

# Analysis of Interrelations and Mutual Effect of Economic Growth and Foreign Investments\*

OLEKSII SUBOCHEV \*\*

ABSTRACT: In this article, the author highlights the interrelations between investments and economic growth. The economic and mathematical model of dependence between GDP and investments into capital stock has been built. The balance of investment funds for the economy of Ukraine has been calculated.

KEY WORDS: economic growth, foreign investments, linear regressive model.

## Introduction

Investments are a complex and meaningful notion that integrates various economic processes that influence production, distribution, exchange and consumption, i.e. they are a fundamental base of social economic recreation. There is a direct dependence between the rates of economic growth, availability of investment resources in economy and the part of savings.

Insufficient and low-quality level of savings in Ukraine gives rise to a never-ending circle. Lack of savings gives birth to: → lack of investments → non-conformity of capital assets quality → low rates of production and low quality of products → low profits → lack of savings → irrational proportion in distribution between consumption and savings → national institutional structure of savings distribution.

Theoretical questions regarding the nature of relations between investments and competitiveness and the place of investments in the context of competitive policy of the state, namely with the consideration of market and transformation processes in the economy, have a relatively high degree of scientific development. In this sphere, macro models by J. Keynes, W. Friedman, S. Fisher, Harrod-Domar, R. Solow, Cobb-Douglas etc. can be distinguished, where investment activity is one of the most important macro

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\*\* Oleksii Subochev is Ph.D in Economics, Associated Professor in the International Finance Department of Kyiv National Economic University named after Vadym Hetman

parameters of modeling the economic development. This problem has found wide representation in the works of domestic scientists<sup>1</sup>.

The aim of the article is to highlight the interrelations between investments and economic growth, design of economic and mathematical model of dependence between GDP and investments into capital assets and calculation of balance of investment funds for the economy of Ukraine.

### Interrelations of Investments and Economic Growth

The statistical base of indices for the development of Ukrainian economy confirms this hypothesis. It is clear from the calculations of the dynamics of gross domestic product of Ukraine in 2000–2009 (*table 1*) that the greatest rates of GDP growth were in 2004 – at the level of 12.2%. At the same time, the worst index of GDP dynamics in the period from 2000 until 2009 was noted in 2009 when it dropped by 15.1% compared to the previous year.

*Table 1. Dynamics of Gross Domestic Product (GDP) of Ukraine, 2000–2009 (in actual prices)*

Year	GDP, nominal, million UAH	GDP deflation index, %	GDP, real, million UAH	GDP, % to previous year	GDP growth rate to previous year, %	GDP, % till 1990
2000	170.070	123,1 (1,231)	138.156	105,9	–	43,2
2001	204.190	109,9 (1,099)	185.796	109,2	+ 9,2	47,2
2002	225.810	105,1 (1,051)	214.853	105,2	+ 5,2	49,7
2003	267.344	108,0 (1,080)	247.541	109,6	+ 9,6	54,4
2004	345.113	115,1 (1,151)	299.838	112,1	+ 12,2	61,0
2005	441.452	124,5 (1,245)	354.580	102,7	+ 2,7	62,7
2006	544.153	114,8 (1,148)	474.001	107,3	+ 7,3	67,3
2007	720.731	122,7 (1,227)	587.393	107,9	+ 7,9	72,6
2008	948.056	128,6 (1,286)	737.213	102,3	+ 2,3	74,2
2009	914.720	113,7 (1,137)	804.503	84,9	-15,1	63,0

*Source:* calculated according to the data: Statistical Annual Directory of Ukraine, 2009. – K. State Statistics Committee of Ukraine, 2010

<sup>1</sup> For instance, see *A. Galchynskiy, V. Geyets, V. Semynozhenko*. Ukraine: Science and Innovative Development (K.: 1997); Strategy of economic and social development of Ukraine (2004–2015) «The Way of European Integration», Collective edition by A.S. Galchynskiy, V.M. Geyets etc.; National institute of strategic achievements, Institute of Economic Forecasting. The National Academy of Sciences of Ukraine, Ministry of Economy and European Integration of Ukraine (K.: Information Center of the State Statistics Commission of Ukraine, 2004); Economy of Ukraine: Strategy and Policy of Long-Term Development, Edited by academician of the National Academy of Sciences of Ukraine V.M. Geyets (K.: Institute of Economic Forecasting; Feniks, 2003); Competitiveness of national economy, Edited by Doctor of Economic Sciences B.E. Kvasnyuk (K.: Feniks, 2005). [in Ukrainian]

If we analyze the changes of gross savings in Ukraine in 2000–2009 (*table 2*), then we can see that the highest rate of growth of real gross savings, i.e. with consideration of inflations, was noted in 2004, at the level of 28%. Also this year the share of gross savings in GDP was the highest during the whole period – 31.8%.

After the savings rates dropped, the most rapid decline occurred in 2009 – minus 32% of the rate of growth of real gross savings compared to the previous period – from UAH 153.556 million in 2008 to UAH 133.461 million in 2009, in absolute figures.

*Table 2. Change of Gross Savings in Ukraine,  
2000–2009 (in actual prices)*

Year	Gross savings, nominal (GSn), million UAH	Deflation index, %	Gross savings, real (GSr), million UAH	Share of GSn in GDP(n), %	Growth rate of GSr, % to previous year	GSr / GSn, %
2000	41.896	123,1 (1,231)	34.034	24,6	–	81,2
2001	52.248	109,9 (1,099)	47.541	25,9	+ 13,5	91,0
2002	62.632	105,1 (1,051)	59.593	27,7	+ 14,1	95,1
2003	74.330	108,0 (1,080)	68.824	27,8	+9,9	92,6
2004	109.808	115,1 (1,151)	95.402	31,8	+ 28,3	86,9
2005	113.362	124,5 (1,245)	91.054	25,7	–17,0	80,0
2006	126.980	114,8 (1,148)	110.610	23,3	–2,4	87,1
2007	177.217	122,7 (1,227)	144.431	24,6	+ 13,7	81,5
2008	197.473	128,6 (1,286)	153.556	20,8	–13,4	77,8
2009	151.746	113,7 (1,137)	133.461	16,6	–32,4	87,9

*Source:* calculated according to the data: Statistical Annual Directory of Ukraine, 2009 (K.: State Statistics Committee of Ukraine, 2010).

Finally, the last link of the interrelated system is investments (*Table 3*). The statistical indices of change of investments into the capital assets in 2000–2009 also confirm the same trends that were noted in the previous empirical data.

The greatest growth rate of investments into capital assets was noted in 2004, at the level of 29.0%, the worst index of dynamics occurred in 2009 when it dropped by 43.0% compared to the previous year, from UAH 181.245 million to UAH 132.961 million, including deflation index.

**Table 3. Change of Investments into Capital Assets in 2000-2009 (in actual prices)**

Year	Investments into Capital Assets (CA), nominal million UAH	Deflation index, %	Investments into capital assets (CA), real million UAH	Share of CA in GDP(n), %	Growth rate of CA, % to previous year	CA <sub>r</sub> / CA <sub>n</sub> , %
2000	23.629	123,1 (1,231)	19.195	13,9	—	81,2
2001	32.573	109,9 (1,099)	29.639	15,9	+ 25,4	91,0
2002	37.178	105,1 (1,051)	35.374	16,5	+8,6	95,1
2003	51.011	108,0 (1,080)	47.232	19,1	+27,0	92,6
2004	75.714	115,1 (1,151)	65.781	21,9	+29,0	86,9
2005	93.096	124,5 (1,245)	74.776	21,1	-1,0	80,3
2006	125.254	114,8 (1,148)	109.106	23,0	+17,2	87,1
2007	188.486	122,7 (1,227)	153.615	26,2	+ 22,6	81,5
2008	233.081	128,6 (1,286)	181.245	24,6	-3,8	77,8
2009	151.177	113,7 (1,137)	132.961	16,5	-43,0	87,9

Source: calculated according to the data: Statistical Annual Directory of Ukraine, 2009 (K.: State Statistics Committee of Ukraine, 2010).

### **Economical and Mathematical Model of Mutual Dependence of GDP and Investments**

The empirical data of *Tables 1–3* will enable modeling the dynamics of GDP according to the factors of savings and investments. The base for this is the method of regressive analysis.

Regression means a unilateral stochastic dependence of one random variable on the other or several other random variables. Thus, regression establishes conformity between random variables. Every value of  $x$  conforms to the set of values of  $y$  and vice versa, every value of  $y$  conforms to the set of values of  $x$ . Unilateral stochastic dependence is expressed with the help of a function, which unlike the strict mathematical dependence, is called the function of regression or simply regression.

The function of regression formally sets the conformity between variables, although they might not be in relationship of cause and effect. By the number of variables introduced into the regress equation, there are two types of regressions distinguished — simple (even) regression and multiple (multifactor) regressions. By the form of dependence, the models are divided into linear and non-linear regressions.

Statistical indices of investment activity reflecting objective mutual cause and mutual dependence of its individual parts can be in the following types of connection: balancing, component and factor<sup>1</sup>.

Factoring connections can be seen as functional or correlative. Functional connection in economy is rare, almost exceptional, that's why we're interested in the correlative analysis of connections between rates and dynamics of savings, investments into capital assets and rates of GDP in the economy of Ukraine<sup>2</sup>.

In correlative connection, the change of effective feature of  $y$  is stipulated by the effect of factor feature of  $x$  not in whole but only in part, because the set of other factors  $\varepsilon$  can also cause effects:

$$y = \psi(x) + \varepsilon \quad (1)$$

In correlative connection, various values of effective feature are possible for the same value of factor feature. This can be explained by the availability of other factors that can be even in composition, direction and level of effect upon separate (individual) units of statistical aggregate. Thus, the characteristic feature of correlative connections is that they have manifestation not just in separate cases but in massive phenomena.

After the linear regressive model is built, it is necessary to assess the density of connection between effective and factor variables. To do this, one needs to calculate the coefficient of correlation  $R$  that characterizes the degree of density of linear dependence between random variables  $(x, y)$ .

Positive value of correlation coefficient shows the availability of direct connection between variables, and negative value shows reverse connection. If the correlation coefficient tends to  $\pm 1$ , then it shows the availability of strong connection between variables. At the same time, when it tends to zero, the connection between factors becomes weaker.

With the purpose of researching the effect of investments upon the economic growth of the country, let us perform regressive analysis of relations between the rates of investments into the capital assets and GDP rates in the country, as well as the relation between savings and investments into the capital assets. To perform the research, let us assume that the GDP rates are the function from the rates of investments, and the investment rates are affected by the level of savings. In general, these functions have the following form:

$$\begin{aligned} GDP &= f(\text{Investments into capital assets}) \\ \text{Investments into capital assets} &= f(\text{Savings}) \end{aligned} \quad (2)$$

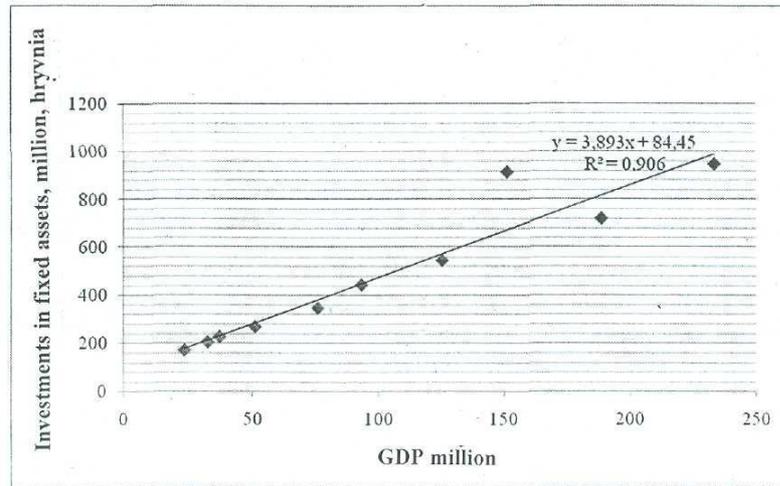
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<sup>1</sup> S. Aivazyan, V. Mkhitarian., *Applied Statistics and Econometrics Basics* (M.: Finance and Statistics, 2003). [in Russian].

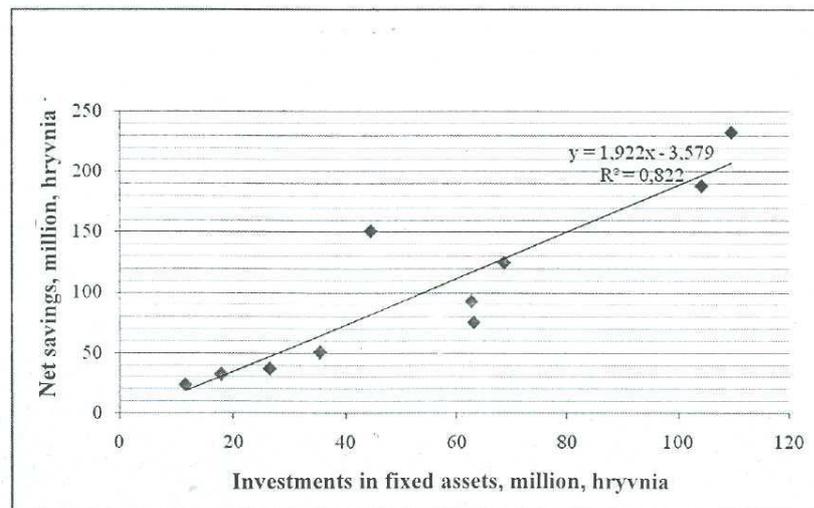
<sup>2</sup> K. Douterne, *Introduction to Econometrics* (M.: Finance and Statistics, 1999).

In the first function, the effective factor ( $y$ ) is the GDP rate (million UAH). The driving factor ( $x$ ) is the rate of investments into the capital assets in the economy of Ukraine (million UAH). In the second function, the effective factor ( $y$ ) is the rate of investments into the capital assets in the economy of Ukraine (million UAH). The driving factor ( $x$ ) is the rate of savings. Because of that, we have two linear one-factor regressions:

$$y = a_0 + a_1x_1; \quad (3)$$



**Fig.1.** Interdependence between GDP and Investments into Capital Assets



**Fig.2.** Interdependence between Investments into Capital Assets and Net Savings

The economical and mathematical models that characterize dependence of GDP rates of the country on the investments into the capital assets and dependence of the rates of investments into the capital assets on the rates of savings have been obtained because of calculations represented in mathematical equations in *table 4*.

**Table 4. Economical and Mathematical Model of Dependence of GDP Rates of the Country on the Rates of Investments into Capital Assets and Net Savings, 2000–09**

Economical and mathematical model	Determination coefficient $R^2$ , Correlation connection coefficient $R$
$y = 3,893 \cdot x + 84,45$	$R^2 = 0.906,$ $R = 0.952$
$y = 1,922 \cdot x - 3,579$	$R^2 = 0.822,$ $R = 0.906$

It should be noted that obtained models are adequate to experimental data. The statistical characteristics of these models are meaningful in conformity with the F-criterion of Fisher, have high value of coefficients  $R^2$  and  $R$ , which enables us to make economic conclusions on the given basis.

The correlation coefficient  $R = 0.9$  proves strong connection between the data calculated by the regression equations and empirical data. The given models prove that there is a direct interconnection between the rate of GDP and the rate of investments. In other words, the increase of investments has a positive effect upon the GDP rates.

According to the performed calculations the results of which are provided below in *Table 5*, the increase of GDP by 8% requires the increase of investments into the capital assets by 56%. In its turn, such rate can be ensured by the increase of net savings by 179%. If the target index of GDP growth is 12%, this will require the increase of investments into the capital assets by 60%, which in its turn can be ensured by the increase of net savings by 186%.

**Table 5. Calculation of Dependence of GDP Rates of the Country on the Rates of Investments Into Capital Assets and Net Savings**

Target GDP	Necessary investments into capital assets	Necessary net savings
GDP = 8%	Investments into CA = +56%	Net savings = +179%
GDP = 12%	Investments into CA = +60%	Net savings = +186,2%

Judging from the above-said, we can conclude that, in the given conditions, rapid economic growth at the expense of financing of only internal savings is not possible. That's why the incoming flow of foreign investments, especially direct investments, is not just desirable but necessary.

### **Balance of Investment Funds for the Economy of Ukraine**

The peculiarity of the modern investment model of development of Ukraine is weak engagement of foreign capital in the economy of Ukraine. The trend of significant lagging in this sphere from other countries of Central and Eastern Europe (*Table 6*) continues. For instance, according to the calculations of the European Bank of Reconstruction and Development, the cumulative index of the rate of direct foreign investments into Ukraine at the beginning of 2010 made USD 1000 per capita, while in Czech Republic it made USD 7.418, in Bulgaria — USD 6.226, Kazakhstan — USD 3.706, Poland — USD 3.155, Romania — USD 2.350.

*Table 6. Rate of Direct Foreign Investments in Ukraine at the Beginning of 2010 per Capita*

Country	Cumulative index
Czech Republic	7.418
Bulgaria	6.226
Kazakhstan	3.706
Poland	3.155
Romania	2.350
Ukraine	1.000

*Source:* European Bank of Reconstruction and Development, <http://www.ebrd.com>

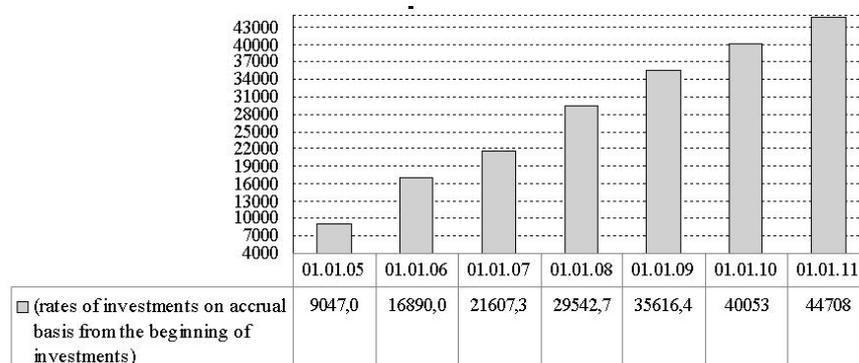
The accumulated amount of direct foreign investments per capita places Ukraine in a complex economic situation. At this level, direct foreign investments are only a small share of the amount needed by Ukraine for restructuring and modernization of economy and for the transition to stable economic growth. Moreover, the privatization

program as one of the potential sources of direct foreign investments has not been able to attract large amounts of investments yet, as the government had hoped.

According to the State Statistics Committee of Ukraine, in 2010 foreign investors invested USD 5 986.0 million of direct investments into Ukraine. The EU countries invested USD 4 605.8 million (76.9% of the total amount), the CIS countries – USD 849.2 million (14.2%), the rest of the world – USD 531.0 million (8.9%). At the same time, the capital of nonresidents reduced by USD 809.7 million. The increase rate of the total amount of foreign capital in the economy of the country, taking into account its reassessment, losses, exchange rate difference etc., made USD 4 655.0 million in 2010.

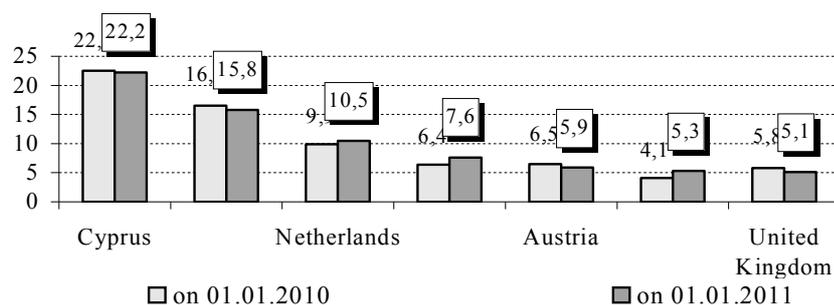
The total amount of direct foreign investments into Ukraine, as of January 1, 2011, made USD 44708.0 million, which is only 11.6% more than the amount of investments as of the beginning of 2010 (figure 3).

Investments were made from 125 countries of the world. The top ten of the main investors that cover almost 82% of the total amount of direct investments consists of the following countries: Cyprus – USD 9 914.6 million, Germany – USD 7 076.9 million, Netherlands – USD 4 707.8 million, Russian Federation – USD 3 402.8 million, Austria – USD 2 658.2 million, France – USD 2 367.1 million, United Kingdom – USD 2 298.8 million, Sweden – USD 1 729.9 million, British Virgin Islands – USD 1 460.8 million and United States of America – USD 1 192.4 million (figure 4).



**Fig.3.** Direct Foreign Investments into Ukraine<sup>1</sup>

<sup>1</sup> Investments of foreign economic activity in 2010, Express edition of the State Statistics Committee



**Fig.4.** Distribution of Direct Investments into Ukraine by Main Investing Countries (in % to Total Amount)

It is expedient to pay attention to the following aspect. Among the main investor countries there are offshore zones: Cyprus, British Virgin Islands (Jersey, Guernsey and Maine islands), partially the Netherlands and Austria. The statistics captures a certain trend – the largest investors for Ukraine are the offshore zones. Funds from domestic shadow entrepreneurs come from these countries but they are already protected by the status of foreign investments.

Such situation proves that, despite all efforts of all governments, the investment climate does not get any better yet. If the domestic business treats the opportunities of investing in the territory of the country on behalf of resident companies with distrust and withdraws money to offshore jurisdictions, so what can be said about the foreign investors for whom the domestic business environment is absolutely not common or comfortable?

On the basis of above-given statistical data and also with the help of linear and regressive model of interrelations of GDP rates of the country with certain rates of investments into capital assets and net savings, built in the previous clause of this section, let us calculate the balance of investment funds including accruals of foreign investments for the respective years (*table 7*).

According to the calculations, at target annual growth of GDP by 8% it is necessary to increase investments into capital assets by 56%. At growth of GDP by 12%, the investments into capital assets need to be increased by 60%. Investments into capital assets made UAH 151 177.00 million or USD 18 890.00 million (according to the results of 2009 (recalculation according to conditional exchange rate \$1.00\8.00 UAH)).

Thus, investments into capital assets have to grow by USD 10 582.00 million and by USD 11 338.00 million respectively. At the same time, the rate of direct foreign investments in Ukraine in 2009 was only USD 4 437.00 million, i.e. there is a deficit of investment funds for USD 6 145.00 million at target annual GDP growth by 8%, and for USD 6 901.00 million at target annual GDP growth by 12%.

*Table 7. Balance of Investment Funds in the Economy of Ukraine,  
According to Data of 2009*

Target growth of GDP	GDP = +8 %	GDP = +12 %
Necessary investments into capital assets	+56 %	+60 %
Investments into capital assets in 2009 ( <i>Table 1.6.</i> )	UAH 151 177.00 million, USD 18 897.00 million (conditional exchange rate \$1.00\8.00 UAH)	
Level of necessary growth rate of investments into capital assets, million USD	10 582.00	11 338.00
Direct foreign investments into Ukraine in 2009, million USD, ( <i>Figure 1.5.</i> )	4 437.00	
Deficit of investments into capital assets, million USD	-6 145.00	-6 901.00

Therefore, the development of any economy, first, requires capital expenditures, which is the primary factor of economic growth. Accumulation of financial resources within the country occurs in the form of savings of domestic household bodies, preservation of companies and the state. In addition, deficit of internal funds shall be replenished by exit of a company or the state to the foreign market of capitals.

International investment flows exist in the form of direct and portfolio investments. *Direct investments* are deposits from nonresidents to the authorized fund of a resident company that ensure ownership of nonresidents in the purchased property, property complexes or shares, bonds and other securities, making no less than 10 % of the value of the authorized fund of the resident company, as well as investments received as a result of entering into concession agreements on joint investment activity.

Direct investments stipulate long-term economic relations that reflect a long-term interest of foreign investor in the significant influence on control of resident company with the purpose of obtaining profit or achieving social effect.

Direct foreign investments lead to the establishment or renewal of the main funds, organization of production process, influencing

the increase of labor productivity and technical level of companies. By investing its capital in this or that country, a foreign company brings in new technologies, new ways of production organization, thus ensuring direct exit to the global market.

*Portfolio investments* include investments into shares of foreign companies, which do not grant the right of their control, as well as into bonds and other securities of both private and governmental issuers. Investments of that kind are mostly performed by private investors, but the government also often performs operations with securities. Such investments do not grant any real control of investor over the object of investment, i.e. the share in the capital shall be lower than the level established for direct investments (according to the standards of the International Monetary Fund – 10%).

International portfolio investments, unlike direct investments, are liquid, movable and sensitive to the situation at the financial markets. A portfolio investor does not care what sphere or company to invest in, because the criteria of investments are only the level of profits and perspectives of risk reduction. In case of deterioration of the situation at the markets and increase of risk, a portfolio investor can withdraw its investments much faster than a direct investor.

The international portfolio investments market is much smaller than the internal market of such investments. Institutional and individual investors still prefer national securities. However, it should be noted that there is a trend of slow but gradual growth in the number of operations with foreign securities in the majority of industrially developed countries.

Foreign portfolio investments lead to a flow of capitals into the markets of financial assets that causes positive effect upon their liquidity, increases the rates of trade and value of assets being traded. The negative aspects of foreign portfolio investments include risks of overloading the markets and creating financial bubbles, which increases general volatility of the financial system of the country.

It is known that almost all the episodes of net inflow of portfolio capital were accompanied by the active growth of the majority of financial assets at the stock market, which was not substantiated, by real economic condition of those issuers and the data of fundamental analysis. *Table 8* contains historical data on the episodes of net inflow of foreign capital in 1980–2009, before the beginning of the global financial crisis of 2008, which affected the flow of transboundary financial flows greatly.

Table 8. Episodes of Net Inflow of Capital to Countries

Country	Period	Cumulative amount (% of GDP)	Country	Period	Cumulative amount (% of GDP)
Australia	1988 – 1990	16.8	Malaysia	1989 – 1996	79.1
Australia	1995 – 1999	24.8	Mexico	1990 – 1994	26.3
Albania	1997	4.3	New Zealand	1995 – 1997	19.0
Argentina	1992 – 1994	11.6	New Zealand	2004 – 2009	31.4
Argentina	1997 – 1999	11.0	Pakistan	1991 – 1996	18.1
Brazil	1994 – 1996	11.3	SAR	2004 – 2009	12.4
Brazil	2000 – 2001	7.0	Paraguay	1994 – 1997	10.1
Venezuela	1991 – 1993	10.8	Peru	1992 – 1997	39.6
Venezuela	1997 – 1998	6.3	Poland	1995 – 2000	35.0
Vietnam	1999	10.1	Russia	2006 – 2008	4.1
Vietnam	2003 – 2009	38.4	Romania	1996 – 1998	14.2
Hong Kong	1997	7.5	Singapore	1990 – 1991	16.2
Egypt	1997 – 1998	8.2	Slovakia	1996 – 1998	31.4
India	2002 – 2009	18.3	Slovakia	2002	21.1
Indonesia	1990 – 1996	26.3	Slovakia	2005	14.2
Ireland	1996 – 2000	29.6	Slovenia	2001 – 2002	14.7
Ireland	2003 – 2008	77.1	Thailand	1988 – 1996	88.8
Cyprus	1999 – 2000	15.5	Thailand	2005 – 2009	12.2
Cyprus	2002 – 2009	23.2	Turkey	1995 – 2000	15.3
Columbia	1993 – 1996	20.2	Turkey	2003 – 2009	25.7
Columbia	2004 – 2005	6.0	Hungary	1991 – 2000	75.3
Costa-Rica	1987 – 1992	16.0	<b>Ukraine</b>	<b>2005</b>	<b>7.5</b>
Korea	1990 – 1996	18.9	Uruguay	2002 – 2009	12.0
Latvia	1994 – 1995	19.3	Philippines	1987 – 1997	59.6
Latvia	2001 – 2009	84.7	Croatia	1997 – 1999	29.9
Lithuania	1997 – 1998	21.0	Croatia	2002 – 2009	59.0
Lithuania	2005 – 2009	20.5	Chile	1988 – 1997	70.5

Source: Roberto V. Cardarelli, Selim S. Elekdag, M. Ayhan Kose, Capital Inflows: Macroeconomic Implications and Policy Responses. IMF Working Paper, March 2009.

As the above-given data say, many developing countries come across the rapid inflow of financial investments from time to time. As a rule, such condition is not stable or permanent. Eventually the

inflow is replaced by outflow, which leads to rapid drop of value of assets at the stock market and great demand for foreign currency at the currency market. Such condition is typical for many countries, including Ukraine. According to *Table 8*, in 2005, the inflow of capital to Ukraine made record-breaking 7.5% of the GDP of the country, which at that time was UAH 441 452 million, or USD 88 290 million (according to the average exchange rate of UAH 5.00\USD 1.00).

7.5% of GDP in 2005 is equal to about USD 6.6 billion. The major share of these funds was directed to the domestic stock market. It is understandable that the arrival of such amount to a relatively small market with a low free float and low liquidity caused rapid increase of all financial assets. For example, the FSTS index, according to the results of 2005, grew by 147.5%. With the beginning of the global financial crisis of 2007, foreign capital was gradually withdrawn from the country. This led to such negative phenomena as the crisis of stock market (drop of FSTS index by more than 120%) and foreign currency crisis of 2008 (reduction of NBU reserves and devaluation of UAH by more than 50 % within several months). Thus, massive inflow of foreign capital can cause negative consequences in the economy, on condition that it has a short-term and speculative purpose. The mechanism of deployment of such consequences has several stages.

First, financial markets are overloaded, in other words, there is an irrational growth of value of all financial assets circulating at the stock market. The growth of value is called irrational when it is caused by only an inflow of liquidity costs to the market and not related to the increase of productivity and profitability of the company. From that moment, one can say for sure that the bubble is being blown, and all bubbles are bound to explode eventually.

When this happens, the reverse process starts — foreign portfolio capital leaves the country in masses, causing a row of negative consequences that finally result in a financial crisis. Besides, a stable inflow of foreign portfolio capital from the moment of appearance of a stock market bubble and until the moment it explodes usually causes revaluation of national currency, which affects the condition of export branches. They lose their price competitiveness, and then suffer from recession — reduction of production and employment rates.

Additional challenges related to the inflow of capital are set for the Central Bank of the country. It is required to arrange special measures to reduce excessive financial liquidity and prevent market overload. In other words, the size of the financial bubble and

consequences of its explosion depend on the efficiency of these measures.

The economic nature of *direct foreign investments (DFI)* is less contradictory. Their engagement and attraction provides direct and indirect benefits and advantages for the economy of the country, which meets national interests.

First, DFIs are an additional source of accumulation, which multiplies resources for restoration and expansion of capital assets, implementation of investment projects and programs that ensure recovery and rise of the economy, saturation of the internal market of the country with competitive goods and services.

Second, direct foreign investments bring in not only capitals but also modern technologies that ensure production of competitive goods, according to two main parameters: by level of novelty and quality of produced goods and services, and by reduction of costs of their production.

Third, DFIs into specific objects are usually accompanied by personnel training, requalification at work and foreign probation. This helps to form a generation of workers who use new technologies effectively, along with market mechanisms, international contracts, and are able to withstand and win in the severe competition struggle.

Fourth, direct foreign investments prompt to learning the experience of market economy functioning and the rules of its game. Bringing economic conditions of capital functioning closer to the common accepted conditions in the world will facilitate the inflow of foreign capital, make the investor assured in return of invested funds with sufficient profit (without which the investor won't have any risk) and at the same time accelerate the process of formation of a favorable investment climate in the country for both foreign and domestic investors. Because of that, the market economy is supported by its own restoration base that facilitates the establishment of efficient owners.

Fifth, the flow of direct foreign investments accelerates the process of entry of the Ukrainian economy into global economy, development of effective integration processes, facilitating skillful use of advantages of international distribution and cooperation of labor, globalization, development of effective niches in the global economy and global market.

The above-named arguments prove that the growing flow of direct foreign investments can be assessed as a progressive trend of global nature as a necessary condition for growth and rise of the Ukrainian economy. The role of foreign capital shall be growing objectively; it needs to be engaged in all the spheres of economic activity for the development of innovative processes.

The peculiarity of the modern investment model of development of Ukraine is weak engagement of foreign capital in the economy. Ukraine is still greatly behind other countries of Central and Eastern Europe in this sphere (*table 9*).

*Table 9. Rate of Direct Foreign Investments in Ukraine at the Beginning of 2010 per Capita*

Country	Cumulative index
Czech Republic	7.418
Bulgaria	6.226
Kazakhstan	3.706
Poland	3.155
Romania	2.350
Ukraine	1.000

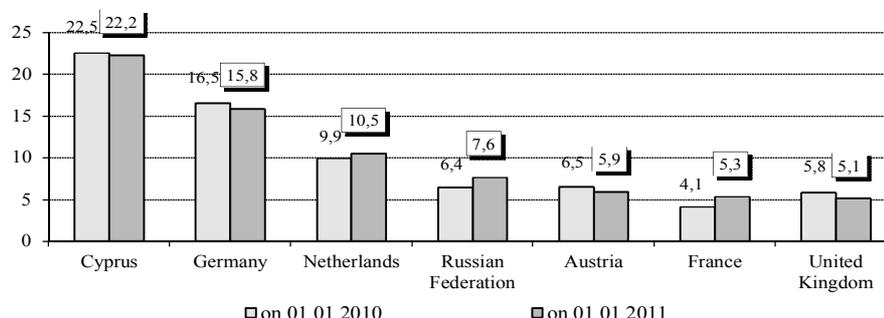
*Source:* European Bank of Reconstruction and Development, <http://www.ebrd.com>

So, for instance, according to the calculations of the European Bank of Reconstruction and Development, the cumulative index of the rate of direct foreign investments in Ukraine made USD 1 000 at the beginning of 2010, while in Czech Republic it was USD 7 418, Bulgaria – USD 6 226, Kazakhstan – 3 706, Poland – 3 155 and Romania – USD 2 350.

According to the data of the State Statistics Committee, the total amount of direct foreign investments made to Ukraine as of January 1, 2011, was USD 44708.0 million, which is only 11.6% more than the amount of investments at the beginning of 2010. Investments came from 125 countries of the world. The top ten of the main investor countries which cover almost 82% of the total amount of direct investments includes: Cyprus – USD 9 914.6 million, Germany – USD 7 076.9 million, the Netherlands – USD 4 707.8 million, Russian Federation – USD 3 402.8 million, Austria – USD 2 658.2 million, France – USD 2 367.1 million, United Kingdom – USD 2 298.8 million, Sweden – USD 1 729.9 million, British Virgin Islands – USD 1 460.8 million and the United States of America – USD 1 192.4 million (figure 5).

It is expedient to pay attention to the following aspect. Among the main investor countries, the offshore zones are Cyprus, British Virgin Islands (Jersey, Guernsey and Main islands), partially the Netherlands and Austria. The statistics notes a certain trend – the

largest investors into Ukraine are the offshore zones. They are the source of domestic shadow entrepreneurs but they are protected by the status of foreign investments.



**Fig.5.** Distribution of Direct Investments into Ukraine by Main Investor Countries (in % to the total amount)

This situation proves that, despite all the efforts of governments, the investment climate is still not getting any better. If the domestic business treats the opportunities of investing in the territory of the country on behalf of resident companies with distrust and withdraws money into the offshore jurisdictions, the same goes for the foreign investors for whom the domestic business environment is not comfortable or common.

In 1990, the future winner of the Nobel Prize, Robert Lucas, asked the question, «Why does not the capital flow from rich countries to poor ones?» Then he offered a possible answer: the matter is that the stimulation for investing into developing countries is low due to the absence of human resources, risk of expropriation of investors and monopoly.

True, if the level of protection of the investor rights is too low, the capital will leave the country even if its economy requires investments pretty badly. That's why financial liberalization can be very dangerous for the developing countries. In a country with inefficient corrupted government and bad corporate governance, elimination of barriers will only lead to loss of national capital and reduction of investments.

This means that respect of the ownership rights, competitive environment, developed financial markets and efficient state governance are much more important for the investment flows than the availability of natural resources, cheap workforce and privileged taxation modes.

## Conclusions

The unfavorable business climate is one of the main factors that affect the rate of incoming investments. According to the rating evaluation held by the World Bank, Ukraine takes the 142<sup>nd</sup> place among the 183 countries of the world. Due to the financial and economic crisis, internal resources for investment inflow have reduced greatly, and international financial resources have become practically inaccessible. Due to the unfavorable investment image, the country is less attractive for international capital during the post-crisis period.

The rates of development of the economy of Ukraine directly depend on the rate of foreign investments for implementation of investment projects for the development of domestic high-tech production and growth of high-tech export share. This needs formation and implementation of effective investment policy aimed at supporting the scientific, technical and innovative activity to accelerate capitalization of economic activity bodies and modernization of production without negative macroeconomic consequences.

On September 29, 2010 the Cabinet of Ministers of Ukraine approved the Decree «On Approval of Concept of State Target Economy Program of Investment Activity Development for 2011-2015» (hereinafter referred to as «The Concept»)<sup>1</sup>, aimed at establishing conditions for activation of investment activity for the modernization of real sector of economy and ensuring stable economic development.

One of the means of activation of the investment activity, namely ensuring constant increase of direct foreign investments specified in the Concept, is the establishment of conditions for engagement of investments at the international capital markets, namely: consolidation of stock markets, provision of protection of rights of investment service consumers, establishment of a central securities depository, clearing and settlement systems that ensure minimization of risks during fulfillment of agreements on securities.

At the current stage of economy development, Ukraine has to create a favorable investment environment to engage large amounts of financial resources, both internal and external. Foreign investments are not only the source of funds necessary for modernization and development of the Ukrainian economy. They facilitate engagement of new production technologies and market

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<sup>1</sup> On Approval of Concept of State Target Economic Program of Investment Activity Development for 2011—2015: *Decree of the Cabinet of Ministers of Ukraine of September 29, 2010*, No. 1900-p. [Electronic resource]. Available at: <http://zakon1.rada.gov.ua>

behavior technologies. The important thing is where they come from and to what spheres they are forwarded. Especially important is to engage investments from highly developed countries of the world characterized by the proper level of market culture.

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