STRUCTURAL CHANGES IN THE WORLD SOCIAL PRODUCTION UNDER CONDITIONS OF THE GLOBAL TRANSFORMATION

Liudmila Didyk
Irina Lisovenkova

The article considers interdependency between two important economic processes at the present stage which are foreign investments and structural shifts in the economy. These processes have been acquiring new trends and attributes in recent years. The foreign investments are gaining in greater importance in the economic development and the structural shifts are becoming more precisely directed and intensive. Due to the dynamics intensification and nature alteration of these processes at the present stage, the research of the mentioned phenomena in the world economy is gaining in particular topicality.

Introduction

At the beginning of the 21st century the basic tendency of the world economy involves accelerated globalization conditioned by the international capital migration, the use of work distribution, and more profound specialization of countries. The reinforcement of the world interdependency and integrity becomes apparent in the process of production internationalization when certain part of every country's production, consumption, and income is created due to the international economic cooperation with other countries. Under these conditions it is becoming particularly urgent to study the correlation between the onflow of the direct foreign investment into the economy and the structural shifts in it which are conditioned by the rapid growth and development of transnational companies and the strengthening of the globalization process within the world economic space.

The essence of the issue is in the necessity to increase the balance and congruous combination of the economy sectors as the integral whole at the present stage. The necessity of the trade balance is conditioned by the current development dynamics and the formation of the post industrial society. The developed countries are of primary importance while forming the post industrial society. This fact determines the influence of their structural trade balance model on other countries which have to follow the requirements and tendencies set by industrially advanced countries with the market economy in order not to be outsiders in the investment resource market.

In recent years a lot of consideration has been given to the research of the foreign investment process in the context of the evolution of the world economy space structure.

Two development trends are effective in the international economic cooperation. They are globalization and regionalization. These are the kinds of trends which make up the basis of the world integration process. The global transformation of all the world countries into a new quality state, a new type of the third millennium civilization is being actualized.

1. The theoretical aspects of the structural shift estimation under conditions of the global transformation

In recent decades the world economic system has undergone global changes which lead to the essential shifts in the mechanisms of the international economy functioning and set taking a different look at the stable world economy development strategies in general and its individual subjects, in particular. The principal changes in the world economy at the present stage concern the following aspects:

- the development of the processes of globalization, transnationalization, and regionalization;
- the intensification of interdependency of the countries;
- the alteration of the role of a state;
- the dynamical transformation of the economy structure.

One of the constituents of the world economy development process is the process of structural shifts which has been dynamically developing in two to three recent decades and has involved almost all the world economy entities. The world economy transnationalization has accelerated these processes and made the structural shifts an important survival factor in the global competitive struggle.

In the broad sense, the economy structure can be viewed from different perspectives. Thus, for example, the economy structure can be considered from the point of view of production, distribution, exchange, consumption of a created product, on the one hand, or from the point of view of enterprises, forms of ownership, industries, regions, and other economy elements, on the other hand. The economy structure shifts make up a complicated system of changes of interconnected elements and rates which occur under the influence of the state policy, the country's economic system, the available technological basis, the degree of social and economic development, in accordance with social needs, available resources and achieved work efficiency level.

Let us consider the definition of the structural shifts suggested by the UN in 1984. It states: "The structural shifts are defined as alterations in part of various economy sectors from the point of view of conventionally net production and employment".

Rather a precise definition of the structural shifts has been given by the European Economic Committee. In the Economic review by the EEC, the structural changes are considered as follows:

- shifts in the constituent structure (production, employment, and export);
- shifts in the mutual correlation of variables, particularly in interconnection between the influx of foreign investments and production, employment, and export.

In our point of view, this definition characterizes the structural shift definition in the most precise way representing the most important and interesting elements of these processes at the present stage.

The meaning of the structural shifts is the correspondence of the changes in the structure of economic needs to the changes in the structure of the production resource disposition (production factors) which are expressed in the dynamics of certain quantitative indicators, such as part, weight, and rate which characterize this disposition.

The meaning of the structural shifts in the economy is expressed in its functions:

- the structural shifts assist the realization of the law of increasing needs which is supplemented by the law of their internationalization at the present stage;
- one of the primary functions of the structural shifts is the distribution and redistribution of resources (the capital, work force etc.) among various spheres of economy;
- the structural shifts in the economy fulfil the function of reconciling the consumption structure, which reflects changes in the system of increasing needs, and the production structure, which represents the structure of disposition and distribution of scarce resources (production factors) among various economy sectors;
- the structural shifts in the economy form the basic natural substantial and cost reproduction;
- the structural shifts represent the introduction of the achievements of scientific and technological progress into the economy, and actualise supplanting and substitution of old technologies and branches of production with the new ones;
- due to their duality (the simultaneous availabilities of the process and result characteristics) the structural economic shifts determine the trends of the economic development of the society and the ways of improving the whole system of economic relations.

A number of certain reasons for the structural economic shifts can be pointed out. [1].

Firstly, this is the development of the social needs system. Changes within this system, emergence of new needs and disappearance of others, arouse the necessity of changes in the consumption structure and, consequently, in the production structure.

Secondly, this is objective development of the production structure which is determined by changes in engineering and technologies where scientific and technological progress (STP) is of primary importance. This allows certain industries to provide a higher rate of profit than others. This is a natural process to distribute production factors (the capital and workforce) among various branches and economy sectors in such a way that STP-oriented industries gain more opportunities to develop and increase a share in the world economy. This presents the connection between the structural economic shifts and cyclic processes of the world economy development.

Work distribution and its further specialization make another reason for the structural economic shifts.

The following factors have no less influence on the structural shifts. These include the state's economic structural policy and economic principles of law which exist in a certain country within the given period, as well as ownership relations and modes of production. Up to a certain degree, the structural policy is the basis for the structural shifts.

However, the scientific literature puts forward an idea that the structural shifts occur mostly not at the state level but at that of markets, companies, and corporations. Various processes within corporations lay down the foundations of the structural policy. These processes include mergers and takeovers, production diversification, introduction of information technologies which have been rapidly developed in the present-day world. In our point of view, these processes are interconnected and influence one another.

The structural shifts can be classified according to different features, and this fact does not only indicate all their diversity, but also allows considering a certain structural shift from different sides including space disposition, time extent, and scope of economy elements.

The structural economic shifts represent rather a contradictory phenomenon. The basic contradiction of the structural shifts lies in uneven dynamics of the development of individual elements of the economy structure. Moreover, at the present stage contradictions between external and internal structural shifts are particularly pronounced. These are contradictions between the global shifts in the world economy structure and the local structural shifts within the national economy of a certain country or region. The research of the given contradiction is becoming particularly topical at the present stage of internationalization and globalization of the economy life.

It is necessary to identify the instruments to use reasonably to measure, estimate and analyze the structural shifts. We can measure the structural economic shifts only in relative indices, parts and percentage as far as structure changes are relative to something (other industries, regions, etc.). Any structural changes can be measured by considering the dynamics of change of the specific weight and part of a certain structural rate either in time or relative to an analogous or global rate.

The basic coefficient in our research is a structural change coefficient. This coefficient is defined as multiple between relative indices of structural units in basic and present periods:

$$K = C1 / C0 \qquad (1)$$

in which, K is the structural change coefficient, C0 is the index of the basic period, and C1 is the index of the rated period.

On basis of the structural change coefficient we calculate the coefficient of structural shift intensity in a certain period the meaning of which is to define the percentage of alteration of a partial index in a period under calculation concerning the basic period:

$$Ki = (C1 - C0)/C0*100\% \text{ or } Ki = C1*100\%/C0-100\% \qquad (2)$$

in which Ki is the coefficient of structural shift intensity.

On the basis of the indices of structural shift intensity, we can calculate the index of structural shift interaction in the economy.

The interaction index is the quantity which shows the correlation of the structural shift intensity of factor indices, which interact, and result index. The given index can be calculated with the following formula:

$$Kin = Ki/(K1 + K2 + .. + Kn) \qquad (3)$$

in which Kin is the index of the structural shift interaction, Ki is the index of the structural shift intensity of the result index, K1…Kn are indices of the structural shift intensity of the factor indices.

This formula helps to analyze the degree of efficiency of the interaction between the factor and result indices. The factor and result indices can be selected depending on the purpose of the research.

2. The structural changes in the world economy at the present stage

Dynamic advance of the structural shift process provides countries with opportunities to increase the production of material wealth and to improve people's life quality. However, it specifies new requirements of the globalization which arise in countries of the world. These requirements concern competitiveness support, innovative opportunities, and abilities to integrate into the world economic system.

Up to the 1970s, the world economy had experienced the structural shifts mainly relative to certain economic sectors including agriculture, manufacturing industries, and service industries, notably new ratios were formed among major economic sectors. Since the middle of the 1970s the development intensity has increased and the structural shifts have become more appreciable at the intersectoral level.

At the present stage the primary and most general change trends in the world economy branch structure are the following:

- decreasing agriculture share in the world gross produce;
- certain share decrease of the extractive and processing industries;
- increasing share of the service industry.

These trends occurred during the last decades of the 20th century. They are particularly typical for the industrial development of countries with the market economy. Thus, the value added index in the agriculture was annually going 0.2-0.4% down according to the percentage terms of the world GDP. The same index of the manufacturing industry was decreasing more rapidly, by 0.3-0.8% a year, and that of the service industry was going 0.5-0.9% up every year. [2]

The trends observed for decades are rather clear: the direct foreign investment share in the service industry increased significantly (from 40.6% up to 47.5%), it hardly changed in the processing industry (41.1% - 42.2%), and it almost decreased by half in the raw material sector (from 13.0% down to 7.1%). These trends are shown in Figure 1.

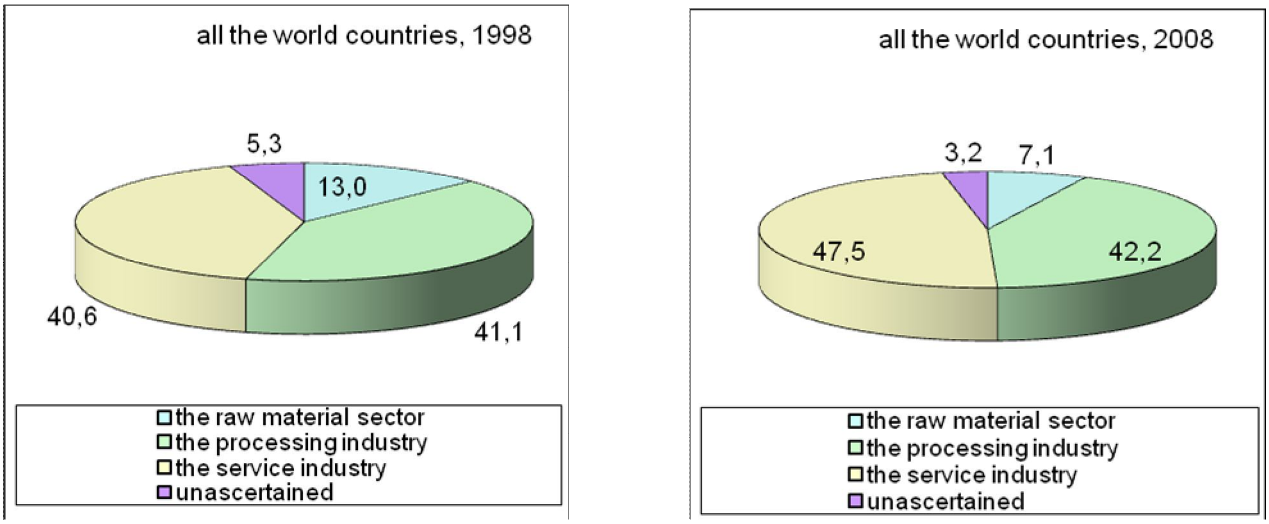


Figure 1. The direct foreign investment structure

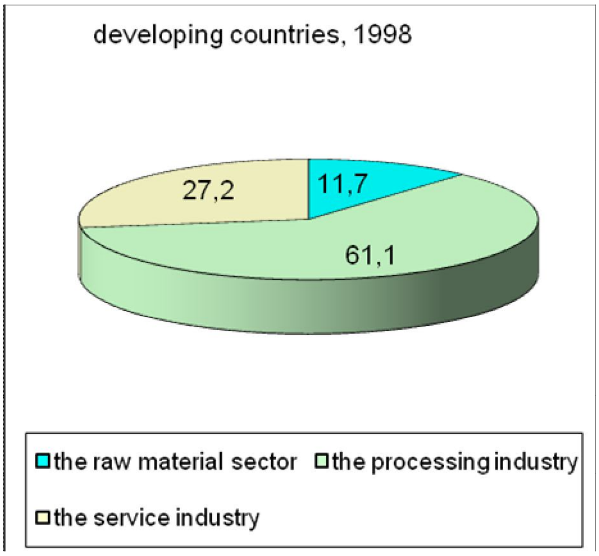
Based on: Report on the world investment, 2009 "The Direct Foreign Investments and the Development Issues". – New-York – Geneva: the UN Conference of the Trade and Development. - [Electronic resource]. – Access mode: www. un. org

Giving particular consideration to the changes at the world level, one can notice that the flow of activity and resources is directed to such branches as metallurgy, chemical industry, and in a larger degree to science intensive branches, service industries, among which the following sectors can be distinguished: financial sphere, medicine, information technology, education, telecommunications, transport, and trade. However, these trends do not represent the actual picture of the structural shifts in certain regions and countries. At the present stage, the gap in the economic development between the developed countries and the developing ones has increased considerably, and this factor cannot but affect the economy structure of these countries. Therefore, the trends and directions of changes in the branch structures of certain countries and regions are also different.

In general terms, the regional structural shifts at the present stage can be described in the following way:

- in the developed countries, where the production sector used to be the key one, the present trends mean gradual decrease of specific weight of the secondary sector (extractive and processing industries) as well as of the primary sector (the agriculture) and increase of the importance of the tertiary sector (the service industry). Moreover, there occur intersectoral changes which contribute to increasing importance of advanced technology branches within each sector;
- the developing countries initially had the tertiary and primary economy sectors more developed, and the secondary sector used to be relatively weak. The present structural shift trends result in the following: firstly, intensification of the secondary sector of the developing countries; secondly, the internal reorientation of the tertiary sector branches; thirdly, the decreasing importance of the primary sector conditioned to a certain extent by the developed countries' decreasing demand for importing resources due to the development and use of new technologies.

At the present stage, the economy structures of the developing countries tend to move towards those of the developed countries. We can observe the decrease of importance of the primary and secondary sectors and the increase of the specific weight of the tertiary sector.



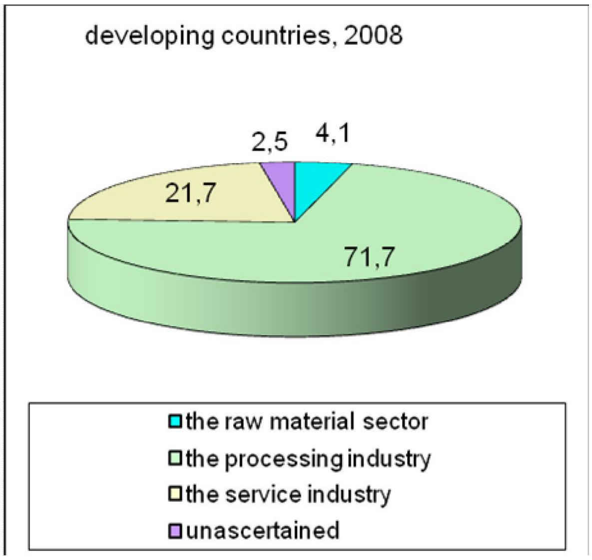


Figure 2. The structural changes in the developing countries

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In a number of developing countries, the structural readjustment occurs under a specific scenario. These countries’ extractive industry is well developed and they are characterized by strongly pronounced agriculture and raw material orientation. The processing industry in these countries is poorly developed, although at the present stage there are certain tendencies towards increasing processing industry share in the gross domestic product (GDP) of these countries.

For the countries with the transitional economy, the following primary objectives of the structural policy can be distinguished:

- the necessity of transition to the market economy;
- approaching the level of economic development of the industrial countries of the West;
- the involvement in the world transnational processes;
- the globalization with regard for the international work distribution.

Let us go into detail on the changes in the world economy structure in three major sectors: agriculture, industry, and service.

The agriculture belongs to the number of the most important world economy industries. The developed countries have achieved the rate of agricultural production which provides a high level of provision consumption per capita, and at that the self-sufficiency of these countries in a number of agricultural products exceeds 100% with considerable part of them being exported. In the recent decade this has resulted in the decrease of the agriculture share in the world GDP. The industrialization of the agriculture has changed it into a capital intensive sphere thereby shifting the emphasis on manufacturing agricultural machinery, plant protection means, use of services provided by financial and lending organizations, introduction of innovations into the agricultural production, as well as development of food and processing industries.

Thus, at the present stage the agriculture on the world scale has lost considerably its past specific weight in the GDP, common employment and the world trading volume. However, it is necessary to mention that the reason for this was not decreasing demand for agricultural production or its unprofitability. This shift can be explained by the facts that the agriculture has become highly-productive; the newest achievements of science and technology have found an application in this sphere; the agricultural sector emerged and has been formed completely that allows increasing scale effects, reducing costs, and raising the efficiency of the agriculture in general.

Alongside with decreasing agriculture production share and employment, developed European countries observe the decrease of the trade turnover of the agricultural production. And at that, the agricultural production export has undergone larger reduction than the import (-29% and -17.2% correspondingly, on average in the countries during two last decades of the past century). [2]

Significant structural shifts have occurred in the industry. The industry is the primary branch of material production in all the world countries.

The structural shifts in the extractive and processing industries are closely connected. The world production growth is accompanied by considerable increase of consumption of most raw materials. Thus, during the period of 1955-2005 under the developed countries' industrial production increasing three and a half times as much, the volume of the average annual consumption of metals grew three times as much, that of mining and chemical raw material increased three and a half times as much, and that of the primary energy sources (oil, gas, coal, uranium) increased 2.6 times as much. More complicated influence on the extractive industry dynamics is exerted by the STP. On the one hand, the STP contributes to emergence and development of new kinds of goods whose production demands extra sources of raw materials and resources; on the other hand, by advancing technologies and technological processes, the STP favours developing new sources of energy, alternate raw materials, thus ambiguously influencing the dynamics of development and consumption of the extractive industry production. Due to the advance development of the newest branches (nuclear, aerospace, and electronic industries) the demand for light and rare metals is increasing. A lot of countries enhanced the consumption of secondary raw material which resulted in considerable reduction of energy and material intensity of the manufacturing which in its turn caused the decreasing demand for the primary raw material.

In the extractive sector, rather a low growth level was typical for ferrous and non-ferrous metal mining; in the processing sector, almost all the branches fell behind mechanical engineering, electronic and telecommunication equipment production, and chemical industry. Moreover, the structural shifts occur within the branches themselves. In the mechanical engineering branch, the development of shipbuilding, machine-tool construction, and movable railway park production is the slowest. The electronic and telecommunication production reached 10% of the world GDP at the end of the 20th century and this allowed aligning these industries with automobile industry and electric power production. In the chemical industry the structural shifts are basically connected with rapid development of the science intensive production and invention as well as producing synthesized fiber, polymer, and pharmaceuticals of the new generation. These are the branches which develop the most rapidly.

During the two last decades of the 20th century, most West European countries experienced constant decrease of the industrial production value added share in the GDP. Let us compare the following: the share reduction rate of the industrial GDP in the general GDP is rather low compared to that of the agriculture (on average in the countries 11.06% and 36.55% correspondingly, i.e. 3.3 times as much). [4]

Most of European developed countries tend to decrease the processing industry share in the industrial sector in whole. (Some exceptions are Belgium, Great Britain, the Netherlands, and Finland, where this rate tends to increase, on average in the countries by 7.75% during the mentioned period). In spite if this, the processing industry share in all West European countries makes up over 3/5 of the industrial sector.

The dynamics of this sector also proves reduction of the industrial production importance in European developed countries. Almost in every West European country this rate tends to decrease.

As regards the developing countries, there are also various trends observed. In Latin American countries, the industrial sector importance decrease is not as distinct as that in the industrial developed countries with the market economy. This can be explained by different levels of the economic development of these countries. However, the GDP share of the processing industry in the GDP of all the industrial branches in most countries of the region tends to decrease. In two last decades the Asian-Pacific region experienced a growing tendency of the industrial production importance in the economy; this is connected with the intense activity of the TNC in the region of the new industrial countries.

The growth of the service industry specific weight in the GDP turned into the primary trend of the structural economic changes in the developed countries in the second half of the 20th century. The operation volume in the service industry exceeded the production volume of the processing industry in these countries. At the end of the 20th century the tertiary sector share made up 62-63% of the GDP, the manufacturing sphere share was 32-31%, and the agriculture share was slightly more than 5%.

At the world level, the tertiary sector growth occurred mostly due to the increase of the science intensive service industries. These industries include consulting services, engineering, marketing, transport, communications, and financial services. The developed countries have experienced rapid development of educational services; this can be explained by increasing importance of education in the world economy.

The service industry advance is also induced by the development of new services which include computing, information technology, logistics, and electronic commerce; they can also be regarded as science intensive services.

European developed countries experience stable growth of the service industry value added share in the GDP. The average rate in the countries made up 24.7% during the period of 1990-2010. [3]

At the end of the 20th century, most developing countries also observed the distinct increase of the tertiary sector value added share in the GDP. Moreover, the growth rate in these countries tended to increase. For example, approximately in half of Latin American countries the service industry growth rate is higher than the average annual growth rate of the general GDP.

In the developing countries, various structural trends in the dynamics of the tertiary sector product trade occur. It is worth mentioning that in these countries the trade turnover growth in a number of commercial services goes on at a much higher rate than in the developed industrial countries. This particularly concerns the new industrial countries of Asia.

3. The main trends of the foreign investment influence on the structural changes in the countries with the transitional economy

At the beginning of the 90s, the foreign capital began active penetration into the countries with the transitional economy influencing a lot of industries and their functions in the economy.

The flow of the direct foreign investments (DFI) is of a strategical importance for the countries with the transitional economies and it is regarded as a transformation catalyst of these countries. It furthers the national economy restructuring, economical growth and development, serves as a guide of technological and production innovations, advances management and administrative experience.

The investment flow increases employment, advances subjects' motivation, contributes to the infrastructure renewal, the national companies' entering the world market without increasing foreign liabilities (Figure 3).

Let us analyze the factors which favour and hamper the foreign investment flow into central and East European countries. We can validly assert that the main way of the foreign DFI flow into central and East European countries was the active privatization process. During the considerable part of the period under analysis, the direct investment growth was conditioned by the TNC participation in privatizing the state assets.

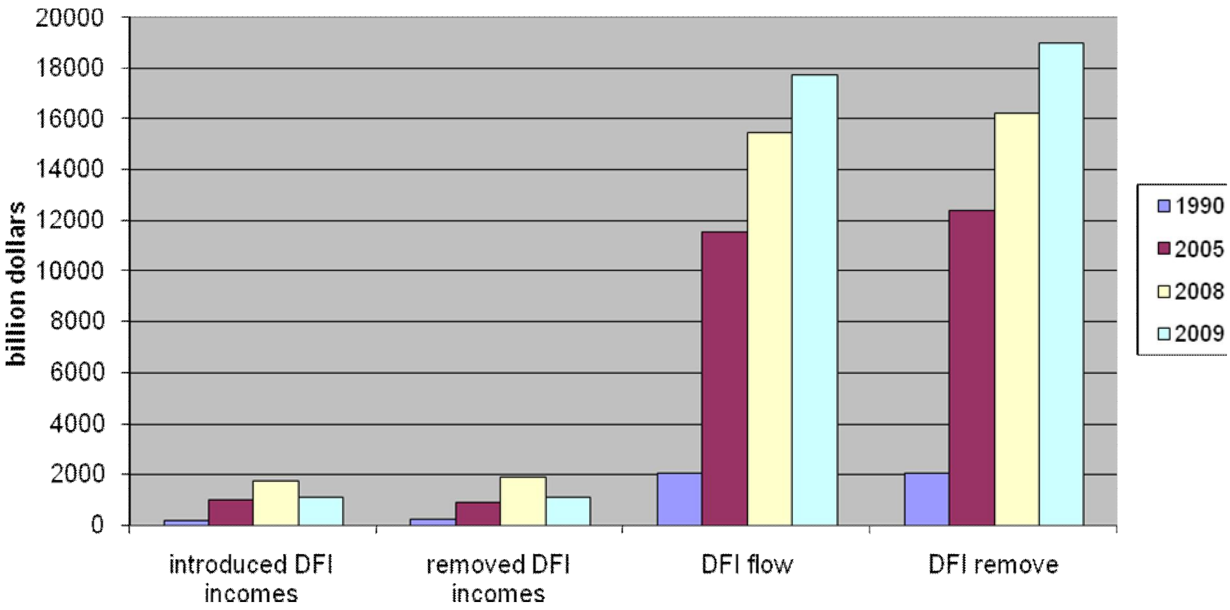

Figure 3. Certain indices of the DFI and international cooperation

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The privatization tendency of the foreign investments reflects the national influence on the DFI mobilization process. Thus, foreign investments are made into the countries, sectors and branches where the ownership changes occur allowing the foreign capital to participate in the privatization. Lacking or inactive privatization is one of the primary reasons for slight DFI flow into some central and East European countries which slowly followed the reforms.

Other factors which can attract foreign investors to central and East European countries are the geographical location close to West European countries, prospective EU membership, the main trade routes crossing central and East European countries, the spacious market (particularly in Poland), relative sufficiency of qualified and inexpensive work force.

It is natural that the DFI is directed to the branches where the factors which are attractive for the DFI, are the basic ones. Thus, for the manufacturing these are the resources used in it; for the service industry they include a degree of the financial market liberalization, and a market capacity degree; for the agriculture these are the land code, available access to the national land for foreign investors.

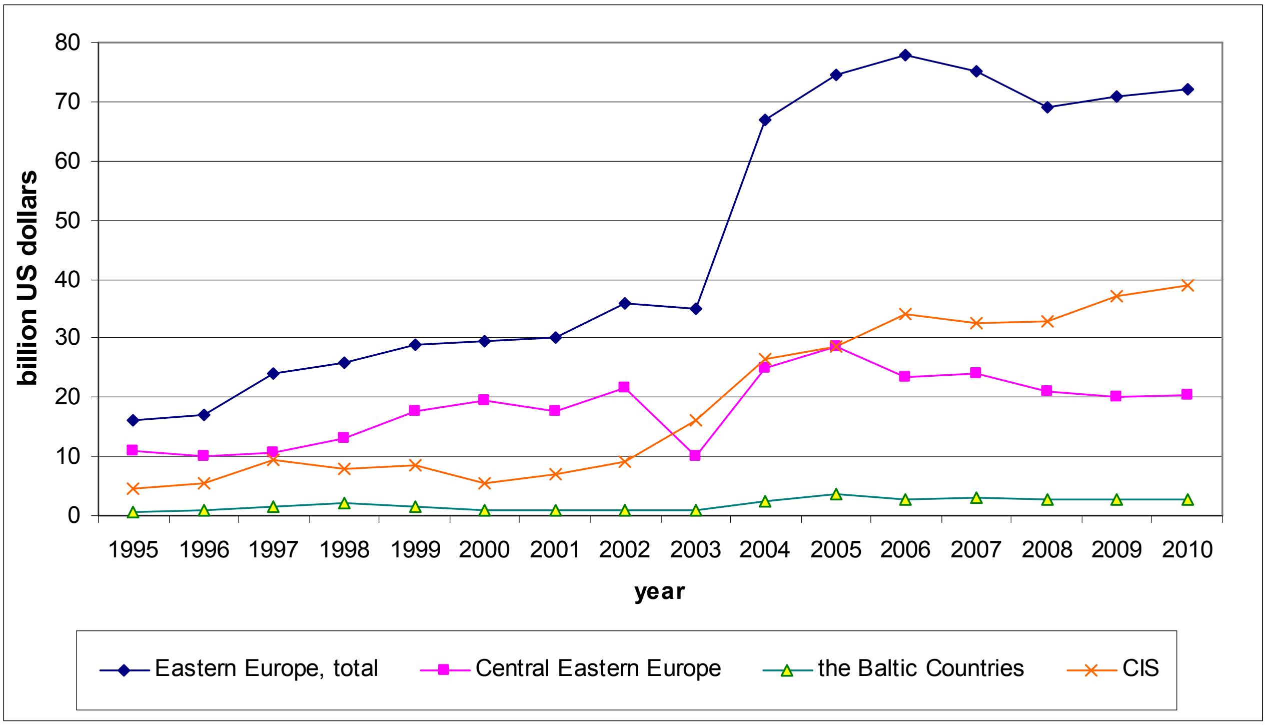

Figure 4. The dynamics of the DFI flow to East European countries

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Such factors as, for example, inflation, national currency stability, and tax legislation do not exert such distinct influence on the DFI flow into certain sectors. Here the regularity is different. In the countries where these factors are primary regarding the attraction of the DFI, the DFI dynamics is observed in the import substituting and export-oriented branches. Such factors as criminality, corruption, and bureaucracy will apparently have equal influence on the DFI into various sectors and branches.

One of the basic factors of the influence on the structural economic shifts in transitional countries is the direct investment of the TNC since the number of recipient branches has increased in the recent decade. Moreover, the flow of the direct investments in central and East European countries have been reoriented from resource-intensive to advanced technology industries.

Let us consider the importance of the DFI in the process of the structural economic shifts in Ukraine.

The stimulation of the foreign investment flow into the economy and its efficient use have been proclaimed as an important constituent of the economic reform realization in Ukraine. The capacity of the inland investment in Ukraine does not provide the stable economy functioning; thus, foreign investors are to be counted on. However, the inland investment capacity and foreign investment capacity are closely connected, and the foreign investors tend to invest the capital into the economy with regular inland investment dynamics.

According to the economists' estimation, the inland investment should make up 19-25% of the GDP. In Ukraine, this rate has not exceeded 11%. Moreover, it should be noted that there is a balanced relation between the country's GDP volume and the volume of the DFI which come into the country. However, the dynamics and rates of Ukraine's GDP were rather deplorable during the last decade. Only recently the situation has turned out for the better (chart 1).

Regarding our analysis, it is important to estimate the scope of the promotion of foreign investment into the country's economy and its structural distribution.

The aggregate DFI into Ukraine's economy tend to increase; by the end of 2009 over 29.5 billion dollars was invested into Ukraine in whole (chart 1).

Chart 1. The dynamics of the volume of the foreign investment into the economy of Ukraine (the end of the year)

year	The number of enterprises which attracted investments	Million dollars	Annual increase, million US dollars
1998	5263	1355,9	-
1999	6534	2053,8	697,9
2000	7066	2781,7	727,9
2001	7362	3247,9	466,2
2002	7794	3865,5	617,6
2003	8168	4406,2	540,7
2004	8690	5339,0	932,8
2005	9442	6794,4	1455,4
2006	10542	8658,9	1864,5
2007	11569	16375,2	7716,3
2008	12853	21186,0	4810,8
2009	15389	29489,4	8303,4

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Chart 2. The direct foreign investment into the economy of Ukraine regarding the economy branches

Economy branch:	2002 p.		2008 p.		2009 p.		2009 % compared to 2002
	Amount thousand US dollars	Structure %	Amount thousand US dollars	Structure %	Amount thousand US dollars	Structure %	
Food industry	775,5	20,1	1274,6	6,0	1564,0	5,3	201,7
Trade	774,0	20,0	2532,6	12,0	3056,	10,4	394,9
Mechanical engineering	347,6	6,4	906,4	11,4	1049,6	3,6	2302,0
Financial activities	248,1	6,	2419,8	11,	4793,9	16,3	1932,2
Ferrous metallurgy	150,1	3,9	1398,3	6,6	1685,6	5,7	1123,0
Transport and communication	231,3	6,0	901,2	4,3	1276,9	4,3	552,1
Construction	12,5	3,2	819,2	3,9	1619,2	5,5	1295,4
Agriculture	78,8	2,0	383,0	1,8	552,7	1,9	701,4

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Conclusions

In the context of the intersectoral structural shifts at the world level, the following can be pointed out: the agriculture share decrease within the world gross product; certain share reduction of the extractive and processing industries; the service industry share increase.

At the present stage, central and East European countries increase their share in gaining the world capital investment. However, their potential in investment attraction and receptivity is not used in full yet.

Ukraine takes an active part in the processes of globalization, transnationalization and international investment distribution. However, in spite of the positive dynamics of the DFI flow into the country, the investment capacity is not sufficient yet to provide the effective restructuring of the economy.

References

1. Ricardo D. The beginning of political economy and tax taxation // The Anthology of economics classics. Moscow, 1993. Past 1. Pages 446.
2. Report on the world investment, 2009 "The Direct Foreign Investments and the Development Issues". – New-York – Geneva: the UN Conference of the Trade and Development. - [Electronic resource]. – Access mode: www. un. org
3. World Investment Report 2010: Investing in a low – carbon economy, New York, Geneva: UN Publications, 2010
4. Electronic resource / Access mode: www. worldbank. org