of foreign suppliers.
2. The selection of sample size for cluster analysis (potential counteragents).
3. Defining of a set of attributes (criteria of imported goods), which held clustering.
4. Determination of distance (square of Euclid distance) and the similarity measure between objects method of communication between groups, where each observation forms its own separate cluster. Distance between clusters is the average of all distances between all possible pairs of points from two clusters.
5. Using hierarchical cluster procedure in two stages to create groups of similar objects method of communication between the groups.

The purpose of the first stage is on the basis of characteristics that determine the quality of raw materials to research and exclude from further consideration the companies with its poor quality.

The purpose of the second stage is to identify companies with the best indicators for future cooperation.

6. Verification of the results of cluster analysis by identifying cluster structures under variable that indicates the cluster identity and similarity of signs in the middle of the cluster characteristics and differences between different clusters.
7. Elaboration of the basic conditions for import contracts with future companies-counteragents of the selected clusters.

More attention will focus specifically on the practical implementation procedure of cluster analysis of foreign suppliers, which is conducted using modern software SPSS [2], and interpretation of the results obtained by the proposed methodological bases.

The selection for clustering is formed - 14 suppliers of synthetic fatty acids for the production of household chemical goods.

Tested variables for cluster analysis are chosen:

- Price (contract price for 1 kg);
- Solubility in water, adsorbition ability, the ability to form thixotropic structure, hydrophilic-lipophilic balance (put with experts marks from 1 to 100, the higher quality - the higher mark of the experts);
- Delay (number of days deferred payment offered by suppliers).

Text change (label observation) for cluster analysis will serve business name of supplier. Output table for cluster analysis takes the form (Table 1).

At the first phase is applied hierarchical cluster analysis for clusters of 4 variables (solubility in water, adsorption ability, the ability to form thixotropy structure, hydrophilic-lipophil balance) that characterize the quality of raw materials. The review provides an overview of belonging (Table 2), from which you can determine the sequence of building clusters and their optimal number.

To determine how many clusters should be considered optimal, crucial indicator derived under the heading "factors." The value of this ratio shows the distance between two clusters defined on the basis of the chosen distance measure based on prescribed conversion values. At the stage where the measure of the distance between two clusters increases abruptly, the process of integration into new clusters must stop, because otherwise there would have merged clusters located at a relatively large distance from each other.

The data in Table 2 shows that at the 14^{th} stage there is a race factor, suggesting that it is not possible to combine cluster 1 and 3. This means that after the formation of three clusters, we no longer have to do any these associations, the result with three clusters is optimal.

Table 1.

Data for the I Phase of cluster analysis of Suppliers

№ supplied-ratio	Country of supplier	Price, UAH	Delay-point, days	Solubility in water	Adsorbit-ion ability	The ability to form thixotropic structure	Hydrophilic-lipophilic balance
1	Russia	3,25	20	70	60	55	50
2	England	4,10	0	100	90	100	90
3	Czech Republic	3,47	0	85	75	75	70
4	Poland	3,55	15	90	75	75	70
5	Russia	3,27	20	70	60	65	50
6	Spain	3,65	0	80	80	80	70
7	Italy	3,90	0	80	75	70	70
8	Turkey	3,96	10	75	60	60	60
9	Poland	3,20	60	100	90	90	100
10	China	2,75	30	80	70	70	80
11	China	2,60	40	80	75	75	80
12	China	2,95	30	80	80	70	70
13	China	2,95	90	65	60	60	50
14	Germany	3,65	10	100	90	90	100
15	USA	3,28	60	100	100	95	90
16	USA	3,85	0	100	90	100	100

Table 2.

Order of the I Stage of agglomeration of cluster analysis

stage	Cluster combined		Odds	Stage of cluster first appearance		The next stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	9	14	0,000	0	0	10
2	7	12	25,000	0	0	8
3	3	4	25,000	0	0	8
4	5	13	50,000	0	0	6
5	10	11	50,000	0	0	12
6	1	5	75,000	0	4	11
7	2	16	100,000	0	0	10
8	3	7	100,000	3	2	9
9	3	6	112,500	8	0	12
10	2	9	150,000	7	1	13
11	1	8	166,667	6	0	14
12	3	10	180,000	9	5	14
13	2	15	200,000	10	0	15
14	1	3	1092,857	11	12	15
15	1	2	2949,545	14	13	0

According to the theory, the optimal number of clusters is equal to the difference between the number of observations and the number of steps after which the rate increases abruptly. In our case: the number of observations (firms-suppliers) is 16, the number of steps after which the rate increases abruptly - 13, and the difference between these values is the number of clusters that we set is 3.

Dendrogram (Fig.1) visualizes the process of merging given in the overview table of agglomeration procedure (there is no table in this article) and identifies the merged clusters and the coefficients at each step. It shows no output coefficients, but the value given to the scale from 0 to 25. Clusters created by the merger are shown by horizontal lines. Thus, enterprises suppliers have formed three clusters.

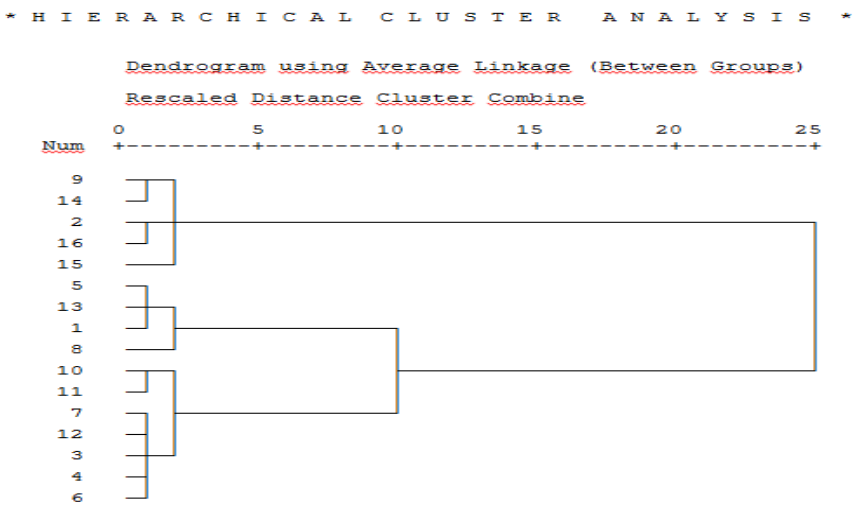


Fig.1. Dendrogram of the I stage cluster analysis

The first cluster consists of 4 companies (1, 5, 8 and 13), in the second - 5 companies (2, 9, 14, 15, 16), in the third - 7 (3, 4, 6, 7, 10, 11, 12). The results of calculations for cluster profiles that represent the average values of the variables included in the analysis and are distributed in cluster membership, is shown in Table. 3.

Table 3.

Mean values and deviation of variables of the I stage of cluster analysis

Clusters	Variables	Solubility	Adsorbition ability	Thixotropic ability	Hydrophilic-lipophilic balance
1	Average	70,0000	60,0000	60,0000	52,5000
	N	4	4	4	4
	deviation	4,08248	0,00000	4,08248	5,00000
2	Average	100,0000	92,0000	95,0000	96,0000
	N	5	5	5	5
	deviation	0,00000	4,47214	5,00000	5,47723
3	Average	82,1429	75,7143	73,5714	72,8571
	N	7	7	7	7
	deviation	3,93398	3,45033	3,77964	4,87950
together	Average	84,6875	76,8750	76,8750	75,0000
	N	16	16	16	16
	deviation	12,17494	12,76388	14,36141	17,51190

Enterprises belonging to the first cluster have the lowest rates of all four variables - manufacture products considerably below the average. To the second cluster are included those enterprises vendors which sell its products of the highest quality. The third cluster comprises the companies that sell products close to the average. To each of the enterprises supplying 1 cluster is assigned a value of "quality" - 60.63, 2 cluster - 95.75, 3 clusters - 76.07.

Opportunities SPSS software also allows us to construct scattering diagrams that visually represents distinct groupings of points, is accumulations firms of analyzed. The decisive criterion for determining the similarities and differences between two suppliers is the distance between two points on a scatter chart that meets these suppliers. The most common way to determine the distance between two points on the plane formed by the coordinate axes x and y, the mayor is the Euclid measure [2]:

$$P=\sqrt{\sum_{i=1}^{n}(A_i - B_i)^2} \quad (7)$$

when: P – distance between objects A and B;

A_i – value i - Object properties A;

B_i - value i - Object properties B.

According to formula Euclid measure, a variable that has a large value, almost completely dominates the variable with low values. The solution of this problem is the of z-transformation (standardization) of variables. Standardization results in values of all variables converted to a common range of values, namely from - 3 to +3.

Enterprises of cluster1, whose products demonstrated dissatisfaction values on the criterion of "quality», are excluded from further consideration.

The hierarchical cluster analysis was carried out with the rest 12. Output table for cluster analysis is Table 4. The order of procedure is similar to stage 1. Therefore, the final results of agglomerations are given (Table 5, 6, Fig.2).

Table 4.

Data for stage 2 of cluster analysis suppliers

№ provider	Country of supplier	Price, UAH	Delay, days	Quality
1	England	4,10	0	95,75
2	Czech Republic	3,47	0	76,07
3	Poland	3,55	15	76,07
4	Spain	3,65	0	76,07
5	Italy	3,90	0	76,07
6	Poland	3,20	60	95,75
7	China	2,75	30	76,07
8	China	2,60	40	76,07
9	China	2,95	30	76,07
10	Germany	3,65	10	95,75
11	USA	3,28	60	95,75
12	USA	3,85	0	95,75

Table 5.

Order of stage 2 of agglomeration of cluster analysis

stage	Cluster combined			Stage cluster first appearance		
	Cluster 1	Cluster 2	Odds	Cluster 1	Cluster 2	The next stage
1	6	11	0,029	0	0	10
2	2	4	0,148	0	0	5
3	7	9	0,182	0	0	6
4	1	12	0,285	0	0	8
5	2	3	0,455	2	0	7
6	7	8	0,516	3	0	10
7	2	5	0,702	5	0	9
8	1	10	0,739	4	0	9
9	1	2	4,394	8	7	11
10	6	7	6,256	1	6	11
11	1	6	8,559	9	10	0

Thus, the number of observations (firms suppliers) is 12, the number of steps, after which the rate increases abruptly is 8, the difference between these values is the number of clusters which is 4.

Three companies belonging to the first cluster are of the highest price, the lowest delay and highest quality. The second cluster included 4 companies-suppliers that are priced above average, below average quality, with little delay. The third cluster includes two enterprise suppliers which sells products close to the average, has the highest delay and high quality. The fourth cluster includes 3 companies-suppliers vendors who sell products at the lowest prices, lower average quality of the deferred payment within 30 days.

According to the results obtained it is advisable to make decisions on new contracts for the purchase of only enterprises of cluster 3. Taking as a basis the amounts of required purchases it is possible to predict the efficiency of foreign suppliers according to the proposed methodological bases.

Table 6.

Mean values and deviation variables of stage 2 of cluster analysis

Clusters	Variables	price	postponement	quality
1	Average	3,8667	3,3333	95,7500
	N	3	3	3
	deviation	0,22546	5,77350	0,00000
2	Average	3,6425	3,7500	76,0700
	N	4	4	4
	deviation	0,18679	7,50000	0,00000
3	Average	3,2400	60,0000	95,7500
	N	2	2	2
	deviation	0,05657	0,00000	0,00000
4	Average	2,7667	33,3333	76,0700
	N	3	3	3
	deviation	0,17559	5,77350	0,00000
together	Average	3,4125	20,4167	84,2700
	N	12	12	12
	deviation	0,46831	23,20446	10,13380

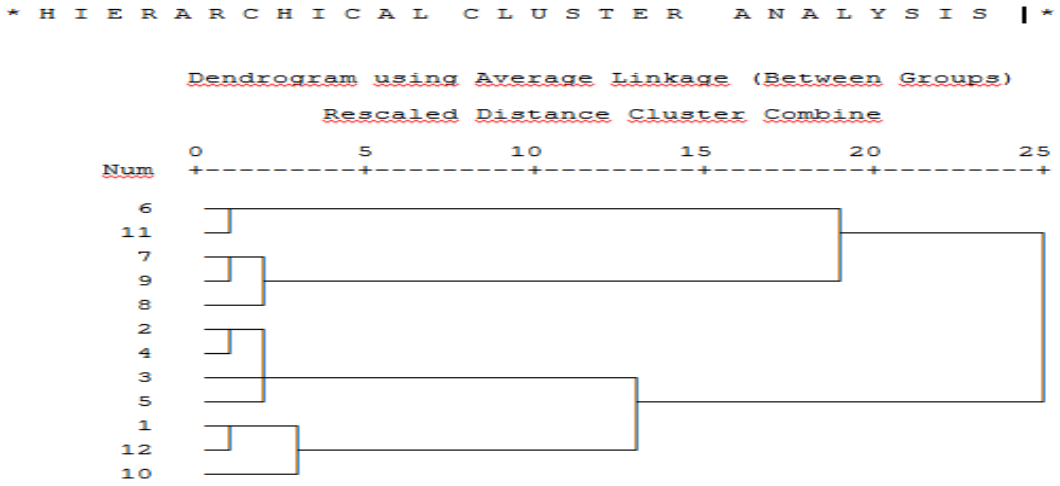


Fig.2. Dendrogram of stage 2 of cluster analysis

CONCLUSION

Company in various international agreements acts as seller, buyer and partner. This different state of enterprise provides its active position in relation to the choice of counteragents. Representatives from both sides of the market - buyers and sellers - conduct an analysis and evaluation of potential suppliers, spend considerable resources to make a decision on the implementation of the agreement, signing contracts etc.

As a result of the methodological research, methodological bases of management of import company operations have been substantiated, which, unlike existing foreign suppliers include optimization of the method of cluster analysis of the relationship between groups and to simultaneously take into account any number of numerical indices of different orders and determine groups of companies with similar characteristics. Management decisions based on the proposed

approach provide an opportunity to diversify and improve importing and substantiate a strategy of interaction with suppliers.

REFERENCES

1. Балабанова Л. В. Комерційна діяльність: маркетинг і логістика: навч. посіб. [Текст] / Л. В. Балабанова, А. М. Германчук. – К. : Професіонал, 2004. – 288 с.
2. Бююль А., Ефель П. SPSS: Искусство обработки информации. Анализ статистических данных и восстановление скрытых закономерностей. [Текст] / А. Бююль, П. Ефель. – СПб. : ООО «ДиаСофтЮП». – 2005. – 608 с.
3. Гончар Л.А. Економічно-математична модель обґрунтування вибору постачальників. Режим доступу: http://www.nbuv.gov.ua/portal/ Soc_Gum/Tiru/2008_25_26/42.pdf.
4. Дюран Б., Оделл П. Кластерный анализ.: Пер. с анг. Е.З. Демиденко / Под ред. А.Я. Боярского. [Текст] / Б. Дюран, П. Оделл. – М.: Статистика. – 1997. – 186 с.
5. Котлер Ф. Основы маркетинга: Пер. с. англ. [Текст] / Ф. Котлер. – М.: Прогресс, 2003. – 736 с.
6. Майкл Р. Линдерс. Управление снабжением и запасами. [Текст] / М. Р. Линдерс, Х. Е. Фирон. – СПБ: ООО "Виктория плюс", 2002. – 768 с.
7. Новиков М.В. Маркетингово - экономическая модель выбора поставщиков. Режим доступа: http://www.cfin.ru/management/manufact/ attest_sup.shtml.
8. Петрович Й.М., Захарчин Г.М. Організація виробництва: Підручник. [Текст] / Й.М. Петрович, Г.М. Захарчин. – Львів: "Магнолія плюс", 2006. – 400 с.
9. Саати, Т. Принятие решений. Метод анализа иерархий [Текст] / Т. Саати. – М. : Радио и связь, 1993. – 287 с.
10. Степанова О.В. Модель багатокритеріальної оцінки і вибору постачальника. Режим доступу: http://library.kpi.kharkov.ua/Vestnik/2012-05.pdf.
11. Черепов В. вибір постачальників товарів торговельним підприємством. Режим доступу: http://www.nbuv.gov.ua/portal/soc_gum/tovary/2012_1/3.pdf.

ENTERPRISES MANAGERIAL STAFF'S COMPETITIVENESS MANAGEMENT

Grosheleva O.G., Usatenko O.V., Skrypkina D.A.

The questions concerning managers' activity efficiency estimation are described. The index of managers' team competitiveness is proposed for such estimation. The factors forming managers' competitiveness are detached and substantiated, the mathematics mechanism for their quantity estimation is proposed.

INTRODUCTION

One of the main features of the open economy is competition among the market players that forces them to maintain a balanced approach to resource management aimed to take into account the feature mentioned both on micro- and macro-level. Moreover, current globalization of the business on the one hand creates additional opportunities for enterprises and countries, while on the other hand, it significantly complicates the process of management forcing to consider the increasing quantity of information. As a result a certain decrease in clarity and validity of managerial actions can be observed due to emerging synergy effect. Thus, a constant increase in the competitiveness level is a reasonable initiative to sustain a rivalry pressure, boost organizational efficiency, maintain attractive market positions and ensure long-term success.

The urgency of the competitiveness management on macro-level is proved by the fact that the issue in question has gotten to the scope of international economic organizations. Speaking of Ukraine it has to be mentioned that its competitiveness is analyzed in the frame of the research of the World Economic Forum (WEF) [6]. In 2012, global rating of economic competitiveness of Ukraine was ranked 73rd of 144 positions, that is nine points higher comparing to previous ranking issued in 2011. The highest level of economic competitiveness in 2012 was demonstrated by the following countries: Switzerland, Singapore, Finland, Sweden and the Netherlands. Practical value of the data submitted is more than presentation of the countries' range based on their level of competitiveness. Such approach allows detecting a reasonable vector in state's development (both short- and long-term) which is based on outlining the success factors and obstacles for stable development of the national economy.

The nature and essence of competitiveness is studied in the works of many domestic and foreign scientists, however the common understanding of that term is still absent. Taking into consideration the fact that the uniformity in understanding of key conceptions is a starting point of any research, the determination of etymology of "competitiveness" is important. So, in the context of the following research competitiveness is understood as the one's capability to endure an intense competition and resist competitors' wars [4]. Deep analysis shows that competitiveness itself is a complex concept penetrating all levels of the economic activities. For example, competitiveness of the country is considerably determined by competitiveness of the enterprises functioning on its territory while there competitiveness depends on the competitiveness of the goods produced. Such concept of outlining different levels of competitiveness allows displacing attention toward micro-level initiatives and underlines additional sources of strengthening country's competitive positions acting on a local (enterprise) level.

Considering the degree of globalization along with the evolution of the means of communication, opportunities brought by high technologies or other scientific innovations may be quickly copied by competitors. This fact considerably reduces chances for developing a stable competitive advantage. Thus success of the strategic development of modern industrial enterprises is mostly determines by their intangible assets, such as capacity to realize intellectual and creative

potential of the personnel. In this way ensuring harmonious and collaborative team work while developing management decisions may determine sustainability of an enterprise on the market. Thus the managerial personnel (mostly top-management) is a key intangible asset of any enterprise. Therefore it is necessary to apply some procedures that are going to allow objective estimating of the managers' team competitiveness level and its influence on integrated business competitiveness. Analyses of the latest studies have shown that the most appropriate way to complete the research of organizational competitiveness is to calculate the indicator of competitiveness. It not only underlines the market orientation of analysis buts also emphasizes the key directions allowing optimal allocation of human resources.

The objective of the research is the development of the mechanism and practical recommendations how to create an effective system of forming and evaluation the managerial personnel's competitiveness. Its influence on integrated organizational competitiveness is also examined and shown.

1. THEORETICAL APPROACH TO MANAGERIAL COMPETITIVENESS EVALUATION

It has to be emphasised that the technique offered focuses not on certain manager's performance, but on the productivity of the whole management team. Actually, the necessity to evaluate the work of the integrated management team is demanded by the current economic system. Moreover, such approach decreases subjectivity while setting the rate of competitiveness thus corresponding to the goals set. So, in the following research by the competitiveness of managerial personnel is understood the capability and readiness of management to take qualitative decisions that determine success of the enterprise at the market. This way it is possible to assert that competitiveness of managerial personnel (Cm) is a function of two variables: potential of white-collars (P_L) (presence of qualities and the competencies needed to run professional activities), as well as motivation (M_L) (the range of stimulus to develop and fulfill the potential of management and achieve organizational goals). The relationship described can be presented this way :

$$C_M = f(ML; PL) \quad (1).$$

The mechanism of building competitiveness of the managerial personnel is presented in the figure 1.

This way, the level of management's motivation and potential are qualitative variables that form competitiveness of managerial personnel. Therefore, to the expert appraisal approach has to be applied to set numeric value for both of them . The coordination of experts' opinions is analyzed through Spearman's rank correlation coefficient [5] calculated by the formula 2 and acts as a reliability test for the data received by experts:

$$\rho = 1 - \frac{6 \times \sum_{i=1}^{n} d_i^2}{n \times (n^2 - 1)}, \quad (2)$$

where d_i^2 – square deviation from the mean rank-sum;
n – the number of indicators' groups.

Evaluation of management's competitiveness level starts with the compilation of the questionnaire aimed at estimation of both motivational climate in the enterprise and corporate policy regarding employees' potential development. At this stage it is important to conclude how the reality meets the needs of the enterprise. This way, each factor selected is examined from two points of view. Firstly, its significance for current conditions is scanned, and secondly, it is inspected how this factor is reflected in the HR policy of the enterprise. Such approach that is not based on absolute values of variables is more flexible and objective, because it allows adjusting variables to the environment observed. According to the study in question, the experts were asked to range as many as 21 factors of motivation and 87 elements of potential, which were divided into three groups. Data tracking of those elements has shown that financial motivation's factors constitute

about 90 % of all possible options, social and professional factors - up to 86 %; the range of scope evaluating competitiveness includes about 90 % of all the factors outlined.

A 7-grade scale is presented to range motivational factors and potential's elements. It allows transforming qualitative variables into quantitative ones, that are proper for further calculations.

Evaluation of the motivational factors and staff potential realization is performed by the means of vector algebra while the general level of competitiveness of managerial personnel is calculated by solving simultaneous equations using L. Zadeh approach [2, 3].

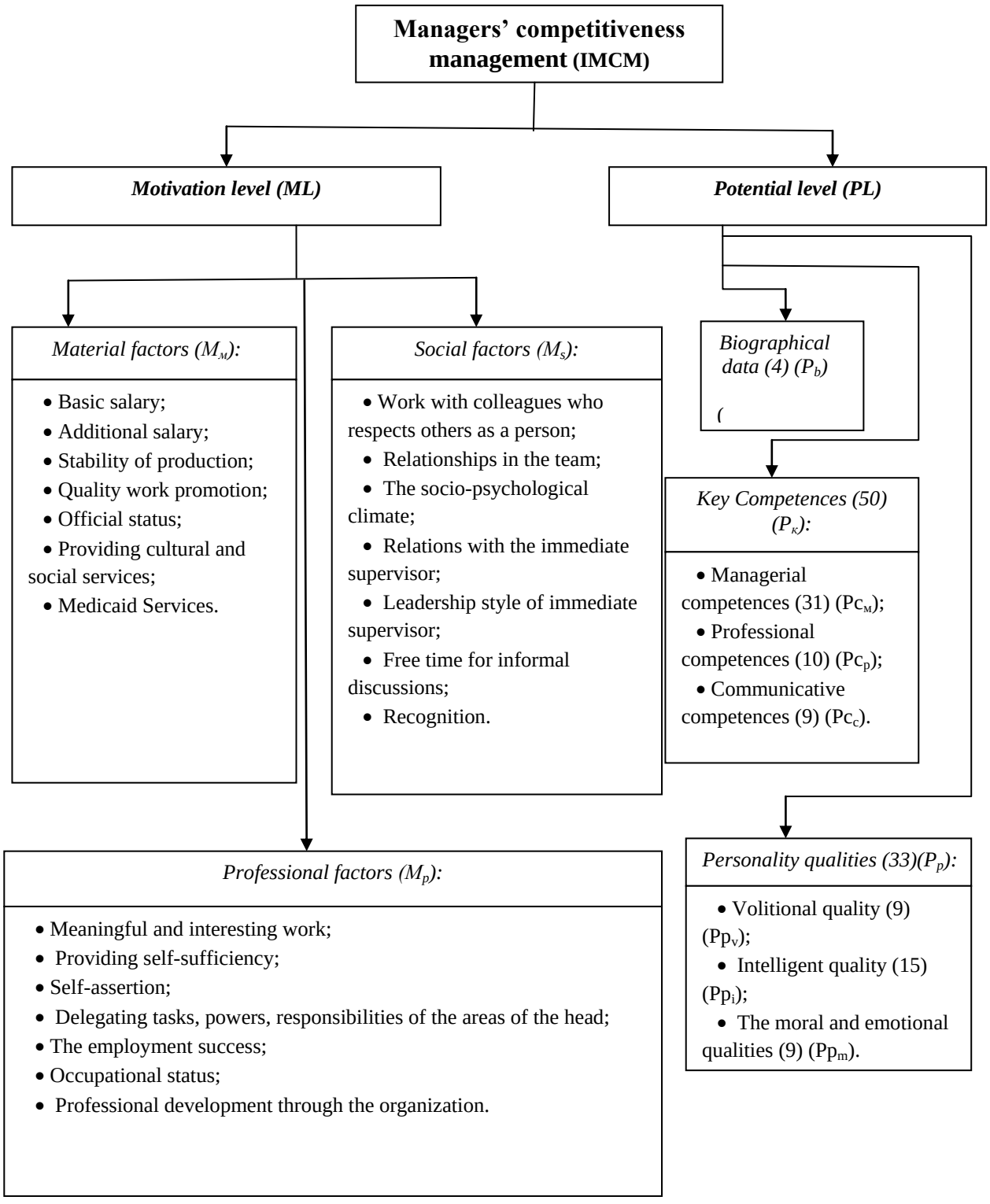


Fig.1 – Scheme of forming competitiveness of managerial staff

2. RECOMMENDATIONS FOR THE ESTIMATION OF THE MANAGEMENT'S MOTIVATION AND POTENTIAL LEVELS

That fact that there is a strong connection between personnel's motivation level and the performance demonstrated is obvious. The higher is the position of a certain employee the stronger correlation between mentioned factors is demonstrated. Furthermore, if an enterprise constantly develops stimuli to keep motivation level high, a worker is going to perform better. Despite the importance of this point there are only about 59 % of the enterprises, which pay enough attention to that problem (fig. 2) [1].

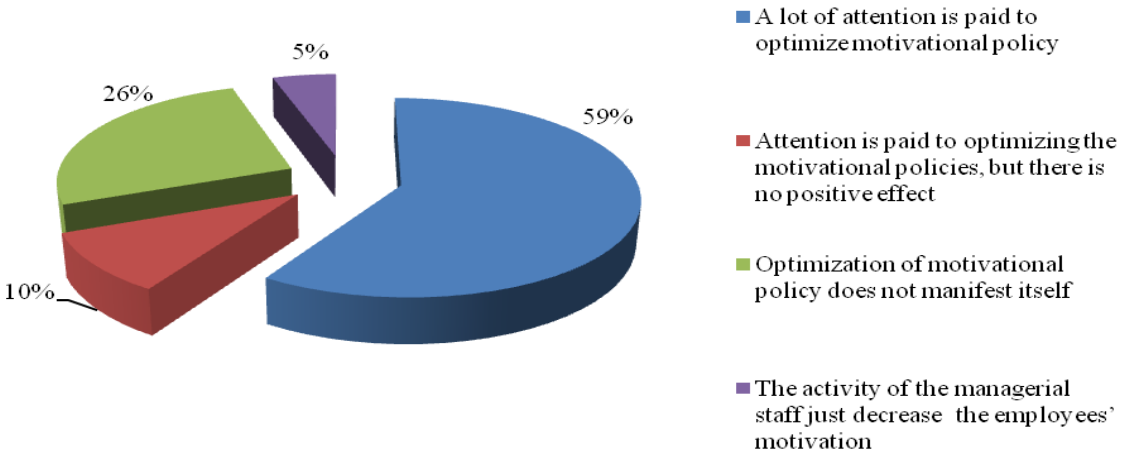
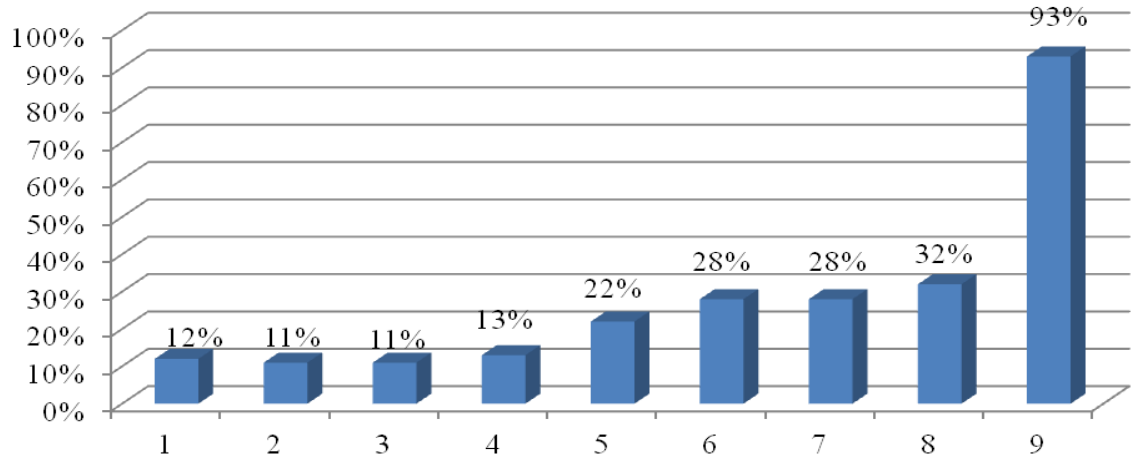


Fig. 2 – The structure of enterprises in regard to attention to the problems of motivational policies' optimization

The major task in motivational management is selecting the factors that drive employees and stimulate their effectiveness plus ensuring possibilities to satisfy those ambitions in the context of organizational goals achievement. According to the approach suggested 21 factors of motivation are selected and distributed into three categories: financial, social and professional. The selection proposed is based both on the fundamental studies of motivation results and modern research of Ukrainian economic background (fig. 3) [1].



1 - verbal praise, providing literacy; 2 - providing greater freedom and authority; 3 - the replacement of individual employees; 4 - linking wages to the results of labor; 5 - measures to improve the professional competence; 6 - measures to strengthen the team; 7 - improving the labor conditions; 8 – the creation of opportunities for career and professional growth; 9 - pay rise

Fig. 3 – Ranking of measures to improve employee motivation

Since motivation of managerial personnel combines diverse factors represented, attempts to describe it as a system measured entirely by numeric values are fallible. Each of the group combining motivational factors (financial, social and professional ones) forms corresponding orientation in the management team's behavior. This way, any of these groups may be drawn as a vector that influences staff motivation. According to vector algebra professional, social and financial motivational factors' groups are characterized not only by the specific numerical measurements but also by the corresponding orientation set. Taking into account the features mentioned, the calculation of the management team's motivation can be evaluated by the following formula:

$$ML = \frac{\sqrt{(\alpha_{\text{м}} \times \text{M}_{\text{м}})^2 + (\alpha_s \times \text{M}_s)^2 + (\alpha_p \times \text{M}_p)^2}}{\sqrt{(\alpha_{\text{м}}^{opt} \times \text{M}_{\text{м}}^{max})^2 + (\alpha_s^{opt} \times \text{M}_s^{max})^2 + (\alpha_p^{opt} \times \text{M}_p^{max})^2}}, \quad (3)$$

where $\alpha_{\text{м}}, \alpha_s, \alpha_p, \alpha_{\text{м}}^{opt}, \alpha_s^{opt}, \alpha_p^{opt}$ - weighting coefficients describing importance of material, social and occupational factors motivating, real and optimal respectively;

$M_м$, Ms, Mp, Mm^{max}, Ms^{max}, M_p^{max} - the degree of manifestation within implemented motivational policies material, social and occupational factors of motivation (actual and maximum respectively).

The range of the coefficient presented varies in the following limits ML. The indicator in question displays how motivational policy fits the sample pattern (fig. 4).

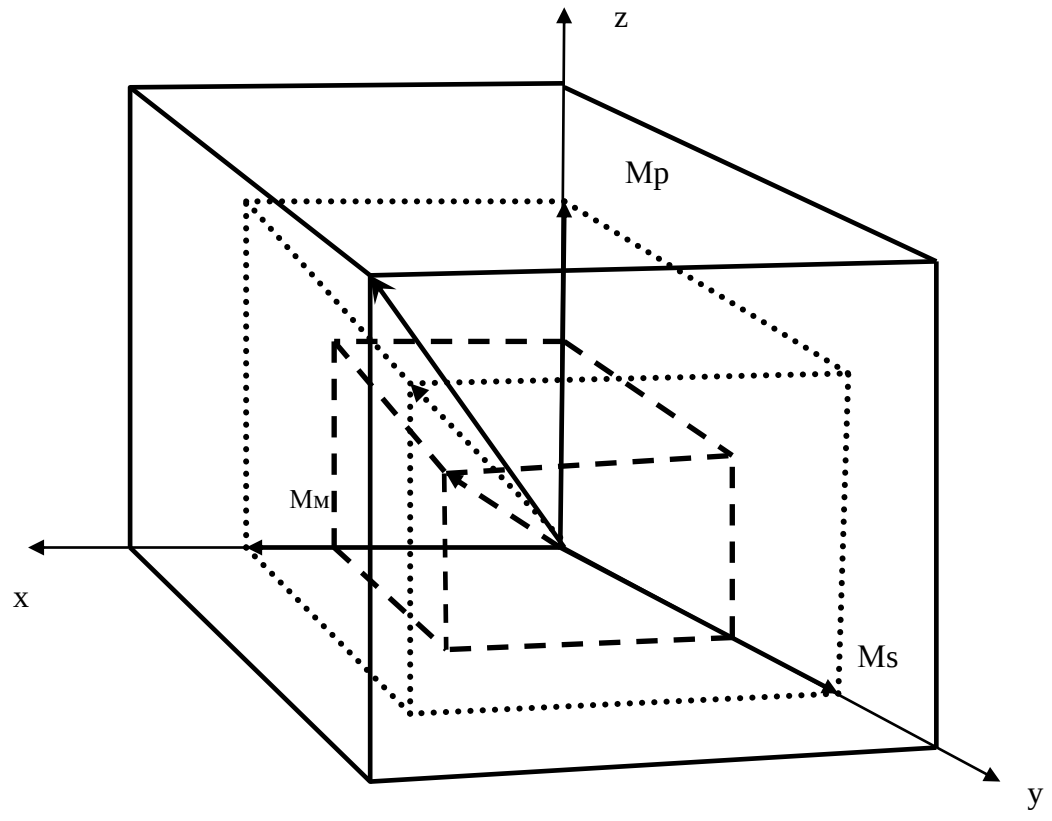


Fig. 4 – Graphical interpretation of motivational policies compliance to reference sample

As it has been already mentioned a manager's performance is based on his satisfaction from the job description and personal working conditions. The degree of satisfaction with the factors listed determines his loyalty to the employer and striving for the corporate goals realization. Thus desire of the management team to outperform affects market position of the enterprise and impacts its chances to sustain the rivalry. In order to clearly determine the extent how "well" the management team works, linguistic categories received through surveys and experts' evaluations have to be

mathematically processed. Being more strict and demonstrative, mathematical approach enables transformation of the linguistic variable "well" into numeric value that can be classified according to limits previously set. Thus motivation level may be treated as a restricting factor for staff's effectiveness or as an opportunity to increase the personnel's competitiveness.

Besides the desire to perform the task set on the highest level (motivation factor), competitiveness of a management team depends on personal qualities and skills of its members. The capability of white-collars to carry out job-related initiatives professionally is determined by their potential.

On a national scale, the human potential essentially influences the country's competitive position. The research of the WEF [1] mentioned above demonstrates the dependence of the state's success on the development of its human potential (fig. 5).

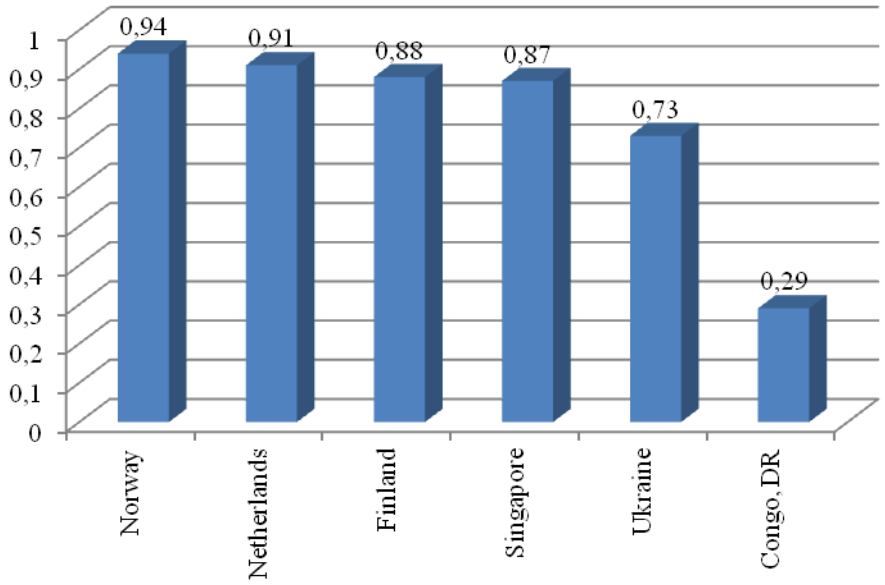


Fig. 5 - Human Development Index

Despite the importance of all organizational subsystems, the personnel management is a prior issue because it is a human that enables the production chain. Therefore, quality of the staff (especially managerial one) determines both long- and short-term opportunities of the enterprise in the market.

Vector algebra principles are used as well to calculate the level of personnel's potential . Taking into consideration the same approach as computing the level of motivation, level of potential is evaluated by the following formula:

$$PL = \frac{\sqrt{(\beta p_v \times Pp_v + \beta c_м \times Pc_м + \beta_b \times P_b)^2 + (\beta p_i \times Pp_i + \beta c_p \times Pc_p)^2 + (\beta p_m \times Pp_m + \beta c_c \times Pc_c)^2}}{\sqrt{(\beta {p_v}^{opt} \times {Pp_v}^{max} + \beta {c_м}^{opt} \times Pc_м \quad ^{max} + \beta_b{}^{opt} \times {P_b}^{max})^2 + (\beta {p_i}^{opt} \times {Pp_i}^{max} + \beta {c_p}^{opt} \times {Pc_p}^{max})^2 + (\beta {p_m}^{opt} \times {Pp_m}^{max} + \beta {c_c}^{opt} \times {Pc_c}^{max})^2}}$$

where β – weight reflecting the importance of the relevant parameters of the potential.

The level of managerial personnel's potential calculated the way presented, demonstrates how close knowledge and abilities of the staff correspond to the optimal profile set by management. A three-dimensional representation of the correlation described allows specifying a key of the initiatives meant to discover and develop the employees' potential. The more accurate volume of the cube illustrated current situation coincides with one of the cube that shows a desirable profile, the higher opportunities the specified enterprise has capitalizing on human resources possessed.

3. RECOMMENDATIONS FOR MANAGEMENT'S COMPETITIVENESS EVALUATION

Such indicators of managerial personnel's competitiveness as its motivation and potential are qualitative measures that are barely possible to be judged objectively and absolutely. Moreover it poses difficulties relating them to financial and economic activity of the enterprise while reflecting those indicators in human resources' statistics. Thus we are dealing with linguistic variables represented in the interval form. To determinate the set of values of that variables the following exponent function is suggested:

$$y = 1 - \exp\left[-\left(\frac{\varphi}{|X - x|}\right)^2, 5\right], -1 \le x \le 1$$

The rate of management's competitiveness is analyzed through the strategic card of competitiveness. Solving the simultaneous linguistic equations set up on such variables as «potential level» and «motivation level», the position of personnel's competitiveness can be estimated. Each linguistic variable is presented as indistinct number that is divided then into three indistinct subsets. In most cases they are going to intersect. The characteristics of the subsets mentioned are the following:

- Subset I - a favourable level of competitiveness;
- Subset II - corresponding influence is not entirely observed;
- Subset III - optimal resource allocation is blocked.

Thus, the strategic card of management's competitiveness is outlined in the figure 6.

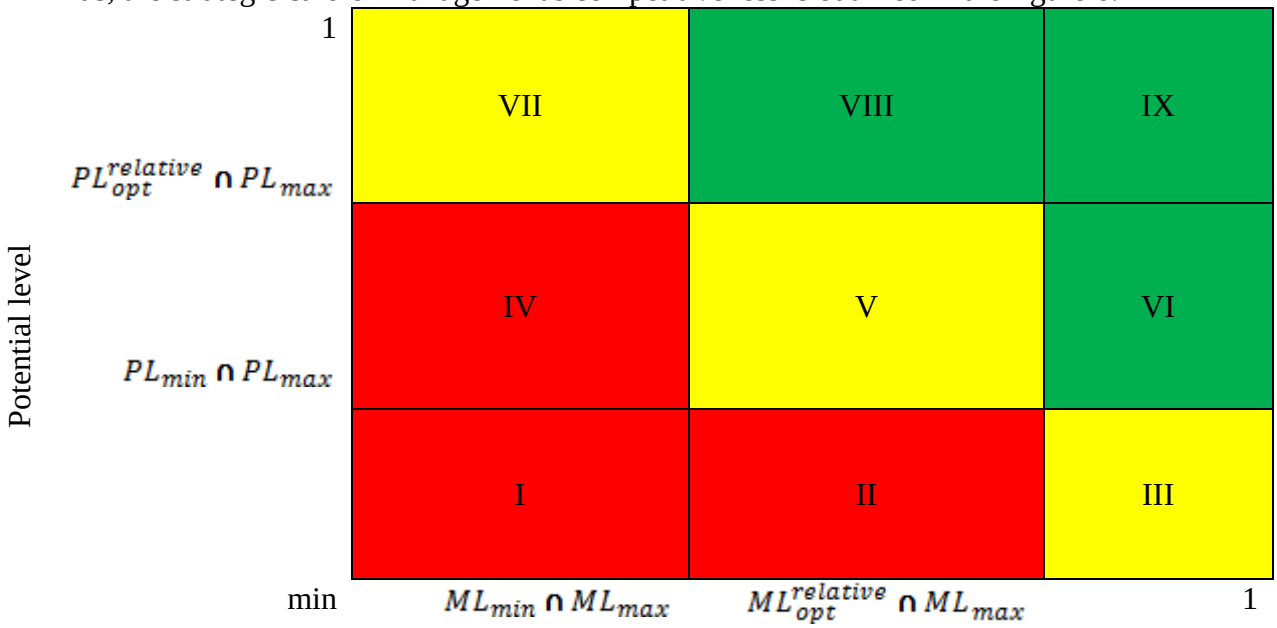


Fig. 6 – Competitive map of managerial staff

Influence of a management's team on the business competitiveness for each possible position of the enterprise in the developed competitive card is evaluated while the corresponding HR strategy is developed. Normally such clusters as six, eight and nine are the most favorable. In case the enterprise's management team is located into the clusters mentioned, human resources can be turned into additional competitive advantage. Clusters one, two and four are critical and if the management team is characterized by one of them it means that HR management at the enterprise is a bottleneck that prevents its growth.

The indicator of management's competitiveness (IMCM) can be calculated while solving the simultaneous equations set as explained in [2]. Practically it is more feasible to take into account the

assumption that IMCM can be determined by finding the cross point of PL and ML functions drawn in a joint coordinate system. Determination of the enterprise's strategic position allows outlining the extent its personnel shapes total efficiency of that. While implementing the targeted initiatives aimed at staff's motivation increase and potential development, competitive position can be improved.

Calculation of IMCM is a numeric way to competitiveness measurement. It can be used as either an independent indicator (for HR policy optimization) or as an integrated part of performance management system.

CONCLUSION

Current market situation emphasizes personnel as one of the key intangible assets, that forms a long-term competitive advantage. Managerial personnel in particular generate and run initiatives that determine organizational success and competitiveness. That is why the issue of balanced and strategic model of HR management has to be thoroughly analyzed. Thus, the choice of methods and mechanisms applied to staff should be preceded by a management team analysis, which clarifies whether the market position of the enterprise can be strengthen through development of a human capital. The research has shown that there is no clear and well-rounded indicator for objective evaluation of management's team capability to take administrative decisions professionally based on the market situation. As a result it is impossible to determine management's contribution to achievement of organizational goals and increase in its efficiency. Therefore, the indicator of management's competitiveness is suggested to calculate personnel's competitiveness and evaluate its effect on organizational performance. Advantages of the approach proposed are the following:

- complex estimation of the management team performance and its competitiveness in the market;
- usage of the wide indicators range to sustain well-rounded analysis of the management team's competitiveness;
- expert methods application while determining quantitative criteria for management's performance evaluation;
- possibility to integrate results received into performance management system;
- management of the uncertain data.

Taking into account the management's role for creating and increasing competitiveness of any business, it has to be concluded that the research outlined suggests feasible recommendations regarding competitiveness formation and evaluation while trying to solve actual scientific issue in question.

REFERENCES

1. А. Бурмистров. Какие методы повышения мотивации персонала являются наиболее действенными [Текст]/ А. Бурмистров, Н. Газенко // Журнал «Управление персоналом». – 2002. – Выпуск № 7. – С. 48-49.
2. Ефремов В.С. Стратегия бизнеса. Концепции и методы планирования [Текст]: Учебное пособие/ Ефремов В.С. – М.: Издательство «Финпресс», - 1998. – 192 с.
3. Л. Заде. Понятие лингвистической переменной и его применение к принятию приближенных решений [Текст]/ Л. Заде. – М.: Издательство «Мир», 1976. – 165 с.
4. Ожегов С.И. Толковый словарь русского языка [Текст] / Ожегов С.И., Шведкова Н.Ю. – М.: Азбуковник, 1999. – 944 с.
5. Панкова Л.А. Организация экспертизы и анализа экспертной информации [Текст]/ Панкова Л.А., Петровский А.М., Шнейдерман М.В. – М.: Наука, 1984. – 120 с.
6. Украина поднялась на 9 позиций в Индексе глобальной конкурентоспособности 2012 [Електроний ресурс] – Режим доступу: http://competitiveukraine.org/news/36/

TOPICAL GLOBAL CONSUMER TRENDS, PROSPECTS AND THEIR IMPACT ON DEVELOPMENT OF ENTERPRISES BRANDING

Stanislav V.Yatsentyuk

The global economy is closely linked with the development of marketing technologies and branding. In this article the basic approaches for the formation of basic global consumer trends for the next five years and their impact on the development of enterprises's branding practice have been considered and advices regarding their practical application at the strategic planning and operational-tactical activities have been offered.

INTRODUCTION

Effective market business activity should be based on an integrated approach to research, monitoring, analysis and application of the key factors of current trends of consumer preferences in the design, development and implementation of marketing programs and activities, according to the concept of integrated holistic marketing, which reflects current developments in actual marketing theory and practice by the MASB standards [1, 2, 3].

The global financial crisis that began in 2008, radically changed not only the market situation and consumer behavior, but also significantly affected influenced business practices and economic approaches regarding macro- and micro-business activity.

Studying the causes of the crisis, analyzing its implications and trends, scholars and practitioners are looking for new techniques and measures that can help the most effective ways to avoid risks and losses in the future, and seize new opportunities for growth. One of the most problematic issues in the practice of strategic marketing and business development for the top managers and business owners is the creation and development of enterprises's branding at the consumer market of the crisis after period and its adaptation to actual and possible changes.

Relevance of globalization of the world economy, internalization of consumer markets, their key drivers and trends during crisis and after crisis period, the development of marketing and branding, their theoretical basis and practical application, has stimulated an active basic and applied research activities of many scientists, in particular, David A. Aaker, Philip Kotler, V. Pferch, T. Ambler, Amy Campbell, Bogusław Fiedor, Kevin Lane Keller, Ryszard Kłeczek, O. Kuzmin, JJ Lamben, A. Moroz, V. Pertzya, Jan Rymarczyk, D.Shults, JC Verkman, A. Zozulov et al.

They studied, analyzed, and formulated the basic approaches and principles on which the adaptation of local economies and business activities of enterprises in the context of globalization must proceed, the basic principles and the principles of the brand, its identity, positioning, integration with the enterprises's strategic activities, definition of the brand's position at the different commodity market contexts, both globally and locally. However, despite the large number of publications and the theoretical framework, the development and brand management concept, i.e. the branding concept is still in its infancy and needs further development opportunities for application use in the context of globalization and after the crisis consumer markets.

In late 2012 the Euromonitor, the global leader and the international consumer markets researcher made a comprehensive study of global consumer trends in the next five years [6]. Informative and analytical material presented in this study identified factors that determine the nature of changes in consumer behavior in actual and in future periods in strategic perspective, formulate an understanding of consumer motivation and create information basis for the formation development programs and plans, as a global and strategic scale, so for local and operational of the level.

By the way, Euromonitor research information intersects and is confirmed by the World Economic Forum Global Risks 2013 report, represented in Davos this year [16].

The aim of this work is to determine the major global consumer trends impact on branding development in the context of globalization and European integration, the proposals and recommendations reasoning concerning their application in strategic planning and operational and tactical activities of enterprises.

1. THE ESSENCE AND PECULIARITIES OF THE MAJOR GLOBAL TRENDS IN UKRAINE AND ABROAD

Systematization of Euromonitor research materials on consumer trends has allowed to include the following trends:

1. consumer thrift (at costs);
2. more cautious approach to lending;
3. strengthening the role of the social nets friends recommendations in deciding on the purchasing process;
4. development of multicultural consumerism;
5. strengthening the consumers fight with obesity and overweight;
6. development of new approaches to age restrictions and purchasing possibility of older age consumer groups;
7. development of consumer approaches to purchasing and consuption, based on our own experience and the experience of consumers rather than on the process of buying and purchased goods;
8. increase social responsibility of consumers in selecting company's products and services with a positive social image and the corresponding business culture;
9. providing consumer benefits to products and consumer goods with a reduced content of chemical components, or a complete rejection of their applications, increasing demand for natural ingredients and products;
10. active development and increasing the share of e-commerce sales of consumer goods.

Research of the formulated consumer trends essence for key factors of their influence allowed to group into three clusters: factors that affect the change of sources of funding consumer purchases; factors of development of human life style as the change of objectives of consumer purchases; factors affecting the change in consumer communications at making rational decisions about purchasing.

In general, the structure of their relationships can be represented as a chart that is presented in Fig. 1.

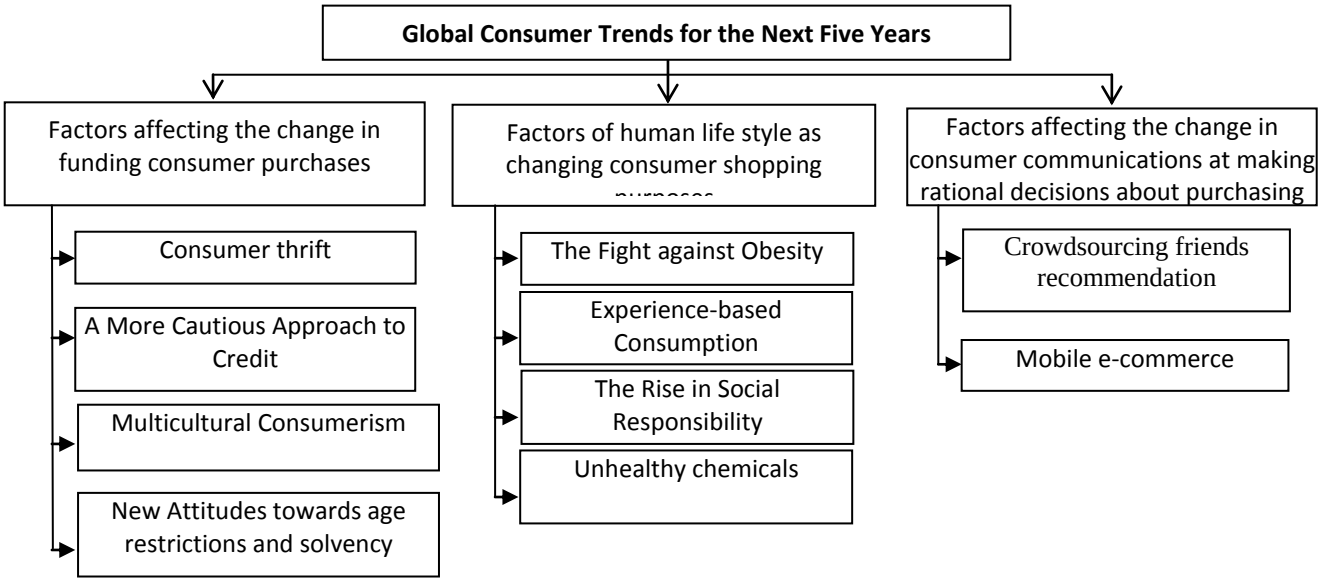


Fig.1. The structure of the relationship and interaction of global consumer trends by their key factors of influence

Source: Author's own study based on the report prepared by the Euromonitor [6].

To understand better the impacts, issues and trends in the characteristics of consumer markets for each consumer trends separately it is necessary to consider them from the point of view of owners and management companies in terms of the impact of these trends on their business activities.

2. FACTORS AFFECTING THE FUNDING OF CONSUMER PURCHASES

2.1. Consumer thrift

Before the crisis in 2008 the typical global consumer trend which had increased the value of purchase was not only goods, but the price at which it had purchased, that for many of consumer's price played an important argument to confirm their status. And it concerned not only «premium» and «ultra-premium» consumer segments, but segment «mass-product», especially in categories «fashion style» and «fast-fashion». Now the savings at purchasing is a public popular trend. This is primarily related to that in spite of the fact that the first wave of the crisis subsided, habit and desire of consumers to save while buying remained.

However, loyalty to the popular brands will be retained, although consumers will be looking for favorite brand at a bargain price in various trade channels, and for search and selection will be spent more time than ever before. Now segment «mass-product» consumers more focused on durable and informed purchase.

As confirmed by the publication in the popular business magazine Forbes [17], this trend forms the rising popularity of drop-shopping in online stores, as well as the development of trade channels, applying trade and services at discounted prices. The commercial offer at discounted prices will cover more business areas: from the shops of goods at fixed prices like "Everything is 3 UAH." to medical examination and plastic surgery with the bonuses and discounts.

In FMCG-retail format outlets like "discounter" will be the most promising now and in the coming five years. Typical examples that clearly confirm this trend are the results of the world's largest American retail network Wal-Mart Stores and Ukrainian retail network "ATB-Market".

Wal-Mart Stores, Inc., whose mission is the slogan: "Save money. Live better." all these years, is on the top of the world's three largest companies by sales revenue, according to the prestigious Fortune Global 500 [12]. Only two companies in the world (retail network Wal-Mart Stores and oil giant Exxon Mobil) have recieved revenues over 400 billion dollars in 2012. The graph of Wal-Mart trade revenue (Figure 2) shows that despite the fact that the global financial crisis hit the most powerful American consumer market, Wal-Mart Stores maintained a positive trend of growth dynamics of trade.

Even more spectacular evidence of this consumer trend is results of "ATB-Market", which develops only at format of discounter stores - like German retail company Aldi and actively resorts to the use of its own brands (private label). As it can be seen from the graph (Figure 3, 4) for the crisis, the company increased trade revenue almost 2.7 times and 2.4 times increased the number of outlets and market coverage. And this was happened at that time, when such famous Ukrainian retailers as "PIK", "Bolshaya lozhka", "Olyvie», «Rainford», «Boomi-market" and others either went bankrupt or were acquised by other market operators. Moreover, mainly affected operators used exclusively hypermarket and supermarket formats.

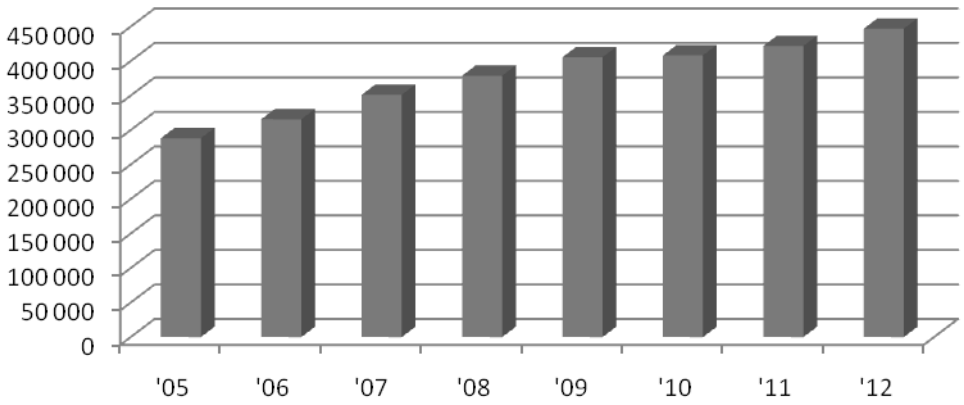


Fig. 2. The growth of trade revenue Wal-Mart Stores, US$ billion.

Source: WEB-site of Wal-Mart Stores, Inc. and Fortune Global 500 materials [11,12].

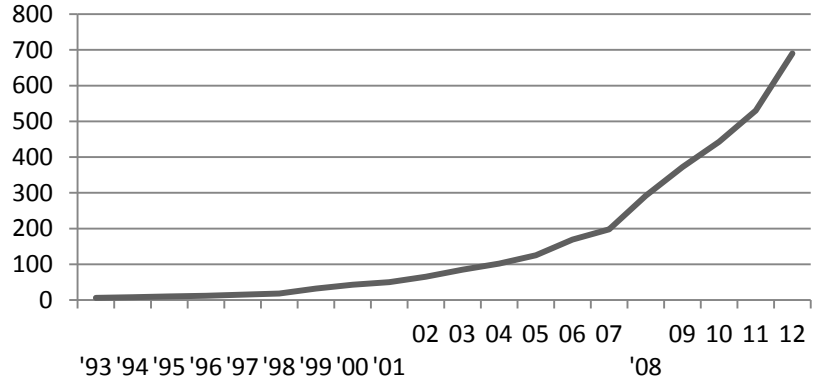


Fig. 3. The growth network "ATB-Market", the number of stores.

Source: WEB-site of ATB-Market and Forbes materials [8,9,10].

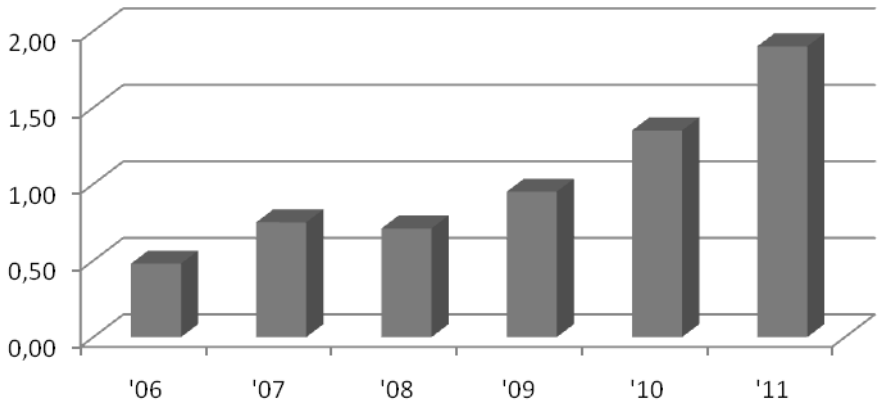


Fig. 4. The growth of trade revenue of "ATB-Market", US$ billion.

Source: WEB-site of ATB-Market and Forbes materials [8,9,10].

2.2. A More Cautious Approach to Credit

Dynamics of trade shows that after the crisis the number of purchases on credit has decreased. This situation is due to the growing caution of banks, because of the large percentage of non-performing and non-returned loans from the one hand, and the negative experiences of consumers from the other. Thrifty consumer's attitudes manifested in trying to live on their own money rather than borrowed one.

At the same time consumers start to save more and to save money, especially in developing countries. In particular, the middle class in China and India, on average, saved at least 30% of the income, while in the UK and U.S. savings obtain 2% and 3% of revenue, respectively.

Market lending by credit cards recovers very slowly. So for the period from 2007 to 2012 the number of existing personal credit cards increased only on 13% in the world.

After 2008 in some countries requirements for borrowers have been tightened, new less costly forms of credit have started to developed, market of loans in P2P (people-to-people or peer-to-peer, or person-to-person) format has started growing fast, when borrowers are friends, relatives or on-line P2P lenders. Now there are more than 2,000 P2P sites and their number is constantly growing [6.13].

2.3. Multicultural Consumerism

The process of globalization and development of human resources mobility have led to the fact that society is increasingly becoming multinational and monocultural monoethnic unity and consumer markets are eroding. In Germany in 2011 there were 7.2 million foreign migrant workers (almost 9% of the total population). Overall in Europe, there are over 20 million Muslims. Since obtaining independence, over 6 million of working population has left Ukraine and this process is continuing and activating. In 2012, in the United States the number of newborns – members of national minorities, exceeded the number of children born by Americans. In subsequent years, it is forecasted that geography of active migration will be expanded by countries that previously were by themselves the source and supplier of labor forces to the world market, in particular such as China and South Korea [6, 13].

In many countries, ethnic minorities become weighty economic units on the consumer markets in the given countries. This actively affects the change in consumer structure of the national markets. For many consumers from minorities there is a needed in products committed according to religious or cultural norms. Production forced to be transformed - now the products' package includes translation on languages of ethnic minorities, cosmetology masters release of specific, unusual for traditional markets, products, restaurant menus introduce in national foods or foods prepared in accordance to religious point of view. Also many famous people: "stars" of show business, sports, politics and other celebrity create certain fashion trend of exotic style, food, and hobbies.

2.4. New Attitudes towards age restrictions and solvency

With the growing popularity of healthy lifestyles and nutrition, development of medicine and high-techs the age restrictions and features that in the past had significant influence on consumer preferences and ability to pay, now becoming increasingly blurred and transparent. In particular, only from 2006 to 2011 the average life expectancy of the world population has increased by two years. Changing their lifestyle and having savings or working in their older age people try to lead a full and active life even with chronic illness.

This leads to the fact that, on the one hand, the boundary of the intensive purchasing activity of aged consumers, previously advancing in average in 50 - 60 years, is gradually shifted to 80 years, on the other hand, people in this age actively buy goods and services of travel agencies, health centers, cosmetic, pharmaceutical companies and medical clinics. Moreover, the demand for

anti-age products has a stable positive trend and sales of these products increased by 63%, or US$ 22.2 billion, even in "Crisis" 2006 - 2011 [6.13].

Summarizing the trends discussed above, affecting the funding of consumer purchases, and, respectively, determine the purchasing power of certain customers' groups the following suggestions for improving the mechanism of branding in modern conditions can be formulated (Table 1).

Table 1

Recommendations for improvement of branding considering factors affecting the funding of consumer purchases.

№	Consumer trends	Essence of impact of the consumer trends on the enterprises's branding	Recommendations for adaptation and reacting of the branding on the global consumer trends
1	Consumer thrift	- Reducing the level of loyalty to the traditional trade channels - Maintaining loyalty to consumer brands, - Consumers' willingness to spend more time for searching than spend more money.	- Active development of distribution channels and sales activities focusing on maximum coverage of the target markets by brand products, - Reducing the cost of logistics, image advertising and PR with an active stimulation of sales promotion in all P.O.P. and P.O.S., - informing the consumer about these activity, - Active use of merchandising, joint co-branding of popular trade channels and consumer brands.
2	A More Cautious Approach to Credit	Refusing or reduction of consumer lending with a corresponding decrease in demand for expensive consumer brand's goods with high margin for a status image and shifting them to less expensive substitutions.	- Support of adherence of consumers to brands by corresponded measures of communication policy focusing not only on the brands image and reputation, but on other brands benefits: advantages informative effectiveness factor and advantages of reducing consumer risk factor [2]. - stocktaking of brand architecture and brand portfolio in terms of diversification and application of their light or small formats.
3	Multicultural Consumerism	Allocation among traditional national markets of new market niches with distinct national, ethnic and religious characteristics.	Active use of new market opportunities through: - Definition of target consumer groups with common national, ethnic and religious characteristics; - overview of brand architecture and portfolio to meet needs of identified target segments (rebranding, repositioning and introduction of new brands and products).
4	New Attitudes towards age restrictions and solvency	- Change and "dilution" of traditional brand positioning; - Shifting the key demographic, social-economic and psychophysical factors to target markets and audiences of individual brands and product categories.	- overview of brands positioning targeted to specific segment of the consumer market. - Changes in the brand's marketing-mix complex, particularly in their communication policy with focusing on the customer respective age categories values, desires, demands etc.

Source: Author's own study based on the survey results.

3. FACTORS OF HUMAN LIFE STYLE DEVELOPMENT AS CHANGING CONSUMER SHOPPING PURPOSES

3.1. The Fight against Obesity

According to the WHO, over the past thirty years, the number of people suffering from obesity has doubled and now overweight is observed by 1.3 billion people, that is practically every fifth resident of the Earth. During recent years increase in share of the overweighted population have been started to involve not only the "wealthy", but less rich regions; particularly Latin America (now in Mexico, about 70% of the population is overweight), and Asia-Pacific region in which, by virtue of national, economic, cultural and religious backgrounds, this problem has never been characterized [6.13].

Obesity is recognized at both level of heads of states and ordinary citizens. In some countries, such as Hungary and Finland the increased tax on the manufacture and sale of products with high fat has been introduced, trade of harmful products in schools were restricted, education programs about healthy nutrition was funded by the government. Overweighted consumers are using various types of diets and imposing new requirements for products. There is a trend of increasing demand for weight loss pills, food with low calories and no sugar. Markets of such products for weight loss, as fitness equipment and services SPA-treatments and fitness centers, are developing dynamically. Special stores and departments with a wide choise of large and very large sized clothing and shoes are appearing in the trade channels.

On the other hand, the growth in demand for aesthetic medicine and psychologists who help in the treatment of eating disorders, especially such as anorexia, which stimulates cultured asthenic type of beauty, is projected.

3.2. Experience-based Consumption

Today and in the future consumers are beginning to spend money as an investment in satisfaction from experience of their own consumption, from their own impressions, in what they can remember, but not from buying what they can wear, or try. So they replace normal shopping by visiting thematical parks, popular sports, master classes with tea ceremony or cooking exotic dishes, concerts, performances, sporting events, SPA - sessions and carnivals. Consumers, especially in developed countries, will spend more free time and money on traveling abroad, while focusing on their own experimental touristic programs, rather than on the standard travel agencies offeres, and using the financial benefits provided by budget flights from low-cost airlines. On the other hand, the traditional retail channels as markets and shopping centers or malls in the coming years will invest not only in trade area but also in creating a good atmosphere, becoming from the shopping places into the way of spending time.

Although this trend globally is not univocal - consumers prefer direct consumption in the markets with low purchasing power of consumers and emerging markets.

3.3. The Rise in Social Responsibility

In developed countries in the late twentieth century, the reputation of the company and its social responsibility began to play an important role not only as a kind of necessary duty, but also an important factor in competitiveness. This is reflected in the concept of social and ethical marketing [1,3,4].

Now this trend globally covers the consumer market and affects the buying decision. People are even willing to pay more - but a little bit - for ethical and environmental production. In addition, in many countries, there is a growing demand for local producers, instead of mass products from the multinational giants. Other characteristic features of this trend is gaining popularity consumer fairs and eco-tourism.

Taking into account this trend companies implement in their own corporate culture CSR-programs and are involved into partnerships with Foundations and non-profit organizations, transfers the percentage of turnover on charity etc. In practice of branding it has long been known that the brand that makes good doomed to customer loyalty and increase sales. Now this rule is more relevant.

3.4. Unhealthy chemicals

Natural harmless ingredients are absolute must have for products for the next five years. An This applies especially to such categories as cosmetics and beauty products, products for children, food products and consumer chemical goods, where harmful ingredients such as parabens and toxins should be replaced with safer ones [6,13].

Worrying about their own health consumers are willing to pay extra for organic food, refuse plastic bags and wish to have no preservatives, dyes, fragrances and other chemical ingredients within their own consumer goods.

Thus, the analysis of the factors of human life style as changing the objectives of consumer purchases and major consumer trends that form them allows to define the following features of their development and to develop recommendations for implementation in business practice (Table 2).

Table 2

Recommendations on improvement of branding considering factors of human life style

№	Consumer trends	Essence of impact of the consumer trends on the enterprises's branding	Recommendations for adaptation and reacting of the branding on the global consumer trends
1	The Fight against Obesity	- Appearance on the traditional markets of new market niches with consumer needs, oriented on weight loss and healthy lifestyle. - Increased competition from new «healthy»/«slim» products and their brands.	- Active use of new market opportunities by development of own brand architecture and brand portfolio to cover new market niches; - Adaptation of existed brands to new conditions: the diversification of product range, rebranding, repositioning for the segment «Slim & Healthy»; - Introduction of new «healthy»/«slim» brands and products.
2	Experience-based Consumption	Gradual loss of market position by brands that create their own unique selling proposition based only on rational, material, financial benefits or purely image.	- Implementation of an integrated approach to strategic vision and operational branding with enhancement of traditional brand's benefits by other brand's benefits, which previously were seemed as less important (promotion, brand communications); - The use of branding opportunities, to form consumer experiences and impressions. - Implementation of the mechanism of co-branding of entertainments and consumer brands.
3	The Rise in Social Responsibility	- Reduction of demand for consumer goods of brands and companies with negative social reputation. - Reduction of sales, or even disappearance of commodities and commodity	- Preference for integrated marketing-mix when implementing CSR-programs; - Making adjustments in production, logistics and product policies of enterprises by forcing communicative activities to inform target markets, society and state institutions about these activity.

		groups that use social unethical, unpopular methods and technologies.	
4	Unhealthy chemicals	- Reduction of demand for brand's consumer goods that use hazardous chemical ingredients and harmful compounds, unpopular technology dangerous artificial sweeteners and substitutions. - Increase in the market share of natural foods and products (Organic Products).	- Correcting consumer product–mix in order to conform it to changes in consumer preferences, - stocktaking and correction of recipes and raw material suppliers, - Entering "naturalness" in the range of consumer brands with the relevant communicative informing target consumer about value of brand equity.

Source: Author's own study based on the survey results.

4. FACTORS AFFECTING THE CHANGE IN CONSUMER COMMUNICATIONS WHEN MAKING DECISIONS ABOUT BUYING

4.1. Crowdsourcing friends recommendation

The effectiveness of traditional marketing efforts in creation of consumer demand is reducing due to the growing impact of social nets. A key factor that directs the consumer choice is a personal experience, recommendation or review of the known and respected celebrity. That is why the feedback on products, brands, companies, promotions and events placed in social nets by the active Internet users, number of which is growing gets the increased weight. The development of an active use of the Internet is not only quantitative but also qualitative. In particular, owners of "tablets" are spending 20% longer in the Internet than those who prefer a laptop or a desktop PC. It is expected that in 2015 about 50% of on-line sales will be made in social networks [14].

Consumers more often decide to purchase after visiting the forums, especially for such directions of business as production and sale of goods in «mass-product» segment, tourism, service, restaurant business and other services.

4.2. Mobile e-commerce

The rapid development of mobile and communications, as well as technological opportunities of mobile devices, affects significantly the development and enhancing the role of e-commerce, on the whole, and the application of mobile technology in consumption and e-commerce in particular. It displays on the rapid explosion in demand for mobile devices, worldwide boom in popularity of Internet social media and networks, and the movement toward consumer preferences of local products and services. New push in the development of this new form of e-commerce has gained due to technology, named "SOLOMO", i.e. (So) social, (Lo) local and (Mo) mobile [15].

According to the Forbes [13] in 2011 468 million smartphones has been sold, while in 2016 the number of sold devices will grow upto 1.5 billion. Number of iPad tablets sold worldwide has raised from 4 million units in 2006 to 51 million in 2011, and increase in sale upto 181 million in 2016 is projected. This is the basis for development both shopping on-line, for usage QR-codes and other applications, and for monetization of content as well.

Thus, it is possible to identify the following measures which should be implemented in the process of adapting the branding system to the current global changes in the business environment (Table 3).

Table 3

Recommendations on improvement of branding taking into account factors that affect the change in consumer communications when making decisions about buying

№	Consumer trends	Essence of impact of the consumer trends on the enterprises's branding	Recommendations for adaptation and reacting of the branding on the global consumer trends
1	Crowdsourcing friends recommendation	- Reducing the effectiveness of traditional marketing communications by changing the information field - Increase in share of active users of the Internet and social networks on the majority of target markets.	- Creation of brand pages in social networks and its active use for communication with consumers; - Involvement of popular and authoritative celebrities - consumer of the brands in social communication network - Development of measures to leveling false, biased or negative recommendations that manipulate by the influence on the minds of target consumers.
2	Mobile e-commerce	Development of Internet, mobile, technical capacities of mobile devices and their number in consumer use have significantly influenced the development, role and opportunities of e-commerce.	- The creation of e-service sales of goods and services based on Android, Mac systems, etc. - Use of the SoLoMo technology; - Participation in online auctions, bids in multi-branded online stores. - Creation of opportunities for online (e-mail, on-line order, Skype) communication while ordering goods. - Taking into account the necessity of cooperation with financial intermediaries to pay for goods and services via the Internet.

Source: Author's own study based on the survey results.

CONCLUSION

Summarizing the thesis based on the new global consumer trends, prospects and their impact on the development of enterprises branding, it is possible to formulate the following:

- Today and in the next five years, consumers will be frugal, interactive, multicultural, health-driven, socially responsible, will not trust traditional advertising and actively use mobile, not only for communication but also for e-commerce.
- On the developed markets, conspicuous consumption is out; personal appearance, health and well-being become the priority over the accumulation of material possessions.
- For orientation and adaptation of the enterprises's strategies to the new consumer trends it is necessary to consider key influence factors, grouped into basic clusters: factors influencing the change of source of funding of consumer purchases; factors of human life style as changing purposes of consumer purchases; factors affecting the change in consumer communications while deciding on a purchase.
- Determining the impact of new consumer trends on development of enterprises' branding it should be defined their critical positions for its own brands and considered that, on the one hand, new trends pose competition to the traditional markets and emerging challenges for traditional brands, but on the other hand, new markets and opportunities for the development of basic brands and brand portfolio appear.

- In the practice of enterprises' branding according to the new consumer trends it is expedient and effective to use such measures as comprehensive approach to marketing-mix, joint co-branding, rebranding, repositioning, diversification and introduction of new brands and products.

REFERENSES

1. Kotler, Philip & Keller, L. Kevin (2012). Marketing Management 14e. Pearson Education Limited 2012 – 657 p. – P.18-19
2. Котлер Ф. Пферч В. Бренд-менеджмент в B2B сфере. Зачем нужен бренд-менеджмент на промышленных рынках? – СПб.: Вершина, 2009. – 432 с.- С.72
3. Котлер Ф. Маркетинг менеджмент. – СПб.: „Издательский дом ПИТЕР", 2000. – 749 с.- С.49
4. Гаркавенко С.С. Маркетинг. Підручник. — 6-те вид. — Київ: Лібра, 2008. — 720 с. – С.29
5. Official web-site of the Marketing Accountability Standards Board / [Електронне джерело]: Режим доступу URL: // http://www.themasb.org
6. Official web-site of Euromonitor International / [Електронне джерело]: Режим доступу URL: // http://www.euromonitor.com
7. Влад Головин: «Кто заправляет китайским ширпотребом" 1 октября 2012 г. / [Електронне джерело]: Режим доступу URL: // http://forbes.ua/magazine/forbes/1339093-kto-zapravlyaet-kitajskim-shirpotrebom [Заголовок з екрану]
8. Official web-site «АТБ-маркет» / [Електронне джерело]: Режим доступу URL: // http://www.atbmarket.com/about/history/
9. Нина Мищенко: «Правдивая история «АТБ-маркет» 3 сентября 2012 г. / [Електронне джерело]: Режим доступу URL: // http://forbes.ua/magazine/forbes/1336454-pravdivaya-istoriya-atb-market [Заголовок з екрану]
10. Нина Мищенко: «Кто из розничных сетей открыл больше всего новых магазинов» 24 января 2013 г. / [Електронне джерело]: Режим доступу URL: // http://forbes.ua/business/1346177-kto-iz-roznichnyh-setej-otkryl-bolshe-vsego-novyh-magazinov/1346179#cut [Заголовок з екрану]
11. Official web-site of Wal-Mart Stores, Inc./ [Електронне джерело]: Режим доступу URL: // http://corporate.walmart.com/
12. Official web-site of CNNMoney Cable News Network. A Time Warner Company. / [Електронне джерело]: Режим доступу URL: // http://www.money.cnn.com/magazines/fortune/fortune500/?iid=F_Sub
13. Анна Ковальчук: "10 глобальных потребительских трендов. Какие из них проявятся в Украине?" 13 декабря 2012 г. / [Електронне джерело]: Режим доступу URL: // http://forbes.ua/business/1343966-10-globalnyh-potrebitelskih-trendov-kakie-iz-nih-proyavyatsya-v-ukraine [Заголовок з екрану]
14. Екатерина Шаповал: "Топ-5 блогов о маркетинге: выбор профессионалов" 27 декабря 2012 г. / [Електронне джерело]: Режим доступу URL: // http://forbes.ua/business/1344816-top-5-blogov-o-marketinge-vybor-professionalov/1344826#cut [Заголовок з екрану]
15. Official web-site of SOLOMO Technology Inc./ [Електронне джерело]: Режим доступу URL: // http://slmtechnology.com
16. Official web-site of World Economic Forum / [Електронне джерело]: Режим доступу URL: // http://reports.weforum.org/global-risks-2013/

GENDER ASPECTS OF MANAGEMENT

Eleonora Skiba

The main specific peculiarities on gender issue in management between two dominant scientific schools, biological determinism and differencing socialization, are analyzed.

INTRODUCTION

The main aim of the research presented is to analyze the different scientific schools on gender difference in management. In current unstable economic situation management must be very flexible to achieve the positive economic and social effect. The author proves if we want to make some progress we should study the effect of gender differences and use our knowledge in reality. The more knowledge on gender differences we have and use in management, the more flexible management we have got. The most prominent scientific works of different scientific schools are used to analyze this problem.

RESEARCH ANALYSIS

The relevance of this research is that the issues of full freedom and equality of women and men take priority among the issues which determine the development of modern society in the democratic transformation of life. Education and training of students who want to be managers based on the current realities of social life require a detailed study the specific features of femininity and masculinity construction in the context of non-essential men and women. There are a lot of scientific works on gender or sex difference while business running. There are two main schools; they are biological determinism and differentiating socialization. Is there the biological reason or nature for differences between men and women explanation, or men and women were just taught to be so? The scholars of biological determinism school say about the relationship between the degree of stability in mono profile organizations and leader's sex. They use not gender but sex. The scientists stress that the organization run by women shows the work stability. The business run by men was involved into crises more. They revealed the capacity of men to choose the abstract kind of work, such as key process programming or posing the key problems. Routine work was done by women in the studied organizations. The scholars discuss if biology \ nature of person is his \ her destiny or the person's matter is flexible and can be changed? While studying the dynamics of brain's asymmetry by neurobiologists the scientists observed that differences of male and female brains are not limited to different sensitivity of neurons. Nerve cells and their nuclei of men and women have got differing size. The cells are differently with one another. The sexual differentiation is manifested in the difference of chemical properties of neurons and brain cyto-architecture of men and women brain's construction. Even the same behavioral effects of men and women are determined by different neuro physiological processes.

But can these detected differences in the reproductive anatomy, structure and chemistry of brain, the muscles' structure and the number of different hormones be sufficient to ensure the recognition of male supremacy? M. Kimmel, one of the world's leading specialists on the history of masculinity, the chief editor of the international scientific journal «Men and Masculinities» emphasizes that the answer is not so simple and straight forward. There are enough women who are stronger than men. But the chemical differences of hormones are not as striking. There is some level of men androgen hormones in women. There is some level of women estrogen hormones in men. Both women and men use two hemispheres of their brain. That is why scientists use the term «gender» instead of «sex». M. Kammel points out that researchers of the social sciences and the sciences of human behavior use the term «gender» differently than before using the word «sex». Sex refers to the biological structure of the male or female. This term examines the chromosome,

chemical and anatomical organization of the person. Gender refers to the values that this culture makes sex differences between men and women. The term «sex» means the biological sex. Gender means the context of masculinity and femininity in a certain period of time. Biological sex has a very few variations, but gender variations can be numerous. What does it mean to have a certain anatomical configuration, male or female? This is largely determined by the time and place of residence, ethnicity, race and age of the individual. According to M. Kimmel, the cause of the idea of gender differences is that the society legitimizes the idea of social and, therefore, gender inequality. In other words, the gender difference is not the cause of gender inequality, but the instrument by which, the government explains and legitimizes its policy rule [2].

Cornelia Fine, one of the world's leading scientists in the field of neuropsychology, defends this point of view, too. K. Fine, a professor of psychology, using methods of cognitive psychology and neuropsychology, debunks the myth of the alleged total and absolute incompatibility of women and men. Her book is about how our mind, neuro-sexismand our society create and legitimize the artificial justification of the gender differences. It was published in 2011 and received several literary awards. The author asks why it is believed that the men came from Mars and women were from Venus. The reason for such delusion of sex is given in science which she calls because of it «pseudoscience», there is neuro-sexism still existing in all spheres of society and culture. Author of «Delusions of Gender», Cornelia Fine, argues that sexism seems to be rooted in all sciences and in all branches of industry and culture. Sexism allows manipulating the results of research on sexual differences.

Providing a large amount of evidence, K. Fine, destroys many of the myths based on sexism. Recommend her book to learn in the course of sociology, biology, and business as well as the book debunks pseudoscientific study of sex differences, reminding us that science is part of culture, and that the fight against sexism in neuropsychology and the fight against sexism in society are closely related. The book «Delusions of Gender» is written in such a way that completely destroys the unconscious stereotypes that we have there about the differences between men and women. As a result, the conclusion is clear: we are all in captivity of «neuro-sexism», a term that is used for K. Fine's debunking pseudoscience and pseudo-scientific research findings of gender differences. As a serious academic book, it is full of so much information that it is impossible to overstate the importance.

K. Fine convinces us, using the evidence of scientific research, the so-called «typical male's» or «typically female's» behavior, supposedly testifies to the fundamental differences between men and women, cannot be real true evidence based on real differences in the biology of brain processes, but the modern version of the established old sexist ideas about proper, the true place of women and men. K. Fain proves that cultural rules determine our behavior more than the device and structure of the brain.

She stresses that gender identity is formed by the mind and not determined by our brain; that is to say, the software and not the hardware device [1]. Thus, the book debunks the myth of a fundamental difference in the unit of male and female brain. The author ruins the old-rooted stereotypes that the female brain is rigidly arranged only for family life. Her research argues that there are no constant, entrenched biological differences between women and men brains. There are some differences, indeed. And these little differences cannot be the real reasons for the relatively small number of female engineers, and on the contrary, men among those who work to care for others. Old stereotypes subtly use science and turn it into a pseudo-science. Both science and society operate undercultural norms formed earlier. These norms do not want to give up, because for them there is a policy of the authorities existing.

Cornelia Fine in her two books («Delusions of Gender» and «Brain Storm») was able not go the usual route of trying to compare male and female brain, and thus she managed to avoid the common, in this case, errors. The author was able to adjust our understanding of the differences convincingly, using scientific evidence and proving that the male and female brains are more similar than different, and that the little differences existed are not strictly fixed once and for all, but are variable depended on the context of femininity and masculinity in different generations and

cultures. The brain, on Fine's opinion, is extremely flexible and socially dependent system. And unilateral perception of the system completely eliminates its full and correct understanding.
Australian scientist, K. Fine, has scientific means to debunk the myth existed so much time that the biological differences in the brain are the cause of the different behavior and different contests of masculinity and femininity. This book is a powerful blow to the neuro-sexism in science and sexism in society and culture. There are evidences in the overall picture of our world where we can see the manifestations of gender stereotypes. K. Fine irrefutably proves that we are more the result of cultural traditions which we were brought up than are the result of the brain's biology. Moreover, C. Fine, like M.Kimmel, leading expert in history of masculinity, argues that there are more differences among men, as a group, and among women, as a group, than there are differences between the groups themselves. The American scientist M. Kimmel points that gender differences as the approval of two qualitatively different kinds of humans are the result of gender inequality, but not its cause. Gender inequality makes the difference, and these different derivatives are then used to justify gender inequality.

Scientists proved that contents of femininity and masculinity are filled with different peculiarities, depending on the more valued in the community features in different period of history. K. Millett, in the book «Sexual Politics» and S. Firestone in the book «The Dialectics of Sex» showed that the issues of femininity and masculinity have always had to deal with issues of culture and their representation in the struggle for social and economic change. M. Wallstonekraft wrote in the XVIII century that women relegated to small objects, the category «woman» was created in opposition to the category of «human». Turning to the study of the lives of women specific in social and political spheres, M. Wallstonecraft delineated such oppositions as the feelings / mind, nature / culture, private / public. Her analysis of women's body specificity showed the urgency of the problem: even nowadays, in the XXI century, there is also the tendency «to blame» a woman's body for the social and political oppression. The study of women's autonomous «subject» who is able to speak her own «voice» in a culture resulted in ruining of essential man or woman.

The researchers ask if we remove the gender or sexual difference as a central organizing principle of gender inequality, what the implications for political practice are. Is sex / sexual difference primary or sole term of gender difference? If this distinction is not a fundamental part of our identity, why it has a privileged position? According to C. Di Stefano, the support of such privileges means the creating of another totalizing fiction, which is to be subject to the opposition, and deconstruction in the name of diversity [4]. J. Flex proves that the critique of Enlightenment ideals should include organically postmodern philosophy to the theory of feminism. She writes that post-modernism should support the interpretation of ambivalence, ambiguity and multiplicity, as well as to expose our aspirations for the establishment of order and structure, no matter how arbitrary and overwhelming they are [3].

Introduction of gender as an analytic category allowed deconstructing the opposition between women and men and at the same time to indicate that such opposition is the mechanism for the creation of social, cultural and political hierarchy. During last twenty years they have been trying to describe the phenomenon of power relationships between the sexes without recourse to «feminine» experience or universal oppression of women. The situation is complicated with the expansion of transgender studies, the existence of «in-vitro» clinics, etc. With the active intervention of medicine in reproductive processes sex ceased to be what it always was. Gender was also changed. Scientists announced the «end of gender». The main reason for these changes is the recognition of «transgender» identity. The problems arising in this context concern primarily the impact of the new cultural and sexual situation on gender theory.

Scientists ask fundamental questions if the extreme «fluidity» of gender roles confirms postmodern gender theory or refuse them. Not premature postmodernism rejected biological and psychic determinism? Or those who reject postmodernism could not understand what postmodernism, in fact, covers much more shades and nuances in the assessment of gender? Is it really proclaimed that a transgender century means the end of gender or we cannot understand all peculiarities of very specific process? Is not possible to distinguish sex (body, anatomy, face) and

gender (social and cultural norms) that dictate how femininity and masculinity are constructed? What is first sex or gender? Is there is, after all, any kind of disembodied matter inherited in gender, which cannot be reduced to the anatomy or to the social, cultural or political norms?

If transgender individuals are aware of their true gender, regardless of their bodies or gender «messages» addressed to him\ her from childhood, it might mean that there is a third factor explaining the femininity or masculinity, but not reducible to the areas that are referred to as sex or gender . Scientists prove the gender is always «already living». It is shaped, culturally mediated and historically constituted. This does not mean that we have some kind of core, essential femininity or masculinity, striving to «go out», to find an appropriate expression. Rather, it's the culture dictatorship, under which the «actors» (persons who act) construct themselves, taking, and sometimes updating marked gender codes historically determined. From the moment of our birth (or, perhaps, earlier), we are coded by color (pink / blue) as a girl or a boy and systematically are educated according to our gender. Thus, expectations are formed, cultural ideology absorbed, and it is assumed that the identified anatomically girls will act like girls, and vice versa.

However, these traditional views have included many complicating factors recently. The more transgender identity became, the more it was obvious that cultural expectations led to surgery to ensure the consistency of individuals with their gender ideas. Last affected pediatric surgeries, infants with a non- vague sex (intersexed) undergo surgery. The researchers point out that in some cases, when the children were brought up as a certain sex after surgery to remove their «ambiguity» felt they belonged to the opposite sex, and not to that they intended. Scientists point out that even very young children, who don't know about the surgery feel discomfort and cannot be adapted to the environment. This discomfort is a result of non-compliance to «prescribed» gender to their real, internal gender.

Thus, the researchers conclude that if there is no «inner truth» of gender in the Cartesian sense, one can also say that gender is completely understandable as a social and cultural construct. If gender is not just due to the culture, then there must be something internal. This internal matter may be not biological, but it is exist as unspoken and unspeakable matter. But there remains the question of how this «unspoken gender» can be attributed to the natural and genetic requirements. We should taking into account the fact that we are all born in a world filled and determined with gender norms, which we must comply. These standards «proceeded» in our culture before our birth and we start reacting to them long before we learn about these methods of encoding. Obviously, transgender conventions require refreshing all ideas on inter subjectivity and performance. Postmodernism offers the following vision of that problem. It stresses that between sex and gender is no direct causal link. Some gender theorists argue that gender precedes sex.

The modern concepts of sex biology are established by some of the specific cultural and historical concepts. They are historically discrete prescriptive gender norms which are generated from the powerful discourse of biology and which are also the subject of the authorities. «Truth» about our bodies appears to reflect the certain cultural stereotypes. This so called «truth» includes also the idea that «natural» explanation is the best suited for all social phenomena explanation. From this point of view, all our ideas about gender are the result of intrinsic nature of sex. On the other hand, to be consistent, the followers of social constructivism should refute the ideas that sex is primary and is logical and historically precedes any of its interpretation. So there is no any metaphysical or ontological precedence or superiority which would dictate the ideology of gender. Ideological ideas arise, take the privileged position, became legal and seem natural depended on cultural and social norms valid in this historical period. So, the «base» role of gender is determined with a social consensus on what sex or gender should be in this certain society. Idealized and naturalized status of biological claims must therefore be attributed not to some internal characteristics, but to the process by which the dominant views comes into use, are spread and are taking into consideration. In other words, the content of masculinity and femininity categories verifies in different people at different times and is legalized through predefined society's rules implementing. For example, in some cultures, a man to prove his manhood must be stoic, in others

ones he must be sexual. Or, in one historical period, the woman should be an active, competitive, and in other period she should be - a passive, dependent person, waiting for protection.

CONCLUSION

As soon as the management study should be filled with the gender issues' s understanding we have to provide the students with mutual respecting each gender to create a really stable situation at any working place resulted in business's stability. Having educated the students in understanding the value of certain peculiarities of each gender we'llreceive the person who runs businesssuccessfully.It involves the use of thefull contents of femininity and masculinity categories of «other» gender without shame of «improper» gender features applying. The today's idea of Modern Community is based on just these grounds.

REFERENCES

1. Киммел М. Гендерное общество \ Майкл Киммел. - М.:РОССПЭН, 2006. – 464с.
2. Fine C. Delusion Gender: How Our Minds, Society, and Neurosexism Create Difference\ Cordelia Fine. - W. W. Norton & Company, 2011. – 338p.
3.Flax J.Postmodernism and Gender Relations in Feminist Theory\J. Flax //Feminism/Postmodernism. – New York and London: Routledge, 1990. - P. 39-62.
4.Stefano C. Di. Dilemmas of Difference: Feminism, Modernity and Postmodernism\ C. Di. Stefano // Feminism/Postmodernism. – New York and London: Routledge, 1990. - P. 63-82.

ADAPTING HIGHER EDUCATION CURRICULA TO MARKET NEEDS PERCEIVED AS A FACTOR OF ENTREPRENEURIAL DEVELOPMENT

Robert Majkut, Dariusz Wójcik

Entrepreneurship is a factor of sustainable social and economic development. It depends on numerous conditions including the quality of labour supply which plays a particularly significant role in times of dynamic labour market changes. The article is focused on the concept of entrepreneurs' participation in the development of educational curricula at a higher education school discussed based on an example of the research conducted among entrepreneurs by the Wrocław School of Banking.

1. SOCIAL AND ECONOMIC IMPORTANCE OF ENTREPRENEURSHIP

Entrepreneurship influences numerous spheres in which a society functions, and consequently determines the quality of life. Entrepreneurial development is a factor of the employment level increase in economy which is translated into increasing consumption and supply capacities of enterprises. It affects the competition and the emergence of innovation to satisfy social needs to a fuller extent. Entrepreneurship is a supranational and timeless social and economic phenomenon. Since the 1990s, the development of private enterprise in Poland has been favoured by the conditions created by the market economy, and particularly by implementation of the principles of economic democracy which assume liberty of establishment and management of businesses for all as well as equal rights regulating their operations. Consequently, entrepreneurship has become a process strengthening the market economy and gradually changing its ownership structure to the benefit of the private sector.[55] Small and medium-sized enterprises now account for 99.8% of the total number of economic entities operating in Poland. In the year 2009, SMEs generated 48.2 per cent of GDP, including 30.4% attributable to micro-enterprises, 7.9% to small companies and 10.1% to the medium-sized ones. According to the Central Statistical Office (GUS), large enterprises generate nearly 24 per cent of GDP. In 2009, the enterprise sector accounted for generation of 72.3 per cent of GDP in total. Following the Central Statistical Office's data, the enterprise sector employed 6.5 million persons in 2009, 1.36 million of whom (i.e. 20.8%) were employees of micro-companies, slightly more than 1 million (i.e. 16.1%) – employees of small companies and 1.6 million (i.e. 24.5%) – employees of the medium-sized ones. In total, the SME sector employed 61.4 per cent of all those employed in enterprises. Large companies employed 2.5 million persons, i.e. 38.6 per cent of all those employed in the enterprise sector. Therefore, SMEs must be considered as a significant economic force. Bearing the foregoing data in mind, one may claim that development of entrepreneurship is a significant factor of sustainable economic development[56], hence it affects the economic and social growth.

[55] *Przedsiêbiorczoœæ i zarz¹dzanie firm¹. Teoria i praktyka*, J. Targalski and A. Francik (eds.), Wydawnictwo C.H. Beck, Warsaw, 2009, p. 13.

[56] Compare: R.Majkut, D.Wójcik, "Przedsiêbiorczoœæ w Polsce po akcesji do Unii Europejskiej", at: *Ednaja Ewropa: Nowi Wikliki*, Scientific Booklets of the National Mining University in Dnipropetrovs'k, 2011.

One may also speak of a specific selection of conditions which influence entrepreneurial attitudes and relate to the interdisciplinary nature of the phenomenon in question[57]. In contemporary times, one should distinguish between the quality of labour supply and social competences of entrepreneurs among the aforementioned conditions. Limited in quantitative and primarily qualitative terms, labour supply constitutes a barrier for the development of entrepreneurship. And even though it is not the most important barrier the entrepreneurs tend to complain about[58], still its relevance must not be ignored. It is a barrier to skills, and hence it constrains the entrepreneurial development. This development is dependent on external resources to a considerable extent, i.e. on the qualifications of owners and employees. Being unable to find employees with appropriate knowledge, skills and competences matching the requirements of the changing environment (or, as an entrepreneur, being unable or willing to pay a higher price for a work resource characterised by the aforementioned properties), one faces decreasing dynamics of the enterprise growth or heads for stagnation. Due to the existing barriers, the development of this sector is not as dynamic as it could be[59].

Contemporary market conditions force enterprises, particularly those representing the SME sector, to build their competitive advantage based on quality, specialisation and offering adjustment to individual customer requirements. In order to be able to implement such a strategy, one necessarily needs a possibility to build employee teams tailored to the needs of individual projects, and this requires application of diversified solutions in terms of labour law and options of using flexible employment forms (their lack being a development constraining factor)[60]. Consequently, a barrier for the development of SMEs is the shortage of appropriately qualified employees. The reasons for this phenomenon are numerous, considering the constantly high unemployment rate and low employment rate. One may speak of the economic growth being responsible for the increase of the labour demand, maladjustment of the labour market structures to the needs of economy resulting from different factors including poor educational policy, increasing emigration from Poland to the EU countries as well as legal regulations which deprive the labour market of professionally active persons (premature retirements). Consequently, there is a shortage of employees versus the lack of labour efficiency increase, which contributes more and more to the rising wages in the SME sector. This may even lead these enterprises to losing their competitive edge[61].

2. SYSTEM THEORY AS A PERSPECTIVE FOR ENTREPRENEURSHIP STUDIES

Entrepreneurship as a determinant of the quality of life constitutes an important element of the economic system, and it depends on the same conditions as elements of the cultural and ideological system. In this respect, one may refer to such socioeconomic ideas as the concept of embededdness developed by M. Granovetter, the network concept of K. Polanyi[62] or the system theory according to T. Parsons and N. Smelser. They perceive the economy as one of many subsystems of a single

[57] Read more in: R.Majkut, D.Wójcik, "Przedsiêbiorczoœæ w Polsce po akcesji do Unii Europejskiej", *op. cit.*

[58] According to the report developed by the Civil Development Forum (Forum Obywatelskiego Rozwoju) entitled "How to liberate entrepreneurship in Poland?," these are: 1. high taxes, 2. administrative barriers, 3. low quality of the legal system, 4. difficulties obtaining funds, 5. difficulties in enforcing contractual payments, 6. too restrictive regulations on employing and dismissing workers, 7. barriers in access to structural funds, 8. difficulties related to declaration of insolvency, 9. expensive medical examinations. Source e.g.: www.rynekpracy.pl.

[59] According to the analyses of the Polish Agency for Enterprise Development (Polska Agencja Rozwoju Przedsiêbiorczoœci), in the year 2011, the most important factors constraining the development of companies included non-wage labour costs, lacking transparency and explicitness of indirect taxes (VAT), lacking transparency of the corporate income tax system, corporate income tax rates, inflexible labour law, competing against the grey market, no options of applying flexible employment forms, lack of qualified employees, administrative procedures, competing against privileged enterprises. Source: www.ksu.parp.gov.pl.

[60] According to entrepreneurs, the Polish labour law does not deliver such solutions. Hence the companies' capacity to adjust to the changing economic conditions is limited and so their competitiveness decrease. Source: ksu.parp.gov.pl.

[61] *Ibid.*

[62] M. Granovetter, "Economic Institutions as Social Constructions. A Framework for Analysis", *Acta Sociologica*, 1992, no. 35, p. 3 or S. Partycki, *Zarys teorii socjologii gospodarki*, TNKUL, Lublin, 2003, p. 46.

huge social system, and not even the most important one. T. Parsons claims that the social system absorbs all roles which must be performed by individuals in the course of social interactions. These interactions result from the performance of indispensable functions of human existence[63]. Therefore, the quality of entrepreneurial actions and their adaptive nature with response to the changing reality depend on the following factors:

1) qualifications of entrepreneurs who operate in a specific environment;
2) functioning of an enterprise which, in turn, depends on the knowledge, skills and experience of employees.

The system concept of the society functioning, including the economy, is based on the assumption that such a phenomenon as entrepreneurship depends to a considerable extent on the educational subsystem, but that it should also influence this subsystem.

Assuming that economy and society are complementary and based on human solidarity, enterprises should contribute to the increase of welfare and improvement of the quality of life. Social responsibility of entrepreneurs is related to the provision of jobs, improvement of social welfare, introduction of quality standards into processes, environment and life. Social life takes place in groups and communities, therefore the goals related to corporate social responsibility are performed based on the relationships between an enterprise and institutions, employee groups and various associations representing interests of the social environment. In practice, those relationships can be brought down to activities based on education, qualification improvement and raising skills of employees. At the same time, they are also based on the attention to the enterprise's most valuable asset, i.e. the employee[64].

3. CIVILISATIONAL CHALLENGES OF ENTREPRENEURSHIP

Civilisational transformations observed in the contemporary world as well as the cultural evolution inevitably lead to the development of a post-industrial knowledge-based society. Development of science and secularisation are the most important factors of change in modern societies. They trigger the evolution of critical and innovative thinking which constitute the very grounds of entrepreneurship. They should also change the contents of predominant social ideas that are supposed to reinforce the development and consistently improve the quality of human existence[65]. The foregoing seems particularly important as regards entrepreneurial attitudes.

Optimum utilisation of resources is a criterion of corporate social responsibility the purpose of which is to maximise such economic benefits and effects as profit, growth or competitive advantage. Under the above framework, one may also consider how important it is to implement innovation, transfer technology and increase quality of work through training, vocational courses and supplementary education. This kind of cooperation is focused on implementation of such components in educational curricula that will reinforce the adaptation of future employees to the needs of competitiveness. Consequently, it constitutes an impulse for development of the entire economy[66].

Therefore, the aforementioned civilisational transformations are an important challenge with regard to the conditions of entrepreneurship. In light of these civilisational transformations, acting efficiently on one's own account must entail the adaptation of entrepreneurs to the requirements of the ever changing socio-economic environment where information-related criteria, knowledge and skills moulding the competences required in the contemporary economy have started to dominate.

[63] R. Majkut, "Przedsiêbiorczoœæ jako determinanta jakoœci ¿ycia mieszkañców wielkiego miasta (na przyk³adzie zbiorowoœci wroc³awian)", Scientific Booklets of the Wroc³aw School of Banking, 22/2011.

[64] J. Adamczyk, *Społeczna odpowiedzialność przedsiębiorstw. Teoria i praktyka*, PWE, Warsaw, 2009, p. 57.

[65] A. Giddens, *Socjologia*, PWN, Warsaw, 2004, p. 68.

[66] R. Majkut, D. Wójcik, "Corporate social responsibility as a determinant of entrepreneurial climate", at: *United Europe: Widening Borders,* Scientific Booklets of the National Mining University in Dnipropetrovs'k, 2012.

In this respect, one may observe increasing significance of empirical studies and broadly understood participation of entrepreneurs in the pursuit of the idea of adapting the higher education curricula in order to improve the quality of workforce and entrepreneurs to the requirements of the market undergoing civilisational transformations. What seems to be the gist of the problem is, among other aspects, making the curriculum more practical, bearing in mind appropriate proportions of offering the necessary knowledge on the mechanisms according to which the society, including the economy, functions. It is hardly conceivable that competent employees, especially graduates of higher education studies, should not acquire such knowledge.

4. INVOLVEMENT OF ENTREPRENEURS IN THE DEVELOPMENT OF EDUCATIONAL CURRICULA – THE WROCŁAW SCHOOL OF BANKING EXAMPLE

In light of the foregoing assumptions, one should definitely consider the practical actions undertaken in order to optimise higher education curricula with reference to the needs of entrepreneurs. Examples of such actions are good practices the concepts of which should be widely promoted and commonly accepted.

An example of such good practices comprises the efforts of the Wrocław School of Banking which, under the Operational Programme Human Capital, sub-measure 4.1.1 – "Strengthening and development of didactic potential of universities", implemented the project of "Collaboration with employers as an opportunity to build a student's individual professional career". One of the most significant tasks included in the project was development of a concept and performance of research concerning labour market monitoring in Lower Silesia. The research was conducted within the period from March 2010 until December 2012.

The main research problem envisaged was the following question: what was the trend in the labour demand in quantitative and qualitative terms (preferred professions, qualifications and skills) declared by Lower Silesian employers within the period analysed and what were the changes the employers assumed in this respect in the perspective of one, two and three years?

The main objective of the research was to learn about the current status of the professions, qualifications and skills most demanded by employers from persons applying for jobs, and to explore the dynamics of these preferences in a time horizon of one, two and three years.

The scientific research objective was linked with the practical one, namely the introduction of modifications into educational curricula enabling the students to acquire education most valued by employers. At the same time, the practical objective was also related to the satisfaction of employers' needs connected with their possibilities of employing persons, i.e. graduates of the Wrocław School of Banking, having the expected qualifications.

The research was dynamic in nature and measurements were conducted 5 times. The methodological assumption was the measuring continuity. This purpose was possible to attain owing to an advanced method and research technique. The research was conducted by application of the sociological investigation method using the CAWI (*Computer Assisted Web Interviewing*) technique, namely a computer questionnaire-based survey by means of the Internet. The main research was preceded by:

1) preparation of an electronic application being the research tool – an electronic survey questionnaire which could be distributed via e-mail;
2) an e-mailing action conducted among entrepreneurs in order to raise their awareness of the relevance of the project being implemented and provide a description of the research and pragmatic objectives.

The research tool was an electronic survey questionnaire sent via e-mail, to be independently filled in by respondents. The tool in question was integrated with a computer programme which conducted statistical analysis of the trends indicated by employers, both in the large-scale and dynamic dimension. Furthermore, the manner in which such a system had been developed enabled monitoring of individual respondents' progress in filling the questionnaire in and potential support in case any technical or subject-matter related issues should appear. The system's technical

mechanisms also enabled contact with those surveyed in order to persuade the given person to begin and finish filling the questionnaire in. On the other hand, bearing in mind the respondents' comfort of participation, filled-in questionnaires were not assigned to individual respondents which provided for the elementary methodological prerequisite of such studies, namely the anonymity and confidentiality. The electronic survey questionnaire was modified in terms of the content and subject matter of issues it addressed, which proved to be a valuable option to stress the dynamics of measurements.

The survey was conducted among representatives of top business management, primarily owners of enterprises. Those were selected in a random manner based on a quantitative survey, i.e. the HBI Polska database.

The basic outcome of the research was a diagnosis of the employers' expectations in terms of professions, qualifications and skills of higher education school graduates. This diagnosis influenced the process of modifying the respective fields of study and educational curricula as well as caused an emphasis to have been put on these aspects of university studies which would enable the Wrocław School of Banking to release graduates professionally attractive to employers. Consequently, the Wrocław School of Banking introduced a series of modifications in the educational curricula[67].

The main research conclusions and recommendations in terms of the modifications to be introduced in the school's fields of study were as follows:

1) the entrepreneurs surveyed within the research period predominantly displayed trust towards graduates,

2) the qualifications most demanded from graduates included those one should have acquired completing studies in the field of technology and engineering as well as related to finance, management and economic competences,

3) the main recommendation provided by the entrepreneurs with regard to the educational curricula modifications, the purpose of which would be to adapt the graduates' knowledge, skills and competences better, involved making the studies more practical.

The research results were used by the school authorities to introduce a series of curriculum changes and modifications in the organisation of studies. They were to be tested in the course of the current academic year. They were not considered to be perfect solutions, but rather treated as innovative didactic concepts. Therefore, possibilities of making further modifications in the system were envisaged so that a consensus is attained between the entrepreneurs' expectations and the school's capabilities. What also mattered was to make the actions proposed serve the purpose of the school's pursuit of the strategic goal and mission. Moreover, the changes introduced could not cause depreciation of a higher education school to the mere role of a company delivering vocational training. The school is indeed of predominantly vocational nature, but the changes proposed had to correspond to a high level of educational quality and academic aspirations. Therefore, the modifications introduced comprised the following:

1. Inauguration of a new field of study – engineering logistics. It was a consequence of the opinion expressed by most respondents that the labour market was lacking highly qualified engineers.
2. Development of the relevant concept and subsequent introduction of subjects putting an emphasis on practical skills and enabling engagement of economic life practitioners into the curriculum of the engineering logistics field of study, the modification being a response to the employers' expectations stated in the questionnaires.
3. Introduction of the 2nd degree studies in Management under the Master's scheme in order to satisfy the employers' needs for highly qualified managing personnel.
4. Development of the relevant concept and introduction of specialisations responding to the employers' needs into the curriculum of the 2nd degree Management studies.

[67] According to the project assumptions, there had to be at least 13 such modifications, however, the knowledge acquired increased this number considerably.

5. Development of the relevant concept and introduction of the subject of Entrepreneurship into the curriculum of the 2nd degree Management studies the purpose of which was to develop practical managerial skills (at the same time, delivering academic knowledge on the interdisciplinary factors of entrepreneurial development). The subject was to put an emphasis on the practicality of education. For the sake of teaching of the foregoing subject, business practitioners were employed which could be interpreted as a significant response to the changes proposed by the entrepreneurs surveyed.

6. Development of the relevant concept and introduction of the subject of Negotiations into the curriculum of the 2nd degree Management studies. The subject was to put an emphasis on the practicality of education in the sphere of managerial negotiation skills. It meant that another important proposal of those surveyed regarding changes to be introduced into the curricula was actually implemented.

7. Inauguration of a new field of study – English philology featuring the Business English specialisation. It was a consequence of the opinion expressed by most respondents that the labour market was lacking highly qualified employees capable of using business English skills in communication.

8. Introduction of a new timetable at the 1st degree studies in the field of Management according to which larger emphasis was put on practical classes, workshops and exercises at the expense of time traditionally consumed by lectures (this concept may also be introduced in other fields of study).

9. Introduction of new academic year organisation at the 1st degree studies in the field of Management which consisted in abandoning the semester division. The purpose of this modification was to enable delivery of short, condensed courses to develop the attitudes of regularity and intensified involvement among students, assumed to appropriately prepare them for functioning in the labour market according to the demands expressed in the questionnaires by entrepreneurs.

10. Introduction of new rules for passing final exams at the 1st degree studies in the field of Management. The change consisted in departing from traditional test exams in favour of individual written papers or group projects pertaining to specific problem solutions. It correspond to the entrepreneurs' expectations expressed in the questionnaires.

11. Introduction of new rules for partial passing of subjects at the 1st degree studies in the field of Management. The change consisted in tutors initiating activeness of students during classes (e.g. through homework). The purpose of the modification was to develop attitudes based on activeness and involvement, at the same enabling the students to manage their time individually and fight against the stress. It was a consequence of the necessity commonly mentioned by entrepreneurs in the questionnaires that graduates demanded in the labour market should posses the aforementioned skills and traits.

12. Development of the relevant concept and introduction of the subject of Business Communication Fundamentals into the curriculum of the 1st degree studies in the field of Management, supposed to provide practical education in the scope of communication skills within the area of economy, both in groups and in the interpersonal sphere. It was a response to the need expressed by entrepreneurs.

13. Development of the relevant concept and introduction of the subject of Learning and Logical Thinking Skills into the curriculum of the 1st degree studies in the field of Management, the purpose of which was to provide practical education in the scope of learning, acquiring knowledge and researching its sources. The subject was assumed to prepare students to systematic expansion of their competences and make them realise the necessity of permanent learning. It was a response to the need expressed by entrepreneurs.

14. Development of the relevant concept and introduction of the subject of Socio-Economic Problems into the curriculum of the 2nd degree studies in the field of Management. The purpose envisaged was to provide practical education in the scope of real problem solving skills in relation to the functioning of the society and economy (at the same time, developing knowledge-

based social competences the subject was also to deliver). It was a response to the need expressed by entrepreneurs.

15. Maintaining the certificates confirming the graduates' qualifications, including language skills. The matter of graduates applying for employment holding such certificates was raised by entrepreneurs describing their expectations.

Furthermore, based on the entrepreneur research results, numerous additional improvements, not directly related to the curriculum, were introduced with the purpose of expanding skills, knowledge and competences among the students and future employees. The initiatives definitely worth mentioning include consultations pertaining to managing one's own business, assertiveness or auto-presentation workshops, cooperation with businesses under the framework of new internships and study visits etc.

What should also be stressed once again is the innovativeness of many subject matter related and organisational efforts. However, in the course of implementation of individual actions in the school's reality it was proved that not all of them had been properly planned, meaning that they required corrections or even thorough modifications, as in several cases. Nevertheless, it was still consistent with the methodology of innovative project implementation which assumes that, once the testing phase has been completed, specific changes are introduced to optimise the solutions adopted.

CONCLUSIONS

The research conducted by the Wrocław School of Banking in order to examine entrepreneurs and study their opinions on the changes to the educational curricula they perceived as necessary from the labour market perspective proved extremely fruitful. Extensive empirical material was acquired, and at the same, it was valuable in terms of the subject matter knowledge gathered with regard to developing and triggering changes whose purpose would be to prepare students as comprehensively as possible for their professional careers while simultaneously satisfying the entrepreneurs' needs concerning the qualifications of the labour supplied. Such efforts should be promoted in a broader scale, among other higher education schools, both in Poland and abroad. This proposal seems particularly valuable from the perspective of countries aspiring to join the European Union, such as Ukraine, for instance. There is definitely a need for implementation of ideas and good practices for the sake of engaging entrepreneurial circles to participate in the development of educational curricula and practical studies of the problem of the didactic process optimisation on the higher education level under Ukrainian conditions. It will facilitate integration of the Ukrainian society and economy with the European environment and primarily provide a significant determinant of Ukraine's adaptation to the requirements of a knowledge-based civilisation.

REFERENCES

1. Adamczyk, J., *Społeczna odpowiedzialność przedsiębiorstw. Teoria i praktyka*, PWE, Warsaw, 2009.
2. Giddens A., *Socjologia*, PWN, Warsaw, 2004.
3. Granovetter M., "Economic Institutions as Social Constructions. A Framework for Analysis", *Acta Sociologica*, 1992, no. 35.
4. Majkut R., "Przedsiębiorczość jako determinanta jakości życia mieszkańców wielkiego miasta (na przykładzie zbiorowości wrocławian)", Scientific Booklets of the Wrocław School of Banking, 22/2011.
5. Majkut R., Wójcik D., "Przedsiębiorczość w Polsce po akcesji do Unii Europejskiej", at: *Ednaja Ewropa: Nowi Wikliki*, Scientific Booklets of the National Mining University in Dnipropetrovs'k, 2011.
6. Majkut R., Wójcik D., "Corporate social responsibility as a determinant of entrepreneurial climate", at: *United Europe: Widening Borders,* Scientific Booklets of the National Mining University in Dnipropetrovs'k, 2012.

7. Partycki S., *Zarys teorii socjologii gospodarki*, TNKUL, Lublin, 2003.
8. *Przedsiębiorczość i zarządzanie firmą. Teoria i praktyka*, J. Targalski and A. Francik (scientific eds.), Wydawnictwo C.H. Beck, Warsaw, 2009.
9. www.rynekpracy.pl
10. www.ksu.parp.gov.pl

YOUNG PEOPLES' INVOLVEMENT IN SOCIAL ACTIVITY

Agnieszka Dejnaka, Joanna Nogieć

According to the research carried out by some social organization, citizens' involvement in socially oriented activities increases together with the growth in education. This means that from the point of view of the civic society it is desirable to educate the youth. At present one can see intensive activities of companies and non-profit organizations on the Internet which directly results from social changes: development of Web 2.0 and the information society. Activities of young people and non-profit organizations based on the Internet have been researched and analysed in terms of their efficiency. The paper presents ways of young peoples being involved in socially oriented activities.

INTRODUCTION

Social marketing is a corporate philosophy which consists in using techniques and rules of classical marketing in order to trigger off socially desirable attitudes and behaviour[68]. All social activities target at creating such attitudes and human behaviour so that they constitute a fundamental way of thinking and conduct.

The internet as an interactive medium is subject constant changes. After Web 1.0 development of Web 2.0 followed. Web 2.0 solutions base on creation of websites (and thus logical architecture of applications) that enable users pass on their knowledge (in other words 'information sharing') and to co-create information on the specified platform. An evolution attitude to building applications is an ingredient of Web 2.0 strategy. Creators of applications assume creating Internet environment where internet users gather and additionally:

- virtual knowledge based communities would be created,
- modification and development of websites according to preferences of internet users would take place.

At present intensive activities of companies and non-profit organizations are carried out on the internet which directly results from social changes: development of Web 2.0 as well as the information society[69]. Results of the technological resolution and development of the Internet as well as development of the society have become important factors of change in enterprises[70]. It also touches enterprises which realize CRS strategy[71]. New technologies present them with challenges which enable communication with the target group and starting up cooperation with non-profit organizations and joint operation on virtual grounds.

[68] Rok B., *Społeczna odpowiedzialność przedsiębiorstw w kontekście strategii osiągania obopólnej korzyści*. [w] red. Z. Pisz, M. Rojek- Nowosielska, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław 2008, nr 5/2008, p.56;
[69] *The future of CSR issues for the next decade*: http://www.csr-asia.com/report/report_future_of_csr.pdf, May 2011;
[70] Penc J., *Strategiczny system zarządzania: holistyczne myślenie o przyszłości: formułowanie misji i strategii*, Placet, Warszawa 2011, p. 3;
[71] *Net Track, Milward Brown SMG/KRC*, lata 2001-2009: http://www.internetstats.pl/index.php/2009/12/nettrack-smgkrc-50-polakow-to-internauci-viii-x-2009/, March 2011;

Internet and its development make its users spend more time in virtual space and thus more typical aspects of life are transferred to the internet. Activities of young people and non-profit organizations on the Internet are activities which have been researched and analysed in terms of its efficiency. That is why direct surveys have been carried out aiming at evaluation of activity of young Internet users.

SOCIAL ACTIVITY

Social activity is often defined as charitable activity. According to the definition provided by the Centre of Voluntary Service charitable activity consists in supporting the poor and those in need, in broadly understood charity focused on the most deprived but also the activity that is concentrated on education, culture and science[72].

Tendency to get involved in social activity depends on:

- A situation in which a particular person found himself or herself- people react differently in repetitive and exceptional situations – a higher probability that they get involved in social activity once occurs in exceptional situation (e.g. flooding, earthquakes);
- Features of a person who needs help- one more willingly helps the person who is similar or resembles a relative or an acquaintance;
- Personality of an individual, his social sensitivity, empathy or willingness to help (the so called social workers)[73].

Social behaviour is meant to bring benefits to another person or a society by helping or sharing. If we are to discuss behaviour of social nature one has to notice a need of a different individual and willingness to satisfy it[74].

According to a different definition pro-social behaviour means „purposeful behaviour targeted at bringing benefits to other people. It comprises organized activities in order to support, protect or develop the interest of other social entities such as people, group, communities and institutions as well as to contribute to their wellness and development. It is essential that the undertaken actions expressed social values"[75].

INVOLVEMENT IN CHARITY

Below there are research results obtained by the Authors. The research was carried out in January 2011 and its main purpose was to define students' familiarization with charitable actions and their involvement in work of social organizations. A questionnaire to fill in by students was used as a research tool. It consisted of multiple choice questions, open questions and demographic and sociological questions. The selection of an attempt was done on purpose – students were chosen for the purpose of the survey. The mode, the type and field of studies were used as criteria for differentiation. The research was carried out in three viovodeships: dolnośląskie, opolskie and kujawsko-pomorskie. As a result of the research 298 questionnaires were obtained and after analyzing and verifying the records 294 were qualified.

In the opinion of ¾ of the respondents, social organizations and the state should help those in need (table 1).

Source: Elaborations of one's own. Answers do not always sum up to 100 percent as respondents marked more than one answer.

Over the half indicated the family as an institution which should provide assistance. 38 percent of respondents indicated the church, nearly 9 percent indicated companies. Only a minor

[72] Centrum Wolontariatu, www.wolontariat.org.pl, March 2011;
[73] Encyklopedia PWN, www.pwn.com.pl, February 2011
[74] Encyklopedia PWN, www.pwn.com.pl, February 2011
[75] M. Adamska-Chudzińska, Zachowanie prospołeczne w przedsiębiorstwie a spójność społeczno-ekonomiczna, [w:] Nierówności społeczne a wzrost gospodarczy w kontekście spójności społecznoekonomicznej, red. M. G. Woźniak, Published by University of Rzeszów, Rzeszów 2008, p. 414-415

percentage (1.4%) thinks that nobody should support those in need. my. This means that a substantive majority of the surveyed students notices problems of the poor.

Table 2.

Who should help the poor

Type of organization	Percentage
Social organizations	75,9%
state	75,5%
family	53,4%
Church	38,4%
Companies	8,8%
Other	1,4%
Nobody	1,4%

First of all actions targeted at feeding children need supporting (82.3 percent indicated that) – drawing 1. The second area which should be supported by charity is rescuing life and health (68 percent). The third place is taken up by the disabled (58.5 percent). These three areas are joined by the fact that they focus on helping people „wronged by fate". The support for sport actions (12.6 percent), culture and science (10.5 percent) was most seldom marked. This may mean that this type of activity are not perceived as social actions or they are supported only after other "more noble" aims are realized.

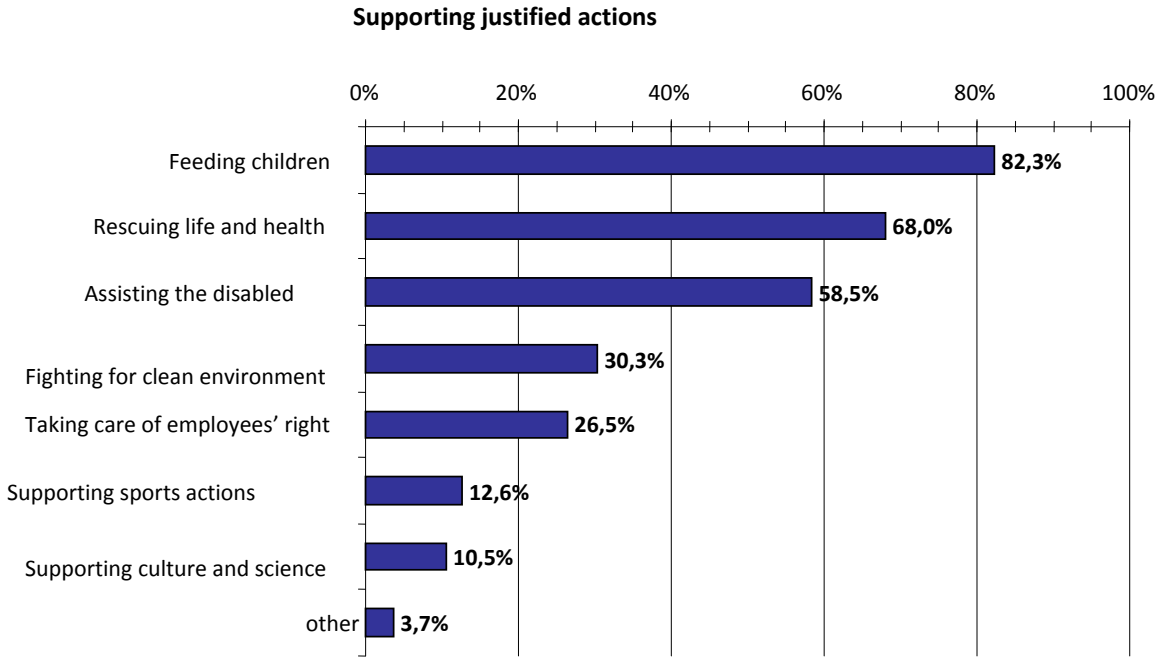


Fig. 1. Charitable actions which should be supported

Source: Elaborations of one's own. Answers do not always sum up to 100 percent as respondents marked more than one answer.

On average one out of ten respondents has claimed that they do not take part in social activity, other respondents marked a few ways which they use to support people in need – table 2. Among respondents who do not take part in this activity there are people who only study (as compared to those who combine working and studying). Taking on a job may involve raising awareness and financial possibilities of providing the support.

Table 2.

Respondents' involvement in social actions taking into account the gender and the professional status

In what social activity do you take part	Percentage of answers	Percentage of all		Percentage of all who:		
		females	Males	Only study	Study and have a temp job	Study and work
I buy products whose part of the income is allocated to charity	**64,6%**	70,2%	56,0%	66,7%	60,7%	65,0%
I support financially and tangibly selected charity organizations	**34,4%**	34,8%	33,6%	43,2%	31,1%	28,3%
I give 1 % of the tax to a chosen Public Benefit Organization	**32,0%**	32,0%	31,9%	17,1%	26,2%	49,2%
I support financially and/or tangibly chosen people	**14,6%**	15,7%	12,9%	18,9%	11,5%	11,7%
I work as a volunteer	**6,8%**	9,6%	2,6%	4,5%	9,8%	6,7%
I use a bank card whose part of the commission goes to the account of an charitable organization	**5,1%**	3,9%	6,9%	4,5%	3,3%	6,7%
Other	**3,4%**	4,5%	1,7%	2,7%	4,9%	3,3%
I do not take part	**9,5%**	5,1%	16,4%	12,6%	9,8%	6,7%

Source: Elaboration of one's own. Answers do not always sum up to 100 percent as respondents could mark more than one answer or denied answering some questions.

Almost 2/3 of respondents considered buying products whose part of income goes to charity as their own involvement in social activity. We can call it a „convenient" assistance as it does not require greater personal or financial involvement. It means helping while shopping which is more beneficial for the owner of the product in raising the self-esteem rather than for a charitable organization. About 1/3 of respondents declares that they support selected charitable organizations.

About 6.8 percent of respondents worked for social organization as volunteers. These attitudes are shown by young females (they get involved 3.5 times more often than men who took part in the survey). According to different research carried out on a representative sample in 2009 in Poland every sixteenth Pole (6%) worked as a volunteer. The volunteering job was most often done by the youngest respondents aged 18 to 24 (15%) including 20% of schoolboys/girls and students. The volunteering service is most often rendered by people with higher education (12%),

management staff and specialists of senior level (16%), entrepreneurs (10%) and people who assess their financial standing well (10%).[76]

USAGE THE INTERNET IN CHARITY

The second research area concerned various promotional forms supporting social activities online. As part of viral marketing petitions concerning social actions are sent online. Considering the fact of expressing one's opinion about social issues on the Internet, we can notice that over 40% of respondents said they participated in such undertaking at least once - table 3.

Table 3. .

Signing petitions for social actions via Internet.

Signing petitions for social actions via Internet	Number value N=500	Percent value (%)
YES	203	40,7%
NO	297	59,3%

Source: own elaboration on the basis of direct survey research, scientific grant NN115247236, N=500

Respondents indicated the following petitions that they signed on the Internet:

1. Animal and plant protection - about 78% respondents including:
   - objection against brutal treatment of animals (killing horses),
   - objection against killing seals for fur, killing lynxes,
   - objection against cutting down forests,
   - petition in favour of animal shelters,
   - propagation of tightening punishments for people abusing animals, expanding the area of national parks;
   - protection of white Starks, beavers and whales
   - protection of cats and dogs in Asian countries
   - improvement of the Law on Animals protection
2. Social issues – about 98% indications of respondents, petitions were connected to:
   - objections against stoning a raped women in Arab countries;
   - helping the homeless,
   - ban on truck going through villages.

PETA and Greenpeace were the organization which were indicated in the petitions. One can observe intense activities of these organizations related to activation of internet users through viral marketing in issues of fauna and flora protection.

Over 97.8% respondents declare using You Tube, including 6.6% watching films broadcast by companies in cooperation with non-profit organizations or charities. Out of the films mentioned the following names of organizations/ companies appear:

a) PETA
b) GOCC
c) TVN/ You are not alone

A small percent of film viewers may be caused by little interest in charities and difficult issues of films as well as difficulties with reaching topics on You Tube. If it results from the failure to reach Internet users with information then it is companies' / organizations' task to activate their activities on the most popular film/entertainment service of Google.

The next issue concerned the usage of e-mailing and blogs for communication between a company/organization and an addressee of an action. In case of blogs respondents only indicated blogs of Janina Ochojska (34% indications) who is a President of the Polish Humanitarian Action

[76] Działalność społeczna Polaków, komunikat z badań, Centrum Badania Opinii Społecznej, January 2010, p. 14

(PAH). In her blog Janina Ochojska informs about all actions undertaken by the organization as well as about the cooperation with companies. In case of e-mailing one can notice that about 9.6% of respondents support actions that they heard of through e-mailing (table 4).

Table 4.

Participation in social actions disseminated through e-mailing.

Participation of e-mailing in charity purposes.	Number value N=500	Percent value (%)
YES	48	9,6%
NO	441	88,0%

Source: own elaboration on the basis of direct survey research, scientific grant NN115247236, N=500

Respondents indicated the following purposes of these actions:

a) Helping children (6.7% indications) in particular:

- feeding children/ Pajacyk
-giving 1% tax and other donations to children of acquaintances,
-operation of a child,
- operations after burns,
- help with recovery after an accident,
- helping a disabled child

b) Saving animals/ feeding (1%)
c) Helping hospices (1.4%%)
d) Environment protection (0.,5%)

As you can see from the above specification, in case of e-mailing the greatest appeal is launched for the sake of child's health and life. These are activities both on the national scale (e.g. Pajacyk) as well as helping particular cases of sick children of strangers or acquaintances. Assistance is also provided to hospices by respondents through e-mailing. This reaction is related to issues of plant and animals protection (in total 1.5% indications of respondents). The usage of e-mailing and blogs makes companies and social organizations get deeply involved as well as systematically informed about the progress in activities. Taking into account the popularity of Janina Ochojska's blog one may say that participants read reports which have been written in a "humane" way. It also helps build a social problem focused community which is extremely important in the times of the Internet.

CONCLUSIONS

The presented research is convergent with results of other research concerning Polish people. Main conclusions resulting from the analysis are as follows:

- social organizations and the state are first of all responsible for helping people in need,
- main objectives that should be supported consist in broadly understood assistance provided to people "wronged by fate",
- on average one out of ten respondents do not participate in social activity, other respondents indicated a few ways they resort to help the needy, convenient ways of providing assistance are dominant such as sending a charity text or the purchase of products whose part of income goes to charity,

Research carried out does not exhaust the problem of students' involvement in social activity however it shows tendencies occurring in this area. Moreover presented results of other research confirm that education has an influence on involvement in social activity. This means that making students sensitive to problems of the needy may result in their involvement for the benefit of other communities in the future.

Having considered online activities of Internet users non-profit organizations should create websites for social actions jointly created and should intensely advertise its address in materials. In their activities of non-profit organizations as it builds a good image and internet users have more respects its activities and they give more positive opinions about it. However non-profit organizations should strengthen their activities and use all possible forms of reaching internet users for the purposes of propagating their social ideas.

REFERENCES

1. Adamska-Chudzińska M., Zachowanie prospołeczne w przedsiębiorstwie a spójność społeczno-ekonomiczna, [w:] Nierówności społeczne a wzrost gospodarczy w kontekście spójności społecznoekonomicznej, red. M. G. Woźniak, Published by University of Rzeszów, Rzeszów 2008, p. 414-415
2. Centrum Wolontariatu, www.wolontariat.org.pl, March 2011;
3. Działalność społeczna Polaków, komunikat z badań, Centrum Badania Opinii Społecznej, January 2010
4. Encyklopedia PWN, www.pwn.com.pl, February 2011
5. *Net Track, Milward Brown SMG/KRC,* lata 2001-2009: http://www.internetstats.pl/index.php/2009/12/nettrack-smgkrc-50-polakow-to-internauci-viii-x-2009/, March 2011;
6. Penc J.*, Strategiczny system zarządzania: holistyczne myślenie o przyszłości: formułowanie misji i strategii*, Placet, Warszawa 2011
7. Rok B., *Społeczna odpowiedzialność przedsiębiorstw w kontekście strategii osiągania obopólnej korzyści*. [w] red. Z. Pisz, M. Rojek- Nowosielska, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław 2008, nr 5/2008, p.56;
8. *The future of CSR issues for the next decade*: http://www.csr-asia.com/report/report_future_of_csr.pdf, May 2011;

IMPROVING THE DEVELOPMENT MANAGEMENT PROCESS OF THE UNIVERSITIES: WAYS OF INTEGRATION INTO THE GLOBAL EDUCATION SPACE

Olena Yermoshkina

The basic in changes ranking of national universities in the global educational space were defined, the major directions for development of educational services and academic achievements to ensure growth in ranking were substantiated. Tools for creation of the complex management system of ranking were proposed.

INTRODUCTION

Modern trends in educational space, integration processes that occur at all levels of the economy and cover almost all areas of human activity necessitates consideration of university development strategy in the context of global education space, free movement of students and graduates, faculty, etc. In this case, particular relevance should by paid to the issues of external evaluation of universities by experts, employers, academics, alumni and prospective students.

Today independent companies and authorized institutions form a lot of regional [8, 9] and global [10, 15-17] rankings. Notably, almost all of them aimed at assessing several aggregates, the composition of which varies depending on the purpose and direction of the rating. For example, the Academic Ranking of World Universities (ARWU) includes indicators related to research activity of the university faculty, including: the number of alumni and faculty – winners of the Nobel Prize

or Fields Medal, the number of frequently cited researchers in 21 categories, the number of articles published in journals Nature or Science, citation indexes for natural and humanities sciences ISI, journals' indexes, university size [10].

Times Higher Education World University Rankings [17] covers 13 basic indicators combined into five categories: teaching (learning environment), international representation (in the process of teaching and learning of foreign faculties and students), industrial inventions and innovations, the volume of income, reputation by R&D and the level of quoting. By the way the last two positions obtain 60% of weight.

Another group of rankings, that should be noted especially, are based on the results of processing of Web requests, i.e. web-metric rankings, which recently gaining more and more in popularity [16]. Rapid development of the information technologies should motivate the universities to improve its position in these rankings and encourage them to be more open, transparent and mobile.

It can't be missed, that along with many supporters of Universities Rankings there are a lot of critics who substantiates the falsity of individual indicators and methods for their calculation [14], problems related to funding of such rankings, their representation and inadequate selection of indicators as well as engagement of results and recommendations [3].

However, the reality is that the rankings exist; they are shaped, monitored and used as a benchmark for the development and decision making. Accordingly, each university should strive to increase their positions in the respective rankings.

Thus, the purpose of this study is to identify the main trends in the changes of national rankings of universities in Ukraine and in the world education space, define the rational directions of development of educational services and academic achievement to ensure the growth of university ranking, and to select the tools to create a comprehensive ranking management system.

1. DETERMINING THE PROFILE OF DEVELOPMENT: BRAND VALUE VS. RANKING

Every year, the methodology of rankings forming is improved. In this respect, targeting of educational institutions on achieving certain indicators that form the ranking becomes an actual issue. Ellen Hazelkorn [12] notes that focus on global ratings are flawed strategy for educational institutions. Is it really so? According to research by Interbrand [11, 13] brands of Harvard University and Stanford University value than respectively higher than Pepsi and Sony (Table 1).

Table 1

Brand value of universities in the Global Ranking of the Universities 2011

University	**Brand value, USD billion**	Rank of University			
		Academic Ranking of World Universities	World University Rankings 2011	QS World University Rankings	Webom etrics
Harvard University	**15,58**	1	2	2	1
Stanford University	**10,69**	2	2	11	2
University of California, Berkeley	**2,32**	4	10	21	5
University of Cambridge	**1,97**	5	6	1	24
University of Oxford	**1,47**	10	3	5	36
Information to compare					
Pepsi	**14,59**				
Sony	**9,88**				
Harley-Davidson	**3.51**				

Source: Composed on the basis [10, 11, 13, 15-17]

Why do these universities occupy the top positions in almost all rankings? Because they were focused on achievement of specific indexes in ranking, or because their efforts were directed on creation of successful brand in education for many years? Ranking – this is just a reflection of their success in key areas of building and developing a successful brand of the university. Understanding that a focus on achieving a certain position in the ranking is orientation on competitors, whereas focus on development of university's brand is orientation on consumers of education services is essential. More over, such approach is more appropriate to market conditions, because while fighting with competitors customers can be loosen. This is proved by centuries-old history of business.

University is a complex dynamic system that combines many elements that are in the relationship and interdependence. The effectiveness of the interaction of these elements defines the level of specific indicators of universities' performance that collectively appear in certain rankings.

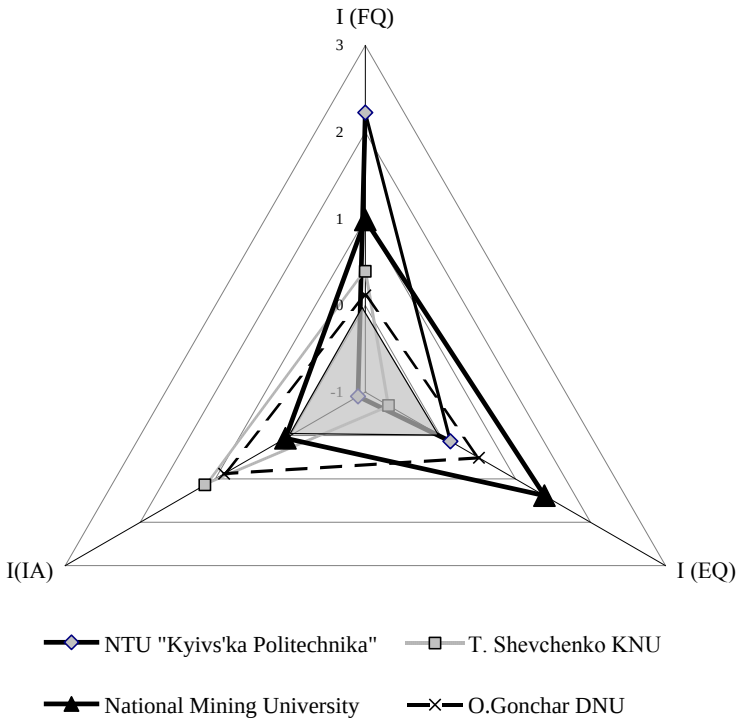
In order to identify the main trends of development of National Mining University (Further NMU) the dynamics of defined indicators for 2010-2011 was analyzed. For comparing the priorities in development the leaders of the ranking in Ukraine (Taras Shevchenko Kyiv National University and National Technical University of Ukraine "Kyiv Polytechnic Institute") and regional competitor – O. Honchar Dnepropetrovsk National University were selected.

Investigation of the structure and parameters of UNESCO Ranking "TOP-200" [9] and their dynamics shows that in 2011 university selected for the analysis developed in several directions. So the key direction for NMU was to improve the quality of education, efforts of T. Shevchenko KNU and O. Honchar DNU were aimed at improving of the international recognition and NTU "KPI" - at improvement of quality of the faculty (Fig. 1).

However, calculations show that significant breakthroughs in one area were given by lowering the indices on the other. Accordingly, the increasing in position in the appropriate ranking and changes in values of the particular components may be considered as an indicator of balanced development. The corresponding disproportions in the development profile (Fig. 1), and especially getting changes in individual indicators in the below zero area, indicate imbalances in development and should be considered as a basis for further development and adjustment of the strategy of the university.

Monitoring the profile of development of the university allows identifying major shortcomings in the implementation of the strategy aimed at improving the ranking of university and tracking the trends of competitors, enabling more thoroughly develop its competitive strategy.

Based on management theory [2, 4], should also be emphasized that ensuring balanced development of any organization is the foundation for further sustainable growth. So, sustainable development requires adherence to certain standards and business rules, including the provision of educational services. Accordingly, sustainable development must be based on a common approach to corporate management of the university: corporate philosophy, corporate culture, corporate standards and so on. This causes the formation of corporate identity of the university, and therefore provides for the formation of perception of the university by external and internal stakeholders as a single coherent image, that is, in fact, the brand building.



I(FQ) – index of quality of faculty
I(EQ) – index of quality of education
I(IA) – index of international activity

Fig. 1. Profiles of development of Universities by dynamics of ranking indexes in 2011
(UNESCO ranking for Ukraine «Top-200»)

Source: calculated by [9].

2. BRAND-ORIENTED STRATEGY FOR THE STAKEHOLDERS

It should be noted that the process of successful brand building is a long-term process that can only be realized in a strategic perspective and quick results from the introduction of brand-oriented development strategy should not be expect [5, p 28-29]. The process of brand building should cover three main areas: pre-qualification, the experience of buying & using and permanent relationship & recommendations [5, p 106].

Adapting appropriate fields of the relations between brand and customers (entrants, students, their parents and employers, i.e. customers of educational services) to the peculiarities of the university's performance development of the university's strategy should be focus on the fullest coverage of the entire spectrum of relations. Unfortunately today, most of universities in the battle for entrant practically ignore cooperation with experts, employers and alumni. According to experience of world's leading universities exactly alumni and employers create a certain image of the university and in many cases their opinion is the best recommendation for universities in attracting new students. So, exactly to satisfaction of the interests and wishes of these target groups of the stakeholders the attention should be paid in creating the strategy and positioning of the university in the education market.

The current trends of rapid development of the IT-technologies requires universities to activate use of tools of direct impact on stakeholders and to provide transfer of information from client to client: PR and advertising, specialized exhibitions, presentations, websites and web banners [5], etc.

In this context, the construction of a brand-oriented development strategy of the university should provide creation and implementation of advertising campaigns aimed at institutionalization

in the minds of customers (actual and prospective) of clear brand associations connected to the university with certain characteristics and properties, physical and emotional benefits. In addition, the promotion of education and R&D services provided by the university should be conducted not only as individual products, but also as components of the corporate brand of the university.

An important aspect of the initial stage of selection is to encourage communication between actual (students, employers, alumni) and prospective (entrants, their parents, prospective employers) customers of educational services. In this case it is necessary to use modern technologies to deliver information: web forums, web conferences, social networks activity, on-line consultation (including by Skype). The last one is extremely important during the entrance campaign.

Analysis of the content and structure of sites of the most successful world university indicates that information that represents the activity of the university directed on creation of the best possible image of their students features (meetings with prominent individuals involved in the international projects, the top news and the main achievements on the global and regional level), providing with opportunities for the best mastering the specialties selected by the students and by the university (libraries, museums, remote and on-line counseling, etc.) and taking part in the social activity of the university, creating new technologies, R & D etc. is on the top of charts. In other words, the web-site should emphasize the focus of all activities of the university on student, so on the consumer.

Forming a successful brand-focused strategy is impossible without research and ongoing monitoring experience with educational services of the university. In this respect, for active and effective supplying educational services a brand-book of the university should by created in implemented. It should contain a detailed description of the characteristics of the target audience of university, mission, vision, values, university brand concept, a clear description of the corporate identity of the university, including ideas and images, which reflect a brand of the university, the concept of brand promotion, i.e. advertising images, stories, internal communications concept.

For each educational program it is also necessary to identify the functional characteristics of educational services which should not only be clear for customers but it should also be aware to marketing department of the university and other specialized units. It should not be forget about the possibility and necessity of selling R & D products and services, sales process of which should also be an integral part of the process of forming the university brand.

An important aspect of the brand-focused strategy of the university is to create a network of promoters, i.e. those who can promote educational services to new markets and find new customers. In this area special attention should be given, firstly, to creation of vertically integrated structures (real and virtual) of promoters, and secondly, to creation of the powerful system of cooperation with alumni. And this work is not limited to an annual meeting with alumni. It requires a systematic approach. For example Carlson School of Management (University of Minnesota, USA) received a powerful impetus to the development due to contribution made by grateful university graduate Kurt Carlson.

It should be noted that the implementation of the stages of building the relationship between the brand and consumers of the education services considered above are important, but all efforts can be negated if a system of permanent relationships and recommendations wouldn’t be build. According to the theory of brand management [1, 5] This aspect of building relationships provides coverage of such segments as customer service, technical support, publications, cross-border cooperation, innovative R&D, business cards, etc.

Adapting considered above to the functioning of the university the initially required step is to create the proper customer service that delivers quality educational services to the students. In this respect, standards required by state accreditation bodies to universities should be revised carefully. Their comparison with international standards of education and the quality of educational services testifies that they are significantly different in many aspects (especially access to the Internet, access to resources of the university via Wi-Fi, distance learning, on-line lectures and consultations, web-forums, etc.).

The cooperation of universities with the media should also be highlighted. In this case, three main aspects of the strategy should be involved: representation of the university in media on the different levels, own scientific issues and publications in scientific journals with a high citation index. Not only quality of education is a problem in many cases, but its perception by students, experts and employers. So, approaches to organization of the educational process should be improved as well.

In this aspect it is important to consider the practice of the world leading educational institutions, which, at first, even before the study carried out provide so-called “student orientation”, i.e. a detailed explanation of the structure of the university, opportunities for use the services provided by the particular centers (Career Center , Centre for Foreign internships, scientific research, etc.). Secondly, such course as "How to study", in which student become familiar with how to perform certain tasks, refer to faculty for consultation, how to be prepared for lectures and workshops, and so on, should be introduced in the curricula. Certainly the introduction of such course requires a unification of all procedure of studying, learning and examinations of subjects that should be reflected in the corporate culture and corporate rules and regulations of the University. In modern conditions online learning and submitting verification tests, coursework and other tasks, conduct video lectures, consultations via the Internet and with the technology of Skype, etc. is not an innovation, and is a prerequisite for a stable position in the education market.

In the context of the necessary conditions for increasing university ranking based on the implementation of brand-focused development strategy presented above it should be noted that the implementation of this approach, i.e. focus on the customer as the most important stakeholder, targeted on creation of an active client university brand perception and will help in the future to increase the university ranking positions. Never the less, an effective positioning of the university brand is impossible without an active implementation of R&D programs.

3. R&D: TRYING TO ACHIEVE THE INTERNATIONAL STANDARDS

Recently, requirements for quality of teaching and research as well as quality of faculty and the level of international recognition has been increased significantly in the national educational space. According to the latest requirements articles must be submitted to the journals listed in the international bibliographic databases [7], specialized scientific journals and issues should publish articles in English and provide the access to them on their web-sites [6], and so on. These increased requirements for the presentation of research results should be a push for fundamental changes in the corporate culture and standards of the university.

Over 90% of all scientific papers in the world are published in English. Thus, one of the priorities of improving corporate culture must become practice writing the majority of articles by domestic faculty in English. This usually requires a significant improvement of knowledge not only in speaking, but also in special academic English. Accordingly, in practice for masters and graduate students a subject “English Academic writing” must be entered. The main purpose of this subject is to teach undergraduates and postgraduates to present articles in academic English style.

In addition, it is mandatory for students and teachers to participate in such public scientific databases as SSRN and others. In this case, the newest publications, access to which, incidentally, is free, should be use as a basis for the creative tasks for students in certain thematic areas of discipline, for preparation of essays and development of critical thinking, which is the basis for the development of creative abilities of the student. As analysts mention, the ability to think critically and to solve the problems creatively is the basis for giving an impetus to the innovative development of technology and economics.

Preparation and presentation of the degree paper in English (or other foreign languages) should be a prerequisite for claiming by bachelors to the magistrates and recommended conditions for obtaining the highest points on the results of the preparation of the master qualification papers and recommendations for being considered as an applicant for Ph.D. study.

It should be mentioned, that if earlier in the labor market to be fluent in English was perceived as a competitive advantage, at present it is a requirement for obtaining the job according to the received graduate specialty. Moreover, mastering of several languages in many cases, especially as for foreign employers, has also become a requirement, not an advantage. In this case curricula for students preparation needs to be reviewed in order to provide teaching of courses and sometimes of cycles of subjects in English, German, Polish or other languages that are in demand in the labor market. Usually, this requires:

- creation of an appropriate reserve of faculty who are fluent in foreign languages;
- development of motivation system for faculty to use foreign language in teaching courses;
- mastering the most modern methods of teaching and assessment of knowledge, skills, abilities and achievements of students;
- inclusion into the strategy of the university of measures directed on the improvement of the language skills of the faculty.

CONCLUSIONS

Thus, summarizing the foregoing, it can be argued that the rankings should not be an end in itself for the university. An artificially increase of indexes of the performance is just a temporary solution to the problem, which in future will only complicate the achievement of a certain level of performance and may cause the imbalance in the functioning of the university.

Secondly, the ranking results should be considered as a benchmark for adjustment of the strategy of the university due to qualitative internal changes.

Thirdly, the basis for raising the rating positions should by a corporate philosophy, culture and rules targeted on the creation of the corresponding corporate perception of the university by internal and external stakeholders. In addition, international integration should be started with strengthening domestic requirements and creating favorable conditions for the possession of foreign languages by the faculty and students, use of languages for learning, teaching and carrying out research activities. It is also necessary to implement the system "pre-study" learning for the first-year students focusing on a particular achievements and outcomes expected to obtain for their own development.

REFERENCES

1. Аакер Д. Бренд-лидерство: новая концепция брендинга / Дэвид А. Аакер, Эрик йохимштайлер – М.: Изд. Дом Гребенникова, 2003. – 380 с.
2. Василенко В.О. Системний менеджмент стійкого розвитку підприємств. Диссер. на здоб…. докт. екон. наук.: 08.06.01 / В.О. Василенко / Таврійський національний університет ім. В.І. Вернадського, 2006. – 442 с.
3. Вачедин Д. Рейтинги немецких университетов: 10 причин (не) доверять / Д. Вачедин // [Електронний ресурс]: режим доступу http://ru.osvita.ua/abroad/higher_school/articles/6877/
4. Джонсон Р. Системы и руководство / Р. Джонсон, Ф. Каст, Д. Розенцвейг / Пер. с англ. под ред. Ю.В. Гаврилова. – М.: «Советское радио», 1971, - 648 с.
5. Котлер Ф. Бренд-менеджмент в B2B сфере / Ф. Котлер, В. Пферч. – Пер. с англ. – М.: Вершина, 2007. – 432 с.
6. Про затвердження Порядку формування Переліку наукових фахових видань України: Наказ Міністерства освіти і науки, молоді та спорту України від 17.10.2012 № 1111 [Електронний ресурс]: режим доступу URL:// http://zakon0.rada.gov.ua/laws/show/ z1850-12
7. Про опублікування результатів дисертацій на здобуття наукових ступенів доктора і кандидата наук. Наказ Міністерства освіти і науки, молоді та спорту України від 17.10.2012 № 1112: [Електронний ресурс]: режим доступу URL://http://zakon4.rada.gov.ua/laws/show/z1851-12

8. Рейтинг ВУЗов Украины "Компас" [Електронний ресурс]: режим доступу http://www.abiturient.in.ua/ru/rating/rating_kompas
9. Рейтинг ВУЗов Украины ЮНЕСКО "Топ 200" [Електронний ресурс]: режим доступу http://www.abiturient.in.ua/ru/rating/rating_unesko
10. Світовий рейтинг університетів (Academic Ranking of World Universities) за 2011 рік // [Електронний ресурс]: режим доступу URL:// http://euroosvita.net/?category=7&id=1194
11. Україна опинилася за бортом світового рейтингу репутації ВНЗ // Дзеркало тиждня, 14.03.2011. – [Електронний ресурс]: режим доступу URL://http://osvita.ua/vnz/news/15592
12. Учасники форуму ЮНЕСКО у Парижі обговорили проблеми міжнародних рейтингів / ЮНЕСКО, Париж, травень, 2011 р. / [Електронний ресурс]: режим доступу URL:// http://euroosvita.net/?category=1&id=1144
13. 2011 Ranking of the Top 100 Brands // Interbrand. - [Електронний ресурс]: режим доступу URL:// http://www.interbrand.com/ru/best-global-brands/best-global-brands-2008/best-global-brands-2011.aspx
14. Florian V. R. Irreproducibility of the results of the Shanghai academic ranking of world universities / Răzvan V. Florian // Scientometrics, 2007. – Vol. 72, Issue 1. -pp 25-32.
15. QS World University Rankings 2011/12 [Електронний ресурс]: режим доступу URL:// http://www.topuniversities.com/university-rankings/world-university-rankings/2011
16. Ranking Web of World Universities. Top Universities / [Електронний ресурс]: режим доступу URL://http://www.webometrics.info/top12000.asp
17. The Times Higher Education World University Rankings. The essential elements in our world-leading formula: [Електронний ресурс]: режим доступу URL://http://www.timeshighereducation.co.uk/world-university-rankings/2012-13/world-ranking/methodology

THROUGH STUDENTS' PARTICIPATION IN INTERNATIONAL PROJECTS TO BROADENING THEIR PROFESSIONAL KNOWLEDGE AND SKILLS AND DEVELOPING PROFESSIONALLY-ORIENTED COMMUNICATIVE LANGUAGE SKILLS

Svitlana Kostrytska, Olena Shvets, Jaroslaw Tomaszewski

The importance of international business projects in enhancing students' both professional knowledge and skills and communicative language skills is highlighted. It is pointed out that teamwork promotes the development of social and socio-cultural skills. The necessity of incorporating transferable skills in language syllabi is analysed.

INTRODUCTION

The demands of Ukraine and Poland in highly-qualified specialists who are capable of establishing business contacts and seeking business cooperation with foreign partners and possessing professional communicative skills are reflected in university language syllabi.

The overall aim of teaching and learning students of non-linguistic universities is to prepare them to communicate effectively in their academic and professional environments. It comprises a set of aims: practical (to develop students' general and professionally-oriented communicative language competences (linguistic, sociolinguistic, and pragmatic) in English); educational (to develop students' general competences (declarative knowledge, skills and know-how) and ability to learn); cognitive (to expose students to academic activities that draw on and further develop the full range of their cognitive abilities); developmental (to help students form general competences to

develop their personal motivation (values, ideals, etc.); to foster students' confidence as users of the language, and their positive attitudes and feelings towards learning the target language); social (to facilitate and develop students' critical self-awareness and interpersonal skills and to contribute meaningfully to changing international environment); and socio-cultural (to develop a broad understanding of important different international socio-cultural issues in order to operate appropriately in culturally diverse professional and academic environment) [2].

Knowledge of languages and an ability to communicate as a social tool is an integral element of social development. Changes in the geopolitical and economic situation of Poland and Ukraine, Poland membership in the European Union, tighter commercial and cultural relations with European countries as well as the European integration process trigger a constant and necessary acquisition of new competences.

Acquiring communicative competences by students allows them to use the knowledge and skills they obtain to solve specific communicative tasks in real-life situations.

Thus, university language teachers should know innovative teaching methods and techniques in order to choose and use the most effective approaches and tasks relevant to students' level, needs and interests in order to help them be competitive in the constantly changing and demanding job market.

The purpose of the research is to find out to which extent students' participation in international business projects increases their professional knowledge and skills and develops their communicative language competences; and how university language syllabi aimed to develop students' communicative language competences help students successfully participate in international projects in order to broaden their professional knowledge and skills.

1. RESEARCH ANALYSIS

Having considered future needs of managers, teaching should comprise vocational and interdisciplinary aspects and take into account changing goals, contents and methods of teaching. Apart from traditional teaching, new practical forms should be implemented into the study process. The most frequent ones are as follows:

- foreign students' exchange between universities
- specialized programs such as summer schools
- international programmes such as: business week, conferences, symposia, championships etc.
- lectures of visiting professors.

The respondents of the research carried out were students in their third, fourth and fifth years of studies of the National Mining University (Dnipropetrovsk, Ukraine) and Wrocław School of Banking (Poland) majoring in various business areas of specialism who were asked to reply to the following questionnaire about their experience in participating in international projects.

1. What university do you study at?
2. What is your area of specialism?
3. What year of study are you in?
4. Are you a participant of any international project? Yes No
5. If yes, what project(s) do you participate in?
6. If not, would you like to participate in any international project?
   Yes No Why? Explain your point of view.
7. Where did you get the information about the international projects?
8. Why did you decide to participate in international projects?
   Please, write 3 main reasons.
9. Which framework of international projects do you like most and why?

□ debates

□ teamwork
□ on-line projects

10. Did you face any difficulties when doing a project? Yes No
11. If yes, what kind of problems did you have? Please, identify them.
12. What helped you overcome the difficulties?
13. What do you benefit from participating in the international project(s)?

The information obtained shows that 72 % of those who were surveyed do not participate in any international project. Nevertheless, the majority of them (78 %) would you like to participate because they consider international projects as a good opportunity to:

- exchange experience
- gain experience of international work
- obtain new knowledge in their speciality
- broaden experience in management and marketing
- learn different cultures.

Twenty-eight percent of respondents are the participants of different projects:

- Summer School of Leadership
- International School of Leadership "Argo**"**
- X-culture
- Leader Project
- Europe Fair
- DIPMUN (Dnipropetrovsk International Program Model United Nations)
- Business Week (Poland, Latvia, Belgium).

The respondents have got the information about the international projects from the following sources:

- university website
- university advertisements
- NMU department of International scientific projects
- subject department
- university teachers
- annual university 'Fair of Opportunities'
- groupmates.

The reasons of participating in international projects are the following:

- gain knowledge and skills in marketing, management and business
- develop professional skills
- develop communication skills
- learn the culture of other countries
- widen outlook
- improve English
- make new friends
- travel.

The results of the research indicate that the preferable frameworks of international projects are teamwork and debates. Seventy-one percent of those who participate in international projects prefer teamwork, whereas 29 % stand for debates.

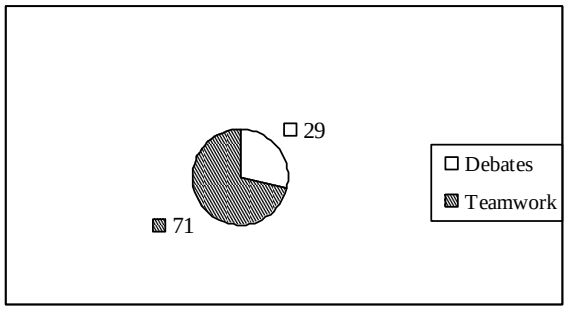


Fig. 1 Participants of international projects

Interestingly, those who do not participate in any international project, also answered question 9 about which framework of international projects they like most and why.

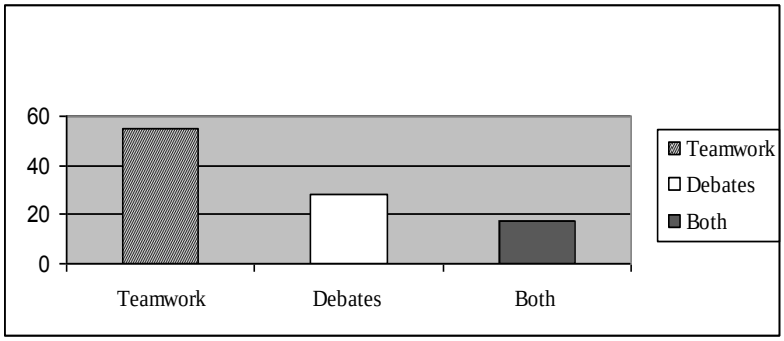


Fig. 2 Non-participants of international projects

The bar chart shows that 55 % would prefer teamwork, 28 % - debates and 17 % would participate in both. None of the respondents chose on-line projects. Team-working enjoys greater benefits as compared with debates. Being a team member students have ample opportunities to:

- learn how to work in a team
- solve problems in the most efficient way
- how motivate people and make them be interested (for a team leader)
- exchange opinions
- possibility to combine strengths of each team participant and help catch up with weaknesses
- learn others' experience
- increase self-esteem
- be more sociable
- make friends.

In spite of the fact that debates are not so popular among the respondents, they offered the advantages that allow to:

- generate new ideas
- make everybody think
- develop logical thinking
- look at the problem from different sides
- learn how to express your viewpoint and support it
- find a consensus when you disagree
- learn to listen to other people
- get to know different points of view.

When doing a project, some students encountered difficulties. One of them was connected with the fact that different cultures illustrated different behaviour in doing tasks and longer adaptation to each other. The other difficulty was a language problem. The respondents identified what helped them cope with the difficulties. Those were:

- team's help and support
- common goal
- hard work
- enthusiasm.

Finally, the respondents were asked to list benefits from participating in the international project. They set out the reasons that explain why it is important to participate in international projects which are the following:

- improve language skills
- gain and improve professional practical skills in marketing and management
- develop team-working skills
- open up possibilities for finding a good job
- see possibilities for continuing education abroad
- gain huge and valuable experience
- make new friends from different countries
- get acquainted with different cultures, lifestyles and behavior of different nations
- develop personal qualities
- be flexible
- visit new countries.

Thus, the respondents see international projects as an opportunity to develop all the skills they need, including enhancing professional knowledge and skills in their specialism areas, to be able to be successful in their academic environment and in their future professional career.

2. DEVELOPING SOCIAL AND SOCIO-CULTURAL SKILLS USING TEAMWORK AND DEBATES

The work in an international team presupposes that people should possess interpersonal skills and contribute meaningfully to changing international environment. Moreover, they should understand important different international socio-cultural issues in order to operate appropriately in culturally diverse professional environment.

A good way for students to learn social and socio-cultural skills is to apply cooperative language learning, which helps build a positive relationship in the classroom. Cooperative learning is defined as follows: '… group learning activity organised so that learning is dependent on the socially structured exchange of information between learners in groups and in which each learner is held accountable for his or her own learning and is motivated to increase the learning of others'[6].

Application of cooperative learning creates an atmosphere of friendliness, support, readiness to help and pride in others' success. Such a friendly and supportive atmosphere in a team is a good motivator for the students to learn. The most effective methods used are the following: discussions, debates, case-study, modeling, etc. because they get students to analyse the specific situations of cross-cultural communication and immerse into their discussion.

Teamwork is defined in Webster's New World Dictionary as 'a joint action by a group of people, in which each person subordinates his or her individual interests and opinions to the unity and efficiency of the group'. Thus, complementing each other people create a united and balanced group, in which a team member does what he or she can do best.

Effective teamwork has the following eight characteristics according to which the team must:

- have a clear goal with specific objectives
- have a results-driven structure
- have competent team members
- have unified commitment
- have a collaborative climate
- have high standards that are understood by all
- receive external support and encouragement

- have principled leadership [4].

University teachers should be interested in using teamwork and include collaborative learning in the study process. As teamwork has become an important part of the working culture, teaching effective teamwork is becoming a crucial task for a university teacher. In addition, being a part of a team can also improve learning a language and develop communicative language skills.

The mechanism behind such a form of teaching language and language competences in an international environment is as follows:

- a student is motivated to respond comprehensively in typical situations (initiates relations, introduces himself and others, greets and says goodbye, provides information about himself and asks others for information)
- a student uses sources of information in a foreign language (implementing materials, media, manuals, ICT)
- a student applies communication strategies (inferring meaning of words from the context, understanding a text comprising unknown words and phrases) and complimentary strategies (substituting a different word, description, non-verbal means) if they do not know a word
- uses polite expressions
- obtains and gives content-related information and explanations
- conducts simple negotiations in typical situations in everyday life
- expresses opinions, intentions, preferences and wishes, asks for opinions, agrees and disagrees
- expresses emotions (joy, dissatisfaction, surprise)
- asks for repetition or clarification (making something precise) [5].

The tasks that the teacher provides in the classroom to develop students' teamwork skills are aimed to help students to:

- explain their own ideas
- express their feelings
- listen carefully to each other's ideas
- respect the opinions of others
- ask questions to clarify others' ideas
- help each other
- solve problems.

Debates are also an effective task for developing students' social skills. In-class debates are an excellent teaching tool, which has a number of advantages. They foster students to:

- organise and synthesize information;
- improve critical thinking;
- develop language skills;
- encourage to learn on their own;
- increase cooperation skills [3].

For business students to be able to participate successfully in international projects it is crucial to:

- understand how core values, beliefs and behaviour in academic or professional environment differ from culture to culture (international, national, institutional);
- understand different corporate cultures within specific professional contexts and how they relate to each other;
- apply intercultural insights while interacting orally or in writing to immediate academic and professional situations;
- behave and react appropriately in common social, academic and professional situations in everyday life, and know rules of how people should interact in these

situations (recognise appropriate gestures, eye contact, personal space, and body language in each situation). [2].

This socio-cultural competence component 'strictly affects all language communication between representatives of different cultures' [1] and aims to develop understanding and interpret different aspects of culture and language behaviour in the world of work. It encourages the development of skills involved in appropriate behaviour in and responses to different cultural and professional situations. Socio-cultural competence is included into the list of study skills which are aimed at developing students' abilities to make effective use of the learning opportunities created by teaching/learning situations. [2].

3. TRANSFERABLE SKILLS

The international projects organised and held by Wrocław School of Banking and National Mining University have the following objectives:

- promote international cooperation of higher education institutions that allow students to go abroad for part of their studies or practice
- promote students' mobility
- present and discuss the issues of project management on the background of today's market conditions and the progressive processes of European integration and globalization
- increase the knowledge and ability to work in an international environment
- bring business issues to contemporary market conditions and advance the European integration process
- expand economic and managerial expertise, while creating intercultural citizenship through targeted forms of non-formal education, such as panel discussions, study visits, student presentations, workshops and leadership exercise
- introduce students to the practical aspects of doing business in countries with difficult entrepreneurship development conditions, exchange of experiences in this area
- present various aspects of leadership and the role of leaders in society
- develop skills in teamwork, negotiation techniques, that has a very important impact on the students' qualities of future leaders.

One of the benefits that international projects bring to students is an opportunity to get a good job. "Employers want adaptive recruits, people who can rapidly fit into the workplace culture, work in teams, exhibit interpersonal skills, communicate well, take on responsibility, perform efficiently and effectively, they want adaptable people, people who can use their abilities and skills to make the organization evolve through bright ideas and persuading colleagues to adopt new approaches and they want transformative employees, people who can anticipate and lead change, who have higher level skills, such as analysis, critique, synthesis, etc [8].

University language teachers can help students with a good job by teaching them the so-called transferable skills which are also called job-related or employment skills and mean abilities, aptitudes and qualities developed in one context that can be applied to another, for example, they can be transferred into different job areas.

There are top 10 essential transferable skills:

1. Communication Skills
2. Teamwork Skills
3. Time Management Skills
4. Problem-Solving Skills
5. Organization Skills
6. Learning Skills
7. Computer Skills
8. Listening Skills

9. Creativity Skills
10. Leadership Skills.

According to many employers communication and interpersonal skills are the most important of all the transferable skills. They want employees who are able to communicate effectively at an appropriate level, interpret and share knowledge and ideas and able to inspire and motivate. Below are the examples of communication and interpersonal skills that are included into the language syllabi developed by the department of foreign languages of the National Mining University, Dnipropetrovsk, Ukraine:

- speaking and presenting effectively
- writing concisely and accurately
- using active listening skills
- developing and building rapport
- persuading
- providing appropriate feedback
- negotiating effectively
- providing effective support for others
- motivating others
- cooperating with others
- being assertive.

Comparing the list of top essential transferable skills with those in the language syllabi, it is possible to claim that much attention is paid to developing transferable/job-related skills to students specializing in business and economics.

CONCLUSION

The overall aim of the language syllabi for business and economics students is to develop professionally-oriented communication language competences that will allow them to communicate effectively in their professional environments.

The skills that business students are to develop are professional transferable/job-related skills which can be used by students in learning other subjects as well as in many other different contexts including their careers and personal lives.

Students' participation in different international projects gives them an opportunity to develop the competences and strategies needed to participate effectively during their studies and in the professional situations they encounter. International projects help students meet their language requirements. Besides, they develop entrepreneurship and negotiation skills as well as practical knowledge in marketing, finance, PR, teamworking, project management and, of course, acquaintance with European culture. On the whole, participating in international projects increases students' motivation in learning the English language.

International projects enable students both to diagnose their strengths and weaknesses and to develop strengths and diminish weaknesses. They also give an opportunity to develop non-linguistic skills supporting the learning process such as self-assessment, resorting to various information sources, developing language awareness and communication strategies as well as interaction in a team [7].

REFERENCES

1. Common European Framework of Reference for Languages: Learning, teaching, assessment *(*2001) Cambridge: University Press.
2. English for Specific Purposes (2005) Kiev, Lenvit.
3. Kenneth L. Alford and John R. Surdu (2002) Using in-class debates as a teaching tool. Boston, MA. 32nd ASEE/IEEE Frontiers in Education Conference.

4. Larson C. and F. LaFasto (1989) *Teamwork: What Must Go Right/What Can Go Wrong*. Sage Publications, Newbury Park, California.
5. Martyniuk M. (2011), Internacjonalizacja studiów wyższych, Fundacja Rozwoju Systemu Edukacji, Warszawa
6. Olsen, R. and S. Kagan (1992) About cooperative learning. In C. Kessler (ed.), *Cooperative Language Learning: A Teacher's Resource Book.* New York: Prentice Hall. 1-30.
7. The system of education in Poland (2011), Foreign language teaching in school education, Fundation for the development of the education system, Warsaw
8. Woodley A. and J. Brennan (2000) Higher Education and Graduate Employment in the United Kingdom. European Journal of Education, Vol, 35, Issue 2, pp. 239-249

INNOVATIVE ASPECTS OF TRAINING SPECIALISTS IN THE FIELD OF IT PROJECTS MANAGEMENT IN THE CONTEXT OF EUROPEAN INTEGRATION PROCESSES

Mykhailo Demydenko

Innovative aspects of training specialists in setting up IT projects and their efficiency increase are examined. Results of the research can be used in the development of IT projects being developed in collaboration with the European Union.

INTRODUCTION

In recent years IT services industry has solidified its position as an important part of the Ukrainian economy. Following the dramatic downturn caused by the financial crisis, Ukrainian IT market increased by 40% in 2010 and by approximately 35% in 2012. Over the last three years a lot of software companies have been created. Ukraine cooperates with the European Union in a number of innovative IT projects, foe example ECOMMIS. Ukraine successfully competes with countries such as India in the development of IT projects. In the future, experts trained by European program will set up their IT projects. Therefore it is necessary to teach students how to develop innovative IT projects.

Information technology (IT) project management remains different from project management in other, more established fields of business for a number of reasons: informatization is a "brain objectives product" only, unconstrained by the laws of physics or by the limits of manufacturing process. The objectives of this module are to detect and prevent defects in software. Informatization of business can be highly complex. It is difficult to detect and prevent defects in software. Finally, as a discipline, IT project management technology is so young that measurable, effective techniques are not yet available, and those that are available are not well-calibrated. Despite these difficulties, there is an increasing body of knowledge about informatization project management.

1. RESEARCH ANALYSIS

Informatization Project Management module designed allows to teach students to manage complex IT projects which are developed together with the European Union.

The module "Informatization Project Management" presents that knowledge and also points to promising new conceptual material.

The objectives of this module are presented in a set of general objectives:

1. The student will understand the requirements for the content of a informatization project management plan.

2. The student will be able to write a plan for a small project according to an established standard.

3. The student will understand the role of the manager in each phase of the informatization project life cycle.

4. The student will be able use the modern software for IT project development.

5. Explain what aspects of software production are different from hardware production and what aspects are similar.

6. Define quality, productivity, and risk reduction within the context of effective informatization project management.

7. Describe, compare, and contrast at different models of informatization development resource estimation in the areas of: cost, personnel, physical resources, schedule, size of the product, and complexity of the product.

8. Explain the advantages and disadvantages of prototypes for risk management.

9. Define inspection technology and its application, and relate it to quality improvement.

10. Describe methods of tracking factors such as effort and resources during the development process.

11. Define the objectives and context of the following formal reviews: requirements, preliminary design, critical design, and acceptance.

12. Define quality assurance and describe its role in informatization project management.

The module "Informatization Project Management" examines modern techniques of IT project management [1] and specific examples of successful results in the business end e-commerce.

The module consists of lectures and laboratory work, which are conducted in the university laboratory e-commerce, with computers, advanced software, and high-speed Internet.

The first element is the discipline is Introduction to IT project management and Web-based management. It is useful to consider a list of the basic techniques of creating a project, increasing its efficiency. This section of module covers the following subjects :

1. Introduction to IT Project Management,
2. The Nature of Informatization Production,
    a. Key Objectives of Effective Management,
        i. Quality,
        ii. Productivity,
        iii. Risk reduction,
3. The Role of the IT Project Manager.

The second element of the module are the following topics:

- Planning the Informatization Project,
    - Business Planning,
    - Determining objectives of Informatization Project,
    - Forecasting demand for the product,
    - Proposal writing,
    - Requirements analysis,
    - Legal issues (patent, copyright, liability,warranty),
- Technical Planning,
    - Life-cycle models of Informatization Project,
    - Types of plans,
    - Plan documentation methods,
        - Work breakdown structures,

- PERT , CPM and Gantt charts,

- Planning for risk management and control of Informatization Project,
  - Entry and exit criteria,
  - Intermediate checkpoints,
  - Performance prediction and analysis,
  - Prototyping and modeling,
  - Inspections and reviews,
  - Process and process assessment,
  - Development methods,
  - Configuration management,
  - Testing and quality assurance ,
  - capacity planning,
- Estimating—what it takes to do the job,
  - Cost (direct and indirect),
  - Resources , time,
  - Size and complexity of the product,
  - Risk determination,
  - Role of requirements and design in estimating,
- Financial planning — budgeting of Informatization Project,
- Resource allocation,
- Organizational considerations (teams, hierarchies, etc.),
- Technology,
- Human factors and usability,
- Tools and environments,
- Transition of the product to the user.

The third element of the module is the methods of flow control of the Informatization Project which increase the efficiency of e-commerce . This section proposes to examine the following:

- Managing Informatization Project. The objective of process management is to assure that the project is completed on time, within budget, and with high quality,
- Managing the Task,
- Project control,
  - Managing to the plan ,
  - Feedback and reporting mechanisms,
  - Configuration management,
  - Quality control and quality assurance,
  - Managing change,
  - Readjusting goals and milestones,
- Risk management,
- Testing phases,
- Formalized support activities,
- Managing the Team,
  - Team organizations,
  - Recruiting and staffing—picking the right people,
  - Technical leadership,
  - Avoiding obsolescence—training, etc.,

- Managing the Context,
    - Communications skill,
    - Decision theory,
    - Business management,
    - Assessing the organization's ability to perform the process,
    - Probability and statistics.

The fourth element of the module are managing product support, methods of maintenance and evaluating the Informatization Project.

CONCLUSION

Implementation of the educational module "Informatization Project Management" for economic students enables students to learn modern methods of IT Project Managements. Students learn tools to set up Informatization Project for IT projects which are developed together with the European Union, e-commerce, brand promotion firm, advertising products using modern web 2.0. Students study and use in practice the methods of IT Project Management with the use of modern software, cloud sharing and computing on the Internet.

As a result of the module "Informatization Project Management", students will be able to set up IT project and manage for innovative IT projects of EU or own e-business , manage investments and optimize profitability created enterprise .

REFERENCES

1. Joseph Phillips. IT Project Management: On Track from Start to Finish, Third Edition — NY.:McGraw-Hill, 2010. — 640p.

2. Pankaj Jalote. Software Project Management in Practice,Addison-Wesley Professional, 2002 —262p.

3. Kathy Schwalbe. Information Technology Project Management, Course Technologies, Boston, 2010 — 500p.

E-LEARNING FOREIGN LANGUAGES: CHALLENGES AND PERSPECTIVES

Iryna Zuyenok

Possibilities of integration ICT and e-learning tools in learning foreign languages, in particular English, are analysed from different perspectives: students', teachers',and e-moderator's. The main challenges grounded in various factors, including students' needs are described in detail. Recommendations are given about what modern e-learning tools and software can find their implication for EFL courses.

INTRODUCTION

The beginning of the new millennium is characterized by the processes of globalisation and economic integration world wide. The idea of creating knowledge-based society is reflected in the paradigm shift in the education model, where lifelong learning is seen as continuing professional and social development using lifelong learning competences developed by the university undergraduates and postgraduates that add the value to their professionalism at the labour market.

Competences or so-called literacy, including digital literacy, are considered to be the pillars of knowledge building and skills development. According to Block and Cameron, 'communication skills' and the new literacies caused by new technologies as well as competence in one or more second foreign language(s) belong to valuable 'linguistic capital', if to use Pierre Bourdeu's (1991) term [1; 5]. The idea that communicative language competence in at least one of foreign languages is a benefit, which provides university graduates with an additional value, requires qualitative teaching and thorough choice of methods and approaches to be used when teaching EFL at the university level.

Today one can hardly imagine their lives without ICT that has made a great impact on different areas of human life, including education. E-learning defined by Dereck Stockley as the delivery of a learning, training or education program by electronic means that involves the use of a computer or electronic device, including mobile phones, in some way to provide educational and learning or training material [4] "posses new demands on educational institutions, teachers and students. Educational institutions should be equipped with the technical infrastructure and software and co-operate between themselves in order to create synergies". In accordance with [3], teachers should be aware and know how to apply new electronic means of teaching and communicating with their students.

The aim of this paper is to raise the awareness of university teachers what e-learning tools and technologies can find their implication for teaching EFL at the university courses and how they can be integrated into different language courses.

The possibilities and challenges of introducing e-learning tools and ICT for learning English are analysed, using the results of the research made in the National Mining University (Ukraine) and foreign universities surveys published in various online sources in free access. The results of action research, being done while e-moderating online courses both for English teachers and EFL students on Moodle as well as the own experience of online learning using various Global products will be referred to in this article.

E-LEARNING TOOLS APPROPRIATE FOR FOREIGN LANGUAGE LEARNING: TEACHERS' PERSPECTIVE

Teacher's beliefs in how foreign languages are learnt play the essential role in choosing the approach, methods, techniques and tools to be used through EFL course. There is a variety of modern educational theories shared by Ukrainian EFL teachers to this or that extent and applied in their teaching practice: behaviorist theory (Skinner, Pavlov, Thorndike, J. Watson et al.), cognitive theory (Jean Pigeat, Robert Gagne, Lev Vygotsky), constructive theory (John Dewey, Jerome Bruner, Lev Vygotsky), motivational and humanist theory, transformative learning theory (Taylor: 2008), theories of experiential learning, social and collaborative learning, action learning, multiple intelligences etc.

However, no matter what the beliefs in ICT use in ELT are, sooner or later the effects of ICT developments will be reflected in the new form of culture which is different from face-to-face communication, though introducing new technologies and media have been known since TV and radio broadcasting being used in teaching EFL. In 1991 Moore noted that the interaction of the individual or group is determined by the educational philosophy in distance learning [7; 28], that is why it is necessary to explore e-learning tools which are within teacher's beliefs and find the way how to apply them to foster the process of teaching and learning languages [7].

James Thomas in his *Foundations of Information and Communication Technology in English Language Teaching* [10] defines information and communication technology (ICT) as computing and communications facilities and features that support teaching, learning and a range of activities in education (such as administration). He stresses that the focus is on the subject being taught or studied or the organisation being administered, rather than developing students' skills with and knowledge of the technologies themselves. Mustafa Koc supports this idea and argues that "the integration of technology in education means using it as a tool to teach subject matter, and to

promote problem-solving and higher-order thinking skills". He proposes to use the computer where it is the best medium to support the learning goal [8; 4].

The understanding of ICT as a medium, not a method, to be integrated in teaching within the conceptual framework of a teacher clarifies that a variety of methods, approaches rooted in the teacher's assumptions and beliefs may be implemented in this medium.

For example, from the perspective of language teaching per se, Thomas focuses on understanding of three core areas:

1. language itself and its linguistic foundations;
2. second language acquisition and understanding of how language is acquired, especially as a second, non-native language;
3. an awareness of the pedagogical principals relevant to the field, i.e., what procedures, techniques and approaches work with which types of students and why [10].

Therefore, the pedagogical skills remains the same within the conceptual framework of a teacher, but organisational and management skills (facilitating, observing and evaluating etc.) need to be tuned to the media, using technical skills specific for this or that software and/or application.

On the way of integrating ICT in EFL teaching/learning process there is a number of challenges, where understanding of virtual learning environment (VLE) as a new form of culture that differs greatly from face-to-face learning environment is considered to be the most crucial one. On the contrary with real life communication, where learners and teacher interact face-to-face, in VLE students and teachers interact with e-resources provided by a teacher and software of the site in addition to intrapersonal interaction mentioned.

The other problem is being at a distance and sometimes absence of body-language, mimes, eye-contact etc., which contribute much to the success of face-to-face communication, is a corner stone for EFL teachers. According to Garrison & Anderson (2003), the key challenge to e-learning as "learning and teaching facilitated online through network technologies" [5] is to encourage participation of students and their interaction with peers and teacher, while being at a distance. It can be done by building non-threatening, friendly, supportive and collaborative VLE, where the privacy of a learner is provided, thus contributing to building a trust to the site which is used for learning. Here online communication skills both of teachers and students can contribute much to the nature of VLE they are creating.

Based on the experience of online teaching and learning, from our perspective, e-learning or online learning can find its implications at the EFL university courses:

- as a part of classroom activities organised and controlled by the teacher (also known as *blended learning*);
- for *self-study* controlled by the teacher, who plays the role of e-moderator and control all the activities done by students, using e-tools of the Moodle/site, including statistics and information given in Grades and Activity reports on logs;
- for individual self-study and *autonomous learning*, using the Internet resources and the sites, where grades are put automatically by the machine without teacher's participation;
- for *testing* language proficiency of students, using Exercises and Quizzes designed by the teacher/administrator;
- for further *professional development* both of teachers and students, using various online learning sites [11; 159].

Being described as cognitive or mind tools by Lajoie & Derry (1993) [9; 32] and Jonassen (2000) [2; 11] to be used for communication, nowadays the number of e-learning tools and technologies have been developed. They comprise various forms of electronically supported learning and teaching activities, where the specific media is information and communication systems. The most known and used ones both by teachers and students are ranked below in accordance with their frequency of use (from the most often to very rare):

1. the Internet,
2. web/sites(s),
3. multimedia,

4. youtube,
5. blogs,
6. Newsletters,
7. forums,
8. webquests,
9. wiki,
10. MindMeister,
11. SlideShare,
12. electronic portfolios,
13. voki,
14. prezzi etc.

All of them can be used by teachers in accordance with the purposes of learning and IT capabilities. That is why being aware of these innovative technologies, ICT in particular, the university teachers are working now on e-courses design. So, they are interested to what extent there is a need and readiness of students to use ICT for their learning English.

For this purpose two years ago the survey questionnaire was developed and spread among the students learning English in the National Mining University at different degree levels. The questionnaire was focused on the frequency of ICT use in English classroom and what ICT can be used at English classes for. Students were proposed to choose the activities integrating ICT to EFL teaching/learning from 19 options and/or add anything as Others. To get more data interviews structured by teacher and students were used both for formal and informal interviews. The results of questioning nearly 50 students representing different specialism areas trained in the university will be described below.

ICT IN ELT: STUDENTS' PERSPECTIVE

As teachers have their own values and beliefs in teaching and learning EFL, students have their own beliefs in learning foreign language(s) resulted from their own learning and life experience. That is why before introducing crucial changes in teaching/learning it is very important to discover to what extent the teachers' beliefs in use ICT and e-learning tools are shared by their students.

That is why the first-year students specialized in Computer Science & IT were involved in the research. They were proposed to do a project work on "IT in Students' Life" and present the result of their group-work in English both in written and in oral, using Power Point. Within the project structured interview was developed by students, which involves the following questions aimed at discovering students' wants and needs in IT use in their university studies:

- Would you like to use IT at lectures?
- Would you like to use IT for homework?
- Where ICT can be used at your university study?
- Do you use ICT for socializing? If yes, what social networks do you commonly use for communication?

Nearly 30 students of IT Department were interviewed by their peers. The results of this project work were presented at the university students' conference. They demonstrated that the majority of students would like IT to be used at lectures and university classes mostly in the form of Power Point presentations with short video incorporated in or accompanied it. Demo videos with samples of the experiments to be done in the lab would be appropriate at this level of students' study.

Students would like to take tests online. The students are ready and willing to do laboratory works using ICT as well as to use ICT for their homework, though the percentage of those who would like to use IT for homework is a little bit lower than those who would like to use ICT under university teacher guidance and supervision. This can be explained by the fact that the research was done by the first-year students, newcomers to the university, whose level of autonomy is not so high due to their age and the lifelong learning competences developed.

The results of students' research are very close to the EFL university teacher survey that was made in 2010 - 2011, using the questionnaire developed and described above. The survey demonstrates that today EFL university teachers use ICT in their English classroom at least once a week (15 % of respondents). The majority of students point out that IT is used in classes at least once a module, i.e. once per 1.5 months. Some of the students chose 'do not know' that can be interpreted that there is no clear understanding yet within the students what ICT is as practice shows that all of them use their mobile phones for communication, study. They often use online and mobile dictionaries, video, audio etc. materials due to the access to the Internet, copy materials to be learnt etc.

The results of questioning students on what ICT can be used at English classes for are given below (see. Fig. 1). According to the results of the survey, university students are highly interested in getting information to be used for their study and research (86% of respondents – see issue 2), using the Internet and various online resources. The majority of students both of Economics and Engineering specialism areas questioned have agreed on this. Moreover, 72% of respondents highly appreciate access to information via the Internet.

One third of students (33% of respondents) expressed their desire to participate in the International projects online as well as to make presentations online, i.e. to participate in the international events, while being at a distance. These statistics data demonstrate that use of the Internet for study and the research is very popular and useful for both teachers and students that prove the ranking of ICT use made above.

The results of questioning students as to their further study and learning are encouraging: 47% of students and 30% of respondents express their desire to use ICT for e-learning and distance learning respectively. The same percentage (47% of respondents) is demonstrated for testing and taking exams by the machine. This proves the fact that students are interested in getting objective, reliable and valid results of their learning outcomes.

Making presentations following the model of the university teachers, who use them at their lectures and/or classes, is of great demand among the students (61% of respondents) that demonstrates that university teachers are aware of the needs of their students and are on the right way, integrating this ICT tool to their teaching.

Students are interested in the information exchange, making summaries and writing business correspondence and e-mailing (51.4 %; 52.7% and 55.5 % respectively). This can be explained by the integration processes students are aware of as well as wide spread of e-communication (36% of students would like to use it and 27% of respondents are planning to make friends, i.e. to have e-friends) due to social networks used by students for communicating in their native language(s).

47% of students are interested in preparing various visuals using ICT, especially video clips, movies etc. that correlates to the data obtained by the first-year students, who discovered the fact that students are greatly interested in video when giving or making presentations.

Ultimately, the results of the research demonstrate that students are ready and need integrating ICT in education and in teaching EFL in particular.

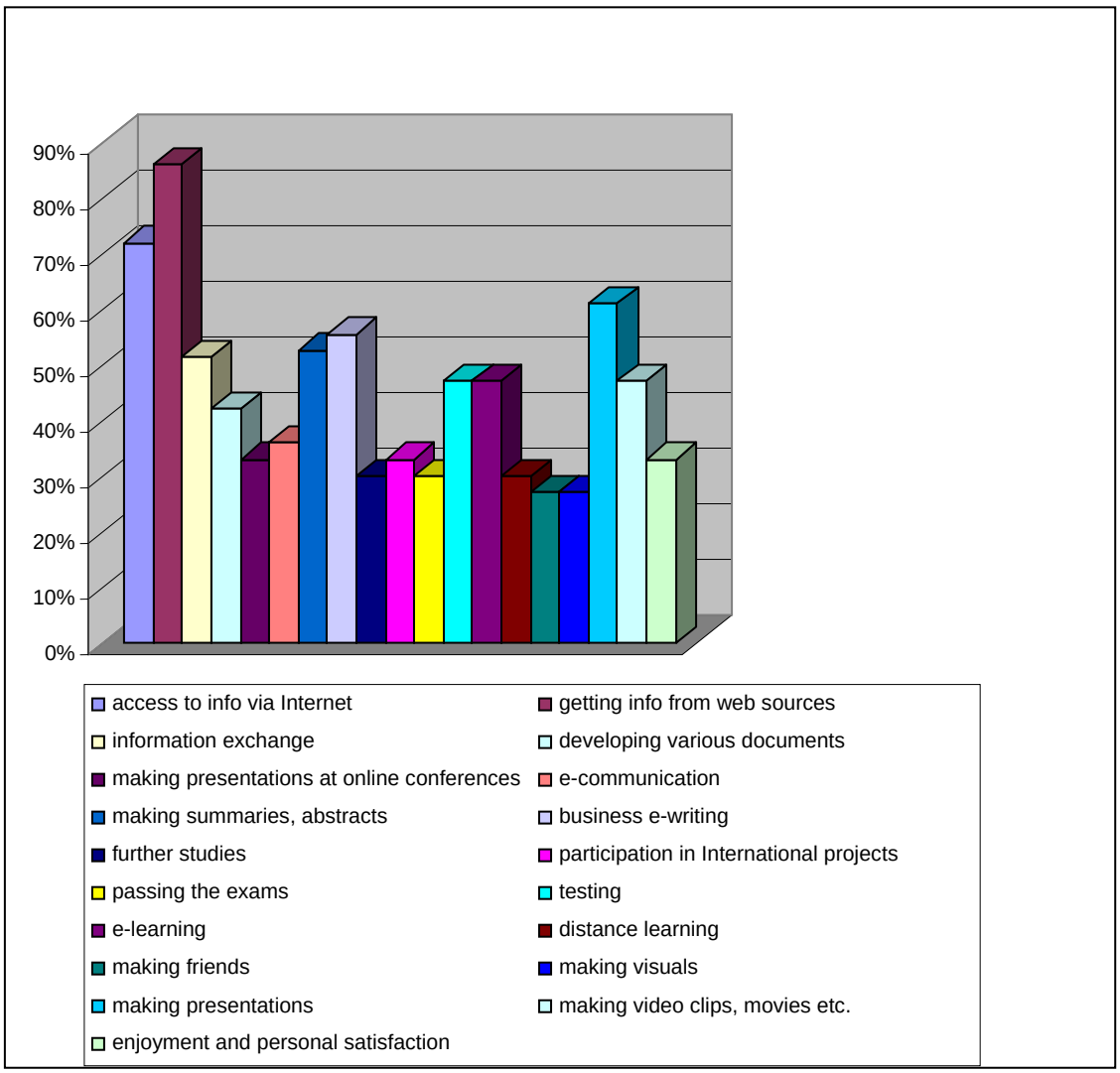


Fig. 1 ICT in the university English classroom: Students' Perspective. (The results of the in-house survey done at the foreign languages department of the National Mining University in 2011).

IMPLICATIONS OF E-LEARNING TOOLS AT EFL UNIVERSITY COURSES

To respond to the needs of nowadays EFL university teachers are introducing changes in their teaching by integrating ICT and e-tools for EFL learning step by step. Based on students' needs and teaching experience some considerations on what e-learning tools can be implied to English classroom and how are given below.

To develop communication skills and communicative language competence both general and professionally-oriented, not being face-to-face, it is appropriate to teach how to use the *internet's communication skills* such as e-mailing, e-messaging (writing and reading language skills), *skype*, including web conferencing (speaking and listening language skills), *keypals* as the e-version of pen-pals (socializing in writing).

For those who are practicing collaborative approach based on social constructivism theory, "when - a social group constructs things for one another, collaboratively creating a small culture of shared artifacts with shared meanings" [10] it would be appropriate to use forums, wikis for *asynchronous communication* and chat rooms or skype for *synchronous communication* or *tandem learning*, the website established by the Council of Europe, which provides people with an opportunity to find someone who is a native speaker of the language they want to learn and who

wants to learn the other language. Its database puts people in touch with each other and then it is up to the pair to work out how they are going to make it work – some advice is given.

Moodle of different versions is the most popular platform for distance learning among *Learning Management Systems* (LMS). It is widely used in foreign language learning, teacher training and professional development as it is grounded in educational philosophy of constructivism. There are the majority of e-learning tools for collaboration and constructing new knowledge and developing communication skills: postings via *Messages*, *Forums*, *Comments*, collaboration and cooperation using *wikis* and *Forums*, *Comments*, self-assessment by taking *Quizzes*, doing *Exercises* and self-evaluation using *Blogs*/(Reflective) *Journals*, *Grade*, etc.

Any EFL teacher can choose e-tools from the variety in use now. The only barrier can be their ability, readiness and openness to change their teaching with the use of new media.

To develop culture of e-learning and to provide secure and friendly VLE it is very important to start with developing Netiquette, rules to be used while e-learning, taking into consideration both students' and teachers' perspectives, where special attention should be paid to plagiarism.

Although the university teachers have partially integrated some e-tools and technologies in their teaching EFL that is proved by the research results, but they are used mostly for students' self-study: Internet search, making Power Point presentations, e-writing, forming learning groups to be used for socializing and providing a channel of distance communication between students and a teacher etc., from the other perspective, there is a need to encourage and motivate students to use ICT and e-learning tools for independent learning foreign languages that contribute to their future career and lifelong learning.

CONCLUSION

As the research demonstrates, learning foreign languages needs much time and face-to-face communication, though some e-learning tools can find their implication for language courses.

Lack of control from the teacher's side when learning online demands high level of students' autonomy and e-learning skills to be used for autonomous learning.

E-learning skills can be developed at face-to-face EFL courses by introducing *blended learning.* Demonstrating in practice ICT in use and promoting experiential learning EFL teachers can show the majority of e-learning capabilities for students that will contribute to the further continuing professional development of the university graduates.

REFERENCES

1. Block, D.& Deborah Cameron (2002) *Globalisation and Language Teaching*. Routeledge.
2. Carr, C. S., & D. H. Jonassen, (2000). Mindtools: Affording multiple knowledge representations for learning. In S.P. Lajoie (Ed.), *Computers as cognitive tools*, Volume 2: No more walls. (165-195). Mahwah, NJ: Lawrence Erlbaum Associates. Retrieved from http://web.missouri.edu/jonassend/Mindtoolschapter.pdf
3. Council of Europe – e-learning. Recommendation 1836 (2008) *Realising the full potential of e-learning for educational and training* [online] Accessed at ALISON.com. Accessed 09 May 2010.
4. Dereck Stockley (2003) [online] Available at: http://dereckstockley.com.ua/e-learning-definition. html.
5. Garrison, D.R. & Terry Anderson (2003) *E-learning in the 21st century: A framework for research and practice.* London: Routledge/Falmer*:* - 167 p.
6. Geary, D. (2012) e-Learning in a Foreign Language. *e-Learn MAGAZINE Education and Technology in Perspective*. June 2012. Available online at: http://elearnmag.acm.org/best-practices-tips.cfm. Accessed 21 Dec. 2012.

7. Huang, Hsiu-Mei (2002) Toward constructivism for adult learners in online learning environment in *British Journal of Educational Technology* Vol. 33 No 1, 2002. USA: Balckwell Publisher. – pp. 27 – 37.

8. Koc, M. (2005) Implications of Learning Theories for Effective Technology Integration and Pre-service Teacher Training: A Critical Literature Review. *Journal of TURKISH SCIENCE EDUCATION*. Vol. 2, Issue 1, May 2005. Available online at: http://www.tused.org. Accessed 09 Jan.2013.

9. Lajoie, S.P. & S.J. Derry (1993) *Computers as cognitive tools.* Hillsdale, NJ: Lawrence Erlbaum Associates.

10. Thomas, J. (2000) *Foundations of Information and Communication Technology in English Language Teaching* [online] Available at SlideShare.

11. Zuyenok, I. (2011) Challenges of E-learning and EFL Online Teaching. *Proceedings of the Conference "Проблеми і перспективи інноваційного розвитку економіки України.* Збірка матеріалів науково-практичній конференції, м. Дніпропетровськ, ДВНЗ «НГУ», 2 - 4 червня 2011 р." – Dnipropetrovsk: State Higher Educational Institution "National Mining University".

Наукове видання

Єдина Європа:
Погляд у майбутнє

Монографія

(Англійською мовою)

За редакцією доктора економічних наук,
академіка НАН України О.І. Амоші

Редактори:
О.Ю. Чуріканова, О.Д. Швець

Підп. до друку 25.03.2013. Формат 30х42/2.
Папір офсет. Ризографія. Ум. друк. арк. 15,2.
Обл.-вид. арк. 15,2. Тираж 300 пр. Зам. №

Підготовлено до друку та видрукувано
у Державному ВНЗ «Національний гірничий університет».
Свідоцтво до внесення до Державного реєстру ДК № 1842 від 11.06.2004.

49005, м. Дніпропетровськ, просп. К. Маркса, 19.