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INTERNATIONAL PORTFOLIO INVESTMENTS: THE SPECIFICITYOF POST-CRISIS RENEWAL

Abstract. The article is devoted to the research of international portfolio investment flows post-crisis development. The flows dynamics and directions on the global level are explored. Structural changes in global international portfolio assets and liabilities are pointed out and respective reasons are clarified. The specificity of international portfolio flows in European Monetary Union and Ukraine is discovered. The correlation structure of the global international portfolio investment market (by the example of developed, developing and emerging markets) is investigated. Ideas on how the changes in international portfolio flows structure can be used to predict volatility and shocks in international financial markets are proposed. Preconditions to the second crisis wave are provided.

Аннотация. В статье исследуются особенности пост-кризисного развития потоков международных портфельных инвестиций. Анализируются динамика и направления этих потоков. Выявляются структурные изменения в глобальных активах и пассивах международных портфельных инвесторов, выясняются их причины. Изучается специфика международных портфельных потоков в Европейском валютном союзе и Украине. На примере рынков с разным уровнем развития (развитые, развивающиеся и граничные) проводится анализ корреляционной структуры мирового рынка международных портфельных инвестиций. Предлагаются идеи, позволяющие на основе структурных изменений в потоках международных портфельных инвестиций прогнозировать приближающиеся кризисные явления на мировых финансовых рынках.

Key words: international portfolio investments, world international portfolio, investments market, global economic and financial crisis, equity securities, long-term debt securities, money market investments, global market correlation structure, international portfolio assets and liabilities, international portfolio flows structural changes.

The global economic and financial crisis that covered the world during the latest several

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years has led to a great number of functional and structural changes in the global financial architecture. All fields of international financial system have changed dramatically during the crisis and have acquired new features and peculiarities after it. A lot of trends that took shape before the crisis were broken by it. But some of them were confirmed after the crisis, though some trends were completely broken or even changed their direction. All in all the influence of the global financial crisis on the world economy and international finance is difficult to be overvalued. It covered the real sector, the finance, the humanitarian field etc.

Being the part of international financial environment the field of international portfolio investments is one of the most vulnerable and sensitive to such economic and financial shocks. International portfolio investments much more quickly response to markets drops than for instance foreign direct investments (FDI). They are in this sense much more mobile and represent a great many of transactions in comparison to FDI, that are not so mobile taking into account the large amounts and small number of transactions. International portfolio investment business was one that largest losers in the global financial crises. Portfolio investors together with banking institutions felt the drop in their liquidity almost at once after the mortgage crisis in the USA in 2006. To meet the private investors' requirements they had to sell their assets that in turn brought about the drop in prices and that drop again led to the sharp cut of investors' assets.

Analyzing the current stage a lot of scientists argue if it can be called the post-crisis period or not. To our mind this question can be answered on several key levels. First, if we consider the field of manufacturing industry or machine building the question may be considered to be opened, since the post crisis recovery may take some time and the current period cannot be completely viewed as the post-crisis one. Not all industries have completely recovered nowadays with a lot depending on the industry and good life cycle. Moreover the current stages of business cycle in different countries differ as well thus making the post-crisis period identification on the global level even more difficult. Furthermore, the second wave of the crisis is expected by some experts and it will obviously make the recovery period even longer.

Second, when we consider the financial sector especially the quick, mobile and 'aggressive' international portfolio investing business the situation appears to be rather different. The world stock market which is one of the most active platforms for portfolio investors has completely renewed after crisis. The record before crisis level of its cap reached almost 64 trillion dollar in October 2007 and then fell to its bottom of 28.8 trillion dollars in February 2009. In April 2011 its lever is almost back to its highpoint – 59.2 trillion dollars . The situation on the money markets and long-term debt papers is similar. This gives us the ground to state that the current period can be regarded as the post-crisis, for financial markets at least, since all data in the field show the signs of recovery. Moreover for quick and mobile international portfolio investments the crisis period can finish as quickly as it can start. But again this situation can be changed by the expected second crisis wave which will be able to give us other grounds to think about the explored processes.

Third, now we can observe completely different than during the crisis character of markets behavior and their investment characteristics, we mean first of all the markets risk and return trade-off and their return correlation structure. This issue will be the object of our particular attention in this article later. Fourth, the portfolio flows themselves have almost recovered after the crisis extreme drop and show confident upstream trends nowadays. And, fifth, institutional investors, first of all investment funds, have recovered their activity and have almost resumed their assets and individual investors' money, trust and confidence.

All this shapes the structure of our current research. We focus on the mentioned core international portfolio investment business components: markets and flows and intend to confirm

(or disprove) that for this field the crisis is over and the present period can be completely regarded as the post-crisis. The mail goal of this research is to discover main functional changes that occurred in international portfolio investment flows during the crisis and in the post-crisis period and to reveal core changes in its dynamics. We are also to discover main changes in different markets risk and return trade-off as well as shifts in their correlation structure.

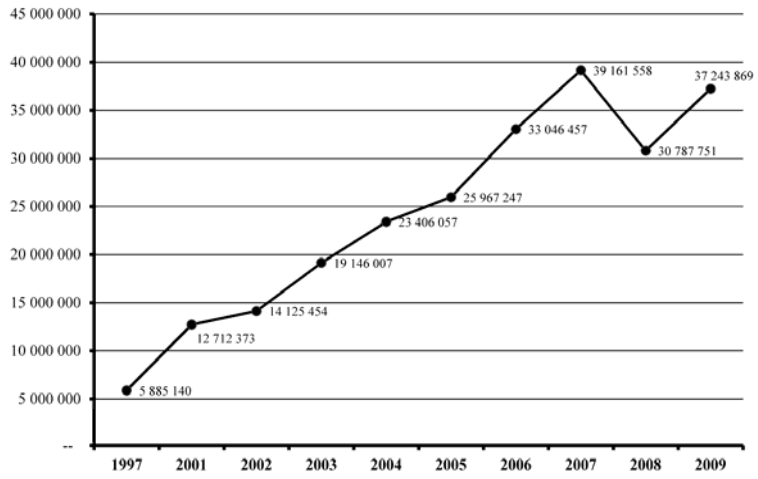

Fig. 1. Total International Portfolio Assets, mln. USD[1]

If we analyze the total global volume of international portfolio investments before the crisis we can see that since 1997 till 2007 the total assets grew permanently and rather rapidly (Fig. 1).

There was a great drop in portfolio assets in 2008 by almost 25 % – from 39.2 to 30.8 trillion $. In 2009 the total assets almost recovered to their pre-crisis record level of 37.2 trillion $. In this case we must pay attention to the year 2007 that is formally considered to be the crisis year but the portfolio flows were still increasing. The matter is that the markets ceiling in 2007 was in October and since then they began to fall. Though the cap began falling rapidly the global industry did not feel the decline in the whole year since the decline of November and December didn't override the 10-month growth. Thus the whole year showed the increase although the decline began in late fall.

	Total Assets		Equity Securities		Debt Securities			
					Short-term		Long-term	
Year	Trillion	%	Trillion	%	Trillion	%	Trillion	%
2004	23-Кві	100	8-Лип	37	1-Вер	8	12-Сер	55
2005	26.0	100	10-Чер	41	1-Вер	7	13-Тра	52
2006	33.0	100	14-Лют	43	2-Бер	7	16-Тра	50
2007	39.2	100	17-Січ	44	2-Чер	7	19-Кві	49
2008	30-Сер	100	9-Сер	32	2-Лип	9	18-Бер	59
2009	37.2	100	13-Лип	37	3-Січ	8	20-Тра	55

The analytical data on the structure of the global international portfolio investment assets is represented in Table 1.

Table 1.

Dynamics of the Global International Portfolio Assets Structure, by Instrument[2]

This data allows us to make several important conclusions. First, the crisis brought about the sharp decrease in the share of equities in the total figure of international portfolio assets. We can see that during the pre-crisis period the share of equities increased from 37 % in 2004 to 44 % in 2007 with permanently growing absolute figures. Then it fell to 32 % in 2008 and recov-

[1] According to the IMF Coordinated Portfolio Investment Survey data.

[2] All percentage figures are rounded to whole numbers. According to the data of the IMF Coordinated Portfolio Investment Survey.

ered a little in the post-crisis 2009 – to 37 %. Such situation can be explained by the fact that the extreme rise of risks (without adequate rise of returns) on equity markets during the crisis brought about the shift of international portfolio investors to less risky debt securities. In other cases lots of investors just refused to invest or withdrew their investments. Many investors driven particularly by home bias shifted their holdings from international to domestic assets. As the risks diminished after the crisis the share of equities began to go up. Furthermore the 2009 returned the trust back to the global financial industry that attracted new capital.

Second, the crisis brought about the growth of money market instruments investment share. Its pre-crisis level varied on the level of 7-8 %, but rose to 9 % in 2008. In 2009 it reached the status quo on the level of 8 %. Such shift can be explained by lower risks in the short term instruments markets and the growing popularity of international money market in general. But all in all the difference between the pre-crisis, crisis and post-crisis absolute figures is not significant so we cannot state that the decrease in the equities share is reflected in the growth of money market instruments investments. Though if we analyze the relative figures the growth from 7 to 9 % means the 28.6 % growth that is almost one third.

Third, the most part of equity instrument share decrease reflected on the share of long-term instruments. It increased by 10 percentage points in 2008 – from 49 to 59 % and fell to 55 % in the post-crisis period. The pre-crisis share varied from 49 to 55 % permanently decreasing. That is because the global situation with indebtedness worsened lately especially after the mortgage crisis in the USA when major rating agencies lowered their sovereign ratings. The 2008 increase of this figure is by 20.4 % and in 2009 it decreased by 6.8 %.

This structure data also allows us to notice that in 2006 and 2007 the rates of equity securities share growth and the debt securities shares decrease slowed down if compared with early years. Thus we can see that these figures began to change somewhere before the crisis and assume that their dynamics can be used to predict the crisis. We mean the sharp necessity to notice when these growth and decrease rates begin to slow down so that to expect the crisis. The main task then is to correctly estimate the time lag and the rates of increase and decrease slowing down so that we could state that the shock is approaching. But this issue requires further closer look and deep research in order to be proved or denied.

One more important thing we must explore is the geographic structure of international portfolio assets and liabilities. By geography we mean first of all not the geography in the traditional sense but the geography of markets such as developed markets, emerging markets etc. The level of a market development is meaningful in this context. The reason is the following. During the crisis (especially in its early phase) major capital flows changed their direction from developed markets to less developed countries, since the risks in the first rose extremely without respective rise of returns. Instead of less developed markets as well suffered from risks growth but still had much higher returns. Such shifts in capital flows changed the usual situation in the balances of payments of the countries. That's why the analysis of these changes during and after the crisis is important and timely.

Thus we actually come not to markets geography but to markets classification. We base our study on the traditional classification of stock markets used for international portfolio capital flows research. This classification is conducted by Morgan Stanley Capital International (MSCI) and is mostly supported by Standard and Poor's (S&P) and other rating and analytical agencies. According to this classification all stock markets are divided into 3 groups depending on the level of their development: developed, emerging and frontier. This classification differs from that one of economies conducted by the IMF or World Bank but for most countries they coincide. Moreover MSCI do not classify all markets of the world but only those that are rather impor-

tant from the point of view of their capitalization. So there are 24 developed markets, 21 emerging and 25 frontier markets identified. Other markets that are not covered by this classification are included into the separate group "Others" in our research. This group accounts for a pretty small portion of global portfolio flows (less than half percent) and thus doesn't have any seri-

Invest from:	2002	2003	2004	2005	2006	2007	2008	2009
Developed	12023587	16385496	20118649	22331891	28663037	33711666	25443727	31366735
	85.1	85.6	86.0	86.0	86.7	86.1	82.6	84.2
Emerging	78871	119100	153862	219159	340413	489934	348748	491344
	.6	.6	.7	.8	1.0	1-Бер	1-Січ	1-Бер
Frontier	33520	57541	100774	134837	193934	295269	264807	329009
	.2	.3	.4	.5	.6	.8	.9	.9
Off-shores	545577	711153	855093	1019281	1222108	1467713	1028519	1157364
	3-Вер	3-Лип	3-Лип	3-Вер	3-Лип	3-Лип	3-Бер	3-Січ
Others	14798	22934	32666	40942	68606	87606	58872	81871
	.1	.1	.1	.2	.2	.2	.2	.2
Int. org-s and reserves	1429101	1849783	2145013	2221136	2558358	3109369	3643077	3817546
	10-Січ	9-Лип	9-Лют	8-Чер	7-Лип	7-Вер	11-Сер	10-Бер
Total value	14125454	19146007	23406057	25967247	33046457	39161558	30787751	37243869
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

ous methodological and practical meaning. And we explore one more group of markets that are in off-shores. The geographical structure of global international portfolio investments assets is represented in Table 2.

Table 2.

Geographical Structure of the Global International Portfolio Assets, in millions of USD and %[3]

Analyzing the data of Table 2, we can state that the structure of global portfolio assets did not change significantly under the crisis impact. If allowed we can say that in this sense portfolio investments were rather stable in their instability. Anyway one should note that the share of developed markets decreased from 86.1 % in 2007 to 82.6 % in 2008 and then rose to 84.2 % in 2009. That's because developed markets investors cut their assets in absolute figures and partially shifted to domestic assets reducing risks. The share of frontier markets was permanently growing since 2002 and the crisis did not change this upstream movement, though the absolute and relative figures are now pretty small, just .9 % of the global assets' volume. The share of emerging markets and off-shores dropped a little like the share of developed markets.

The noticeable thing in this structure dynamics is the increase of the share of international organizations holdings and the share of securities held as reserve assets. This figure was confidently decreasing before the crisis, and its growth in 2008 can be explained by the actions of international organizations to save the industry and to prevent the securities from sharp drop. The 2008 gave us the increase of this figure by 49.4 % – from 7.9 to 11.8 % and this share remains

Investment in:	2002	2003	2004	2005	2006	2007	2008	2009
Developed	12029008	16342100	19820457	21662467	27292598	31632394	25595607	30583997
	85.8	85.4	84.7	83.4	82.6	80.8	83.1	82.1
Emerging	482422	809431	1041215	1466093	2011773	2810561	1543509	2582067
	3-Кві	4-Лют	4-Кві	5-Чер	6-Січ	7-Лют	5.0	6-Вер
Frontier	34852	55031	76359	86648	141757	172577	114468	147581
	.2	.3	.3	.3	.4	.4	.4	.4

[3] The poured figures are percentages. Calculated by the author on the basis of the IMF Coordinated Portfolio Investment Survey data.

Investment in:	2002	2003	2004	2005	2006	2007	2008	2009
Off-shores	866371	1225129	1603032	1855953	2420662	3201010	2115826	2416770
	6-Лют	6-Кві	6-Сер	7-Січ	7-Бер	8-Лют	6-Вер	6-Тра
Other	272200	332373	410023	393703	624336	727130	784762	857038
	1-Вер	1-Лип	1-Сер	1-Тра	1-Вер	1-Вер	2-Тра	2-Бер
Int. org-s and reserves	337847	381921	454477	495102	558633	626656	633586	656393
	2-Кві	2.0	1-Вер	1-Вер	1-Лип	1-Чер	2-Січ	1-Сер
Total value	14022699	19145985	23405563	25959967	33049758	39170328	30787759	37243845
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

on a rather high level in 2009.

The next step of our research is to investigate the structure of global portfolio liabilities (Table 3).

Table 3.
Geographical Structure of the Global International Portfolio Liabilities, in millions of USD and %[3]

The consequences of the crisis in the sense of global portfolio liabilities are that the share of more risky emerging and off-shore markets dropped and the share of less risky developed markets and other markets rose as well as the share of international organizations. The situation with frontier markets is the same as in previous case – their share did not change at all.

We must as well notice some more significant structural changes in international portfolio flows. The crisis brought about the shift from privately issued securities to public sector debt papers. And this trend is valid for all market segments, we mean for money market as well as for notes and bonds markets segments. This shift occurred not only because of the tendency to reduce risks but as well because investors searched for higher liquidity. This is as well because of the tendency to reduce extremely grown risks. The Euro area portfolio investors disinvested a lot and repatriated their funds during the crisis while their liabilities grew because foreign investors decreased the risks by investing in European assets. And if we recollect the mentioned home bias it was even more typical for European developed markets investors.

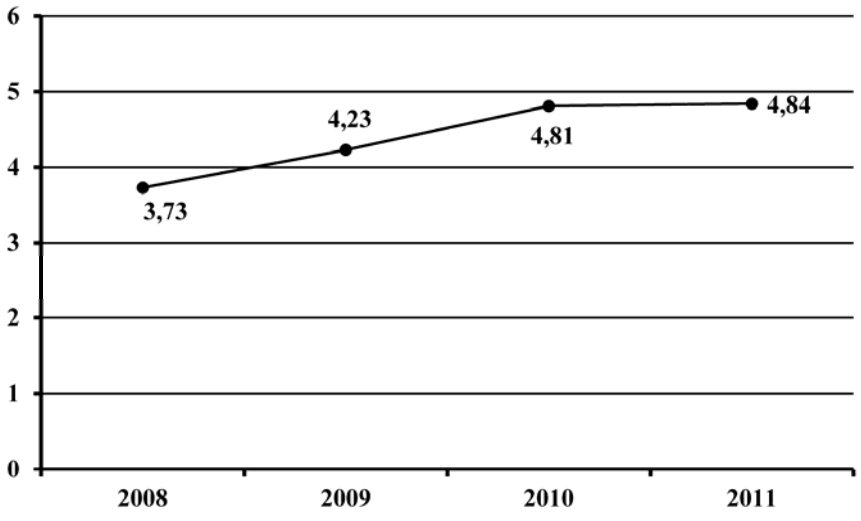

Fig. 2. Total International Portfolio Assets of the countries of EMU, trillion EUR[4]

In all cases we can observe that all figures show confident signs of post-crisis recovery. If we again take into consideration the close to Ukraine region – European Monetary Union

[4] Figure for 2011 represents the data as of Q1 of 2011. According to the European Central Bank data.

(EMU) the present dynamics of its total international portfolio assets also shows confident signs of post-crisis renewal (Fig. 2).

Year	Total	Equity			Bonds and Notes			Money Market Instruments		
		Total	MFI[6]	Non-MFI	Total	MFI	Non-MFI	Total	MFI	Non-MFI
2008	3727.6	1128.6	68.4	1060.2	2164.2	964.8	1199.4	434.8	358.1	76.7
2009	4226.3	1488.7	76.2	1412.5	2339.5	917.5	1422.0	398.1	327.3	70.8
2010	4809.7	1900.9	96.9	1804.0	2510.8	800.7	1719.1	398.0	312.9	85.1
2011[7]	4838.6	1900.0	88.7	1811.3	2538.4	813.7	1733.7	400.2	308.6	91.6

We can see, that in 2009 and 2010 assets increased from 3.73 trillion EUR in 2008 to 4.81 in 2010, and in the first quarter of 2011 they as well went up from 4.81 in 2010 to 4.84 trillion euros. Most global crisis and after-crisis trends can be completely confirmed by the example of the EMU (Table 4).

Table 4.
Securities breakdown of portfolio investments assets of the EMU, in billions of EUR[5]

We can see that all absolute figures of international portfolio assets are growing since 2009

Year	Total	Equity			Bonds and Notes			Money Market Instruments		
		Total	MFI[9]	Non-MFI	Total	MFI	Non-MFI	Total	MFI	Non-MFI
2008	100	30-Бер	1-Сер	28-Кві	58.1	25-Вер	32.2	11-Лип	9-Чер	2-Січ
2009	100	35.2	1-Сер	33.4	55.4	21-Лип	33.6	9-Кві	7-Лип	1-Лип
2010	100	39.5	2.0	37.5	52.2	16-Чер	35.7	8-Бер	6-Тра	1-Сер
2011[10]	100	39.3	1-Сер	37.4	52.5	16-Сер	35.8	8-Бер	6-Кві	1-Вер

till the first quarter of 2011. Moreover one can notice the growth in any taken observed period even in the first quarter of 2011. Only one figure decreased a little – the total volume of equities investments. The figure for the end of 2010 was 1900.9 billion euros and it dropped a little in 2011 – to 1900.0 billion. Still further investigation is required in this sense in order to explore the structural changes in the total assets (Table 5).

Table 5.
Securities breakdown of portfolio investments assets of the EMU, in %[8]

The relative figures of Table 5 show us that the post-crisis period is characterized by the following core trends. First, the rates of equities investments growth are increasing. They went up from 30.3 % in 2008 to 35.2 % in 2009 and 39.5 % in 2010. Second, the reverse side of the same coin reflects the drop in the respective rates of debt securities. The figures for bonds and notes investments in the respective years are 58.1 %, 55.4 % and 52.2 %. Third, the share of the money market instruments investing is also decreasing. All these shifts in the EMU confirm the above outlined global trends and all in all practically support the idea that the post-crisis risk pro-

[5] Calculated by the author on the basis of ECB Data.
[6] MFI – Monetary and Financial Institutions.
[7] The data for 2011 represent the figures for the Q1
[8] Calculated by the author on the basis of Table 4 data. In some cases the sum of the shares may not be equal to 100 % because of the rounding.
[9] MFI – Monetary and Financial Institutions.
[10] The data for 2011 represent the figures for the Q1.

file has changed. The decreased risks and the increase in business activity brought about the investors' come back to more risky equity securities. Less risky bonds, notes and money market instruments that were much more popular during the crisis now have given way to stocks. This in turn verifies that the present period can be considered as the post-crisis.

Notwithstanding the year 2011 showed some opposite shifts though the only quarter cannot be completely representative in this sense. We can see that the share of equities (the rate of growth) dropped a little – from 39.5 % to 39.3 % with the simultaneous growth of the respective figure for bonds and notes – from 52.2 % to 52.5 %. The rates for money market did not change in the first quarter. The mentioned issues give us the ground for the following substantial assumption. If we take that the our thesis about the definite changes in the risk profile and the respective structure of international portfolio investment flows changes before, during and after the crisis is right then we can forecast the instability in the global financial market especially concerning the problems with liquidity. In order to make such forecasts further research is required but still the idea looks successful. The two core issues in this sense are to define the parameters of such structural changes and the framework for the different types of risk profiles. And, second, we must determine the appropriate time lags in order to clarify the time period since the structural changes and till the instability itself.

And that completely corresponds to the dominating nowadays expectations of the second crisis wave. Most scientists and practitioners agree that the second wave of the crisis is coming but nobody knows its chronology for sure. And again if our assumption is true and if we accept that the second crisis turn will actually occur then such method of crisis forecasting can be correct and is obviously true thought the problem of time lags and figures values still remains unsolved. Anyway we have pointed the directions of substantial interrelation between international portfolio investments market and the global financial market and these markets mutual co-influence.

The next significant question we are going to explore and that is of great importance for international portfolio investments is the markets risk and return trade-off and the interdependence between markets themselves. In order to conduct such a research we arbitrary take three different countries representing three different groups of markets (according to the above mentioned MSCI classification) – the USA (developed markets), China (developing markets) and Ukraine (emerging markets)[11]. For every one we take the 5-year period from 2007 to 2011 and calculate the monthly returns for every period[12] . So we finally get 12 returns for 4 full periods and 6 returns for 2011. The methodology of the data array formation is the following. To calculate any given return we use the MSCI standard country index that includes large and mid-cap companies. All indices are converted into euros that allows making correct comparisons and imply complete reinvesting of dividends on stocks underlying. All indices data is monthly with the figure itself representing the last trading day of the month.

Moreover we investigate the world market that is represented by MSCI All Country World Index (ACWI Index). It consists of 45 country markets and includes 24 developed and 21 emerg-

$$r_i = \frac{I_i + (P_{i1} - P_{i0})}{P_{i0}}, \qquad (1)$$

ing market country indices and is free float-adjusted market capitalization weighted index. We calculate the returns for the ACWI as well as for three above mentioned country indices. The next

[11] The respective indices are China Standard (Large + Mid Cap) Index, Ukraine Standard (Large + Mid Cap) Index and USA Standard (Large + Mid Cap) Index.

[12] The data for 2011 is for the first 6 months only (6 period from January to June including).

step of our research is to calculate risks and average returns for all ratios in all periods. And finally we measure the correlation between the country indices and the World Index in all periods. These figures will be later analyzed and their dynamics will be explored.

So first is the returns calculation. The returns are calculated on the basis of the indices figures using the simple return formula (1) and are often expressed in percentage:

where r_i is the index i return for the period, I_1 – index i dividends cash flow for the period

№	Year	Month №	ACWI Index	China	Ukraine	USA
1	2007	1	2.509	-2.823	16.354	3.317
2	2007	2	-2.107	-3.356	-4.961	-3.426
3	2007	3	1.267	3.058	3.452	.307
4	2007	4	1.911	1.208	.670	1.719
5	2007	5	4.538	9.061	1.931	4.971
6	2007	6	-.620	11.130	-5.448	-2.029
7	2007	7	-2.821	8.874	3.453	-4.391
8	2007	8	.175	7.645	-11.478	1.935
9	2007	9	1.035	14.972	-6.711	-.503
10	2007	10	2.154	14.612	7.348	-.044
11	2007	11	-5.755	-14.758	-9.381	-5.598
12	2007	12	-.688	-4.068	6.515	-.177
13	**2007 – AVERAGE**		**.133**	**3.796**	**.145**	**-.327**
14	2008	1	-9.318	-22.544	-8.214	-7.246
15	2008	2	-2.148	8.044	-.719	-5.502
16	2008	3	-5.557	-15.860	-13.896	-4.546
17	2008	4	7.528	17.663	-6.510	6.813
18	2008	5	1.863	-4.782	7.341	1.782
19	2008	6	-9.431	-13.339	-11.398	-9.404
20	2008	7	-1.610	3.308	-17.060	-.174
21	2008	8	3.739	-2.695	-10.477	7.428
22	2008	9	-8.245	-16.557	-35.049	-4.802
23	2008	10	-11.150	-14.420	-28.435	-8.171
24	2008	11	-6.569	4.481	-17.788	-7.440
25	2008	12	-5.362	.869	-14.199	-7.532
26	**2008 – AVERAGE**		**-3.855**	**-4,653**	**-13,034**	**-3.233**

[13] Calculated by the author on the basis of MSCI index data.

№	Year	Month №	ACWI Index	China	Ukraine	USA
27	2009	1	-.764	-.536	-1.458	-.367
28	2009	2	-8.916	-2.300	-20.530	-9.439
29	2009	3	3.590	9.174	2.304	3.855
30	2009	4	12.115	11.322	26.703	9.816
31	2009	5	3.057	9.894	27.644	-1.233
32	2009	6	.387	5.081	-4.120	1.141
33	2009	7	7.679	9.653	-3.821	6.393
34	2009	8	2.369	-8.151	-7.391	2.230
35	2009	9	2.712	2.768	5.224	1.985
36	2009	10	-2.443	5.451	22.257	-2.850
37	2009	11	2.361	.690	-10.249	4.121
38	2009	12	6.840	5.124	-2.138	6.799
39	**2009 – AVERAGE**		**2.416**	**4.014**	**2.869**	**1.871**
40	2010	1	-1.218	-5.691	11.876	-.398
41	2010	2	3.185	4.084	12.341	4.993
42	2010	3	7.396	6.320	25.360	6.897
43	2010	4	1.988	1.425	11.229	3.394
44	2010	5	-1.817	2.554	-21.179	-.376
45	2010	6	-2.876	1.448	6.885	-5.151
46	2010	7	1.701	-1.871	.108	.591
47	2010	8	-1.037	-.315	-9.360	-2.047
48	2010	9	2.035	1.566	-7.202	1.560
49	2010	10	1.793	2.046	-4.850	2.091
50	2010	11	4.440	4.232	16.305	6.891
51	2010	12	4.167	-3.660	16.000	3.523
52	**2010 – AVERAGE**		**1.647**	**1.012**	**4.793**	**1.831**
53	2011	1	-.590	-2.657	6.149	.198
54	2011	2	2.193	-2.529	16.660	2.589
55	2011	3	-2.728	2.509	-7.269	-2.554
56	2011	4	-.379	-2.794	-3.265	-1.421
57	2011	5	1078	3.575	-5.392	2.081
58	2011	6	-2.368	-4.480	-7.433	-2.526
59	**2011 – AVERAGE**		**-.466**	**-1.063**	**-.092**	**-.272**

(it is already included into the index value and thus not used in the calculations directly), P_{i0} – index *i* value at the beginning of the period, P_{i1} – index *i* value at the end of the period (this figure includes the gross reinvesting of dividends for the period).

The results of the returns calculations are represented in Table 6.

Table 6.

Markets monthly returns, in %[13]

Analyzing the data of Table 6 we must pay attention to the following core substantial issues. First, the years 2009 and 2010 show complete post-crisis returns renewal in all markets and in the global market. All returns are positive and rather high. In the crisis 2008 all returns in all markets were negative with the highest negative value for Ukraine of -13.034 %. And we must as well notice that the developed USA market always had the most stable return figures that were more close to the figures of the global market (we hope to support this idea later when exploring the global market correlation structure). Actually the basic idea to be explored later is that the more developed the market the closer it will behave to the global market. Second, less developed markets like developing or emerging group showed less stable returns dynamics. For example, Ukraine had a very substantial returns drop in 2008 and the highest average return of 4.793 % in 2010. China's returns were not very stable as well and in 2011 had the lowest negative value of -1.063 %. And finally third, the years 2010 and 2011 showed worse dynamics then 2009. All returns in 2010 (except Ukraine) were lower than in 2009 and all 2011 returns were negative at all. That can be again considered as the additional evidence of the changed risk and

№	Year	ACWI Index	China	Ukraine	USA
1	2007	2.65 (.133)	8.53 (3.796)	7.70 (.145)	3.00 (-.327)
2	2008	5.58 (-3.855)	11.54 (-4.653)	10.82 (-13.034)	5.58 (-3.233)
3	2009	5.08 (2.416)	5.57 (4.014)	14.51 (2.869)	4.85 (1.871)
4	2010	285 (1.647)	3.28 (1.012)	12.81 (4.793)	3.44 (1.831)
5	2011	1.74 (-.466)	2.99 (-1.063)	8.79 (-.092)	2.06 (-.272)

return profile before the second wave of the crisis. Though again we had only half a year statistics in 2011.

Now we must have a look at the risk of the investigated markets. The risks are the standard deviations of the monthly returns and are represented in Table 7.

Table 7.

Markets risks (average returns) dynamics, standard deviations (%)[14]

The risk and return data analysis gives us the following results. First, the risks rose extremely in the crisis 2008. In some cases the growth figure was almost twice – from 3.00 to 5.58 (the USA) and even more than twice – from 2.65 to 5.58 (the world market). Second, the post-crisis period can be described by the risks drop for all (except Ukraine in 2009) cases. In 2009 the drop for the world market was .5 percentage points – from 5.58 to 5.08, it was more than twice for China and .73 percentage points for the USA. The next post-crisis year 2010 showed much more violent drop in risks – almost twice for the world and China and a little less for Ukraine and the USA thus again showing the post crisis-renewal of the field. And, finally, third, but probably the most important in the part of risks is that the 2011 did not demonstrate the increase in risks in spite of the decrease in returns. Moreover, the risks again decreased and the de-

[14] Calculated by the author on the basis of Table 6 data. For the convenience of analysis the average returns figures from Table 6 are represented in brackets.

crease rates were rather high – by 39 % for the world market, by 8.8 % for China, by 31.4 % for Ukraine and by 40 % for the USA. Thus we can state that these figures do not let us to surely confirm the second crisis wave though most figures suggest this idea. We must again keep in mind that the array includes only half a year indeed but if our figures are true then the conclusion is that the crisis and before crisis risk-return profile has not developed yet. Therefore either the second wave of the crisis is not coming yet (or will not come at all) or the time lag before such structural changes and the crisis is much wider and requires further identification.

Ukraine looks to be an exception from the generally common risk and return profile dynamics. The matter is that the economics is rather unstable and risky especially from the point of view of political situation. And this is the issue which is rather typical for domestic investors who have already got used to operate in such environment. But for foreign investors this situation can be scaring and unusual and they respond to such instability rather quickly and so do their international portfolio flows thus influencing the market substantially. Moreover the sovereign ratings of Ukrainian debt more often worsened during the past years bringing about portfolio disinvestment by foreign investors. That is why out country had strange figures in all observed years except the 2007 that was the market top before the crisis.

Market	USA					China					Ukraine					World				
	7	*8*	*9*	*10*	*11*	*7*	*8*	*9*	*10*	*11*	*7*	*8*	*9*	*10*	*11*	*7*	*8*	*9*	*10*	*11*
USA						.30	.50	.44	.47	.20	.40	.36	.25	.57	.69	.92	.93	.96	.92	.95
China											.01	.36	.65	.10	-.34	.54	.73	.57	.43	.06
Ukraine																.47	.57	.44	.65	.71
World																				

Finishing our risk-return research we must explore the correlation of the markets under consideration and the world market as well as their correlation between themselves. So basing on the above organized data array we calculate the simple correlation between the Chinese, American, Ukrainian and world markets in any of the years given and present the results in a correlation matrix in Table 8.

Table 8.

Different markets correlation matrix, in ratios[15]

Analyzing the correlations we must keep in mind two well-known ideas. First, the further the higher the correlations between different markets. This can be explained by the issue that developing the world becomes more integrated, different markets become more integrated, and they have more and more common features and mutual procedures. Globalization brings about closer ties between all segments of global economy particularly between financial markets and their different segments. The further integration is developing the more unified become the trading procedures and pricing systems, and the more stock prices depend between themselves. It means that the further the higher are the correlations taken all others equal. And second, during crises markets become more volatile and much more dependent. There is some evidence that during crises and different market shocks markets can behave almost in the same way even markets from different market groups. It means that during crises and shocks different markets have higher than normal correlations. And this in turn opens gates for crisis transmission thus making the world even more global and the crisis itself even more overwhelming and its spread

[15] Calculated by the author. 07, 08, 09, 10 and 11 – represent the years 2007, 2008, 2009, 2010 and 2011 respectively.

speed much higher. So with the correlations decrease after the crisis the post-crisis period is coming and the gates for crisis transmission are closing.

The correlations testify that the more developed the market the more it correlates with the global market. The respective figures for the USA vary from .92 to .96. For China and Ukraine the figures vary respectively from .43 to .73 (if not taking into account the abnormally small figure of .06 in 2011) and from .44 to .71 with average figures being higher for China. It means that the USA (and developed markets in general) is much deeper integrated into the global financial market that is also supported by risk and return data.

From the correlations dynamics we can see that in 2008 all correlations rose with only one between Ukraine and the USA fell a little – from .4 to .36. And this completely corresponds to the idea of correlations increase during the crisis. In 2009 almost all figures dropped with only two exceptions – one for abnormal figures for Ukraine in 2009 and the second for the USA – from .93 to .96 that is not important in this case since American figures were extremely high even before the crisis. Thus the correlation structure of the global market testifies to the post-crises renewal.

What concerning the expectations of the second crisis wave the correlation dynamics shows us the following. In 3 of 6 cases the correlation in 2011 did not rise. All these 3 cases include correlation with Chinese market that behaved very untypically in 2011. All other cases confirm the correlation increase thus supporting the idea of approaching shock that in our case can be the second crisis wave. If we take China as an exception rather than a rule then we can the by and large accept the general case or correlations increase. Hence we can again predict the increased volatility at least though final and definite conclusion requires much wider data array and countries set.

The last issue we shall explore in this research is the post-crisis specificity of international portfolio investments in Ukraine. The data of Table 9 demonstrates that seeking for liquidity during the crisis foreign residents were actively selling their Ukrainian portfolio assets in 2008 and 2009 with respective figures being -1292 and -1551. The post-crisis recovery came rather quickly in 2010 when foreign residents invested 4334 million USD in Ukrainian assets but still

Balance of Payments Article	**2006**	**2007**	**2008**	**2009**	**2010**	**2011 (half year)**
ASSETS	**-3**	**-29**	**12**	**-8**	**-17**	**-4**
Equities	-2	-21	10	-6	4	...
Debt Securities	-1	-8	2	-2	-21	...
Bonds and Notes	-1	-8	2	-2	-21	...
Money Market Instruments	0	0	0	0	0	...
LIABILITIES	**3586**	**5782**	**-1292**	**-1551**	**4334**	**3008**
Equities	322	715	388	105	290	266
Debt Securities	3265	5067	-1680	-1656	4044	2742
Bonds and Notes	3190	5143	-1680	-1684	4039	2776
Money Market Instruments	74	-76	0	28	5	-34
TOTAL PORTFOLIO INVESTMENTS	**3583**	**5753**	**-1280**	**-1559**	**4317**	**3004**

[16] The National Bank of Ukraine balance of payments statistics. Assets are with "minus" as they appear in the balance of payments and liabilities are with "plus". Positive assets operation means that existing foreign assets were sold (disinvestment from the point of view of Ukrainian residents). In the same way negative liabilities operation means that foreign residents sold Ukrainian assets.

having not achieved the pre-crisis level of 5782 million dollars. The figure for the first six months of 2011 is 3008 that is pretty high and looks like exceeding the previous one in the year end. What concerning assets we are not going to draw any conclusions since the absolute figures are extremely small but the positive figure of 12 for 2008 confirms the residents will to get their liquidity back by selling assets. Anyway the 2009-2011 period shows clear signs of post-crisis recovery.

Table 9.

International portfolio assets and liabilities operations of Ukraine, in millions of USD[16]

But what is more important is the portfolio assets and liabilities structure by instruments that

Balance of Payments Article	2007	2008	2009	2010	2011	2011 (1 Jul)
ASSETS	**63**	**103**	**49**	**79**	**94**	**99**
	-100	**-100**	**-100**	**-100**	**-100**	**-100**
Equities	56	88	45	73	67	73
	-88,9	-85,4	-91,8	-92,4	-71,3	-73,7
Debt Securities	7	15	4	6	27	26
	-11,1	-14,6	-8,2	-7,6	-28,7	-26,3
Bonds and Notes	7	15	4	6	27	26
	-11,1	-14,6	-8,2	-7,6	-28,7	-26,3
Money Market Instruments	0	0	0	0	0	0
	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)
LIABILITIES	**12861**	**18618**	**17059**	**15567**	**20034**	**23279**
	-100	**-100**	**-100**	**-100**	**-100**	**-100**
Equities	1248	2082	2304	2421	2773	3171
	-9,7	-11,2	-13,5	-15,6	-13,8	-13,6
Debt Securities	11613	16536	14755	13146	17261	20108
	-90,3	-88,8	-86,5	-84,4	-86,2	-86,4
Bonds and Notes	11515	16536	14755	13117	17200	20080
	-89,5	-88,8	-86,5	-84,3	-85,9	-86,3
Money Market Instruments	98	0	0	29	61	28
	(.8)	(.0)	(.0)	(.2)	(.3)	(.1)

can predict the increasing volatility as we have pointed above. To analyze this structure we shall use the international investment position statistics of Ukraine that is again provided by the National Bank of Ukraine. Unlike the balance of payments data that reflects the flows position data represent the investments stock that has been accumulated on a certain date. The flows structure can actually be much more sensitive to shocks that the flows themselves. The structure data is represented in Table 10.

Table 10.

International portfolio assets and liabilities of Ukraine, in millions of USD[17]

[17] The National Bank of Ukraine international investment position statistics. Percentage figures are presented in brackets and are rounded to one tenth. The cited data is on the 1st of January of the given year except the last column.

Considering the portfolio investment flows structure we must note several core issues. First, foreign assets' of Ukrainian portfolio investors structure changed during the crisis and after it in the direction opposite to that one observed for the global market. Instead of decreasing the share of equities jumped up a little in 2008 (from 85.4 % to 91.8 %) and in 2009 (from 91.8 % to 92.4 %). And then it dropped in 2010 and 2011. But we are still not going to draw final conclusions on this basis since the absolute figures are pretty small and to our mind cannot be considered as representative. Almost all changes in equities share were reflected in respective (opposite) changes in debt securities share with the money market of Ukraine being almost undeveloped and thus it attracted no foreign portfolio investments.

And, second, liabilities structure as well changed oppositely to the global market trend. In 2008 and 2009 the share of equities increased respectively from 11.2 % to 13.5 % and from 13.5 % to 15.6 %. The debt securities showed opposite to equities changes with the money market being pretty small. Unlike the case with assets this situation is more representative and it moreover shows the attitude of foreign investors to Ukraine as the part of the global portfolio investment market. Such unusual behavior can be explained by the following reasons. First, as we mentioned above the crisis brought about the global shift in the geography of international portfolio flows. Seeking for lower risks with low and negative returns being observed everywhere investors moved to less developed markets. Actually Ukraine was not very popular from this very point of view. It was rather not so favorable to attract investment than to promote their structure change. And this is the second reason. The risks of default on debt securities (even sovereign and guaranteed) rose so high, that even high traditional risks of stock became more acceptable for foreign investors. Thus many of them preferred to invest rather in risky Ukrainian stocks than in highly probable defaultable debt papers. And, third, the shift from debt securities occurred particularly because of the permanently unstable political situation that made sovereign papers totally unacceptable for foreign investors. All this means that Ukrainian market substantially differs from the global market from the point of view of the portfolio flows structure. Thus the typical methods and approaches to global market analysis can slightly be used in Ukrainian realities.

And it is valid for the above used approaches to crisis and shocks forecasting. We cannot define for sure if the current period is the post-crisis one in Ukraine, or the second crisis wave is approaching. The data for 2010 and 2011 do not again confirm the typical trends observed for the global market. We have the decreased figure for liabilities in 2010 (from 15.6 % to 13.8 %) and it has almost not changed in the first half of 2011 and is 13.6 %.

Summing up the current research we can draw the following most important conclusions and outline the most substantial findings. First, the field of international portfolio investments and the global international portfolio investment market are very sensitive to different shocks and crisis. The investment industry rather quickly responded to the crisis beginning in 2007 and not less quickly responded to its end in late 2009 and 2010. Most data and analysis conclusions confirm that the global portfolio industry has recovered from the crisis but the second crisis wave is quite possible. The post-crisis recovery is also confirmed by the dynamics of the global portfolio assets that fell in 2008 from 39.2 to 30.8 trillion $ and then again increased to 37.2 trillion in 2009.

Second, the crisis brought about some substantial changes in the structure of global portfolio assets and liabilities. One of the most important is the sharp decrease in the share of equities in the total figure of international portfolio assets in 2008. Later this figure recovered a little in 2009. This is because the extreme rise of risks without respective increase in returns on equity markets during the crisis brought about the shift of international portfolio investors to less risky debt securities or investors just refused to invest or even withdrew their investments. Many investors driven particularly by home bias shifted their holdings from international to domestic as-

sets. As the risks diminished after the crisis the share of equities began to go up. On the other hand the opposite shift took place. The money market and the bond and notes market shares increased.

Third, in 2006 and 2007 the rates of equity securities share growth and the debt securities shares decrease slowed down if compared with early years. Thus we can see that these figures begin to change somewhere before the crisis and assume that their dynamics can be used to predict the crisis. There is the sharp necessity to notice when these growth and decrease rates begin to slow down so that to expect the crisis. The main task thus is to correctly estimate the time lag and the rates of increase and decrease slowing down so that we could state that the shock is approaching. But this issue requires further closer look and deep research in order to be proved or denied.

Forth, during the crisis major capital flows changed their direction from developed markets to less developed countries, since the risks in the first rose extremely without respective rise of returns. Instead of less developed markets as well suffered from risks growth but still had much higher returns. The crisis also brought about the shift from privately issued securities to public sector debt papers in all market segments.

Fifth, the close to Ukraine European Monetary Union has also recovered after crisis. Most global crisis and after-crisis trends can be completely confirmed by the example of the EMU. The structural changes also correspond to global trends and structural changes in the world market. The shifts in the post-crisis risk profile have brought about the decrease in risks and the increase in business activity. This in turn brought about the investors' return to more risky equity securities. Less risky bonds, notes and money market instruments that were much more popular during the crisis now have given way to stocks.

In 2011 we observe some opposite shifts. The share of equities (the rate of growth) dropped a little – from 39.5 % to 39.3 % with the simultaneous growth of the respective figure for bonds and notes – from 52.2 % to 52.5 %. This allows us to make the following assumption. If our thesis about the definite changes in the risk profile and the respective structure of international portfolio investment flows changes before, during and after the crisis is right then we can forecast the instability in the global financial market especially concerning the problems with liquidity. In order to make such forecasts further research is required. And that completely corresponds to the dominating nowadays expectations of the second crisis wave. If our assumption is true and if we accept that the second crisis turn will actually occur then such method of crisis forecasting can be correct and is obviously true thought the problem of time lags and figures values still remains unsolved.

Sixth, from the point of view of risk and return behavior of different markets we can confirm that the years 2009 and 2010 show complete post-crisis returns renewal in all markets and in the global market. All returns are positive and rather high. Risk and return data also support the idea that the more developed the market the closer it behaves to the global market. The years 2010 and 2011 showed worse dynamics then 2009. Most returns in 2010 were lower than in 2009 and all 2011 returns were negative at all. That can be again considered as the additional evidence of the changed risk and return profile before the second wave of the crisis.

All markets risks rose extremely in the crisis 2008. The post-crisis period can be described by the risks drop for all (except Ukraine in 2009) cases. The next post-crisis year 2010 showed much more violent drop in risks thus again showing the post crisis-renewal of the field. But the year 2011 did not demonstrate the increase in risks in spite of the decrease in returns. Thus we can state that these figures do not let us to confirm the second crisis wave.

Seventh, the correlation structure of the global market testifies that the more developed the

market the more it correlates with the global market. It means that developed markets in general are much deeper integrated into the global financial market that is also supported by risk and return data. The correlations dynamics confirms that in 2008 most correlations rose and this completely corresponds to the idea of correlations increase during the crisis. In 2009 almost all figures dropped. What concerning the expectations of the second crisis wave the correlation dynamics shows us the following. In 3 of 6 cases the correlation in 2011 did not rise. All these 3 cases include correlation with Chinese market that behaved very untypically in 2011. All other cases confirm the correlation increase thus supporting the idea of approaching shock that in our case can be the second crisis wave. If we take China as an exception rather than a rule then we can the by and large accept the general case or correlations increase. Hence we can again predict the increased volatility at least though final and definite conclusion requires much wider data array and countries set.

Eighth, seeking for liquidity during the crisis foreign residents were actively selling their Ukrainian portfolio assets in 2008 and 2009. The post-crisis recovery came rather obviously in 2010 when foreign residents invested 4334 million USD in Ukrainian assets but still having not achieved the pre-crisis level of 5782 million USD. The figure for the first six months of 2011 is 3008 that is pretty high and looks like exceeding the previous one in the year end. The 2009-2011 period shows clear signs of post-crisis recovery.

The portfolio investment flows structure shows that foreign assets' of Ukrainian portfolio investors structure changed during the crisis and after it in the direction opposite to that one observed for the global market. Instead of decreasing the share of equities jumped up a little in 2008 and in 2009. And then it dropped in 2010 and 2011. Liabilities structure as well changed oppositely to the global market trend. In 2008 and 2009 the share of equities increased. Such unusual behavior can be explained by the following reasons. The crisis brought about the global shift in the geography of international portfolio flows. Seeking for lower risks with low and negative returns being observed everywhere investors moved to less developed markets. Actually Ukraine was not very popular from this very point of view. It was rather not so favorable to attract investment than to promote their structure change. And this is the second reason. The risks of default on debt securities (even sovereign and guaranteed) rose so high, that even high traditional risks of stock became more acceptable for foreign investors. Thus many of them preferred to invest rather in risky Ukrainian stocks than in highly probable defaultable debt papers. The shift from debt securities occurred particularly because of the permanently unstable political situation that makes sovereign papers totally unacceptable for foreign investors. All this means that Ukrainian market substantially differs from the global market from the point of view of the portfolio flows structure. Thus the typical methods and approaches to global market analysis can slightly be used in Ukrainian realities.

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REGIONAL AND LOCAL CAPITAL MARKETS IN A MODERN WORLD

1. The high mobility of capital, as a result of internationalization and globalization.

We have lived already a little more than a decade in the XXI century. and all this time most of us even have not noticed how many people, regions, states and the world as a whole have become, as to say more closely tied together, more integrated into this process of unification, globalization. We perceived it as something ordinary, that was happening without our participation and had no significant impact on our daily lives, but that was a false perception. All political, social, economic and cultural development of our world, especially in the period of the 1980s had been occurring in the light of globalization.... Its economic component associated primarily with the sources, factors and forms of economic development. It is about capital flow, investments, workforce, technology, intellectual resources and about management and marketing. There took place growth in international trade and investments, also the process of diversification of world financial markets and the workforce reached unprecedented proportions. Substantially increased the role of MNCs in global economic processes, global competition became a new, more active and sharpened character, appeared a system of global strategic management. So, let's consider the globalization, its main characteristics and features as the socio-economic process.

Globalization - the product of the era of postmodern transition from industrial to postindustrial stage of economic development, forming the foundations of the new period of our civilization where the main value will be knowledge, or as some scientists call it - noosphere and space era. The qualitative and quantitative traits and indicators of the deployment of this process therefrom. Among the most important should be called the growing interdependence of economies of different countries, increasing the integrity and unity of the world economy also increases the threat of global nuclear catastrophe, the onset of the greenhouse effect, interference with nature through genetic engineering, cloning and more. The growth of new global communication networks through the introduction of advanced information technology, electronic communication systems leads to the implementation of many of them outside state control. Modern

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