

# ASYMMETRY IN THE FUNCTIONING OF UKRAINIAN AND FOREIGN BANKING SYSTEMS IN THE CONDITIONS OF GLOBALIZATION

Mariya Khmelyarchuk, Yurii Kozlovskiy\*

*Lviv Banking Institute of the University of Banking of the National Bank of Ukraine*

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**Abstract.** *The article concentrates on the empirical substantiation of manifestations of asymmetry in the functioning of banking systems of different countries in the conditions of globalization, focusing attention on the functioning features of the banking system of Ukraine. According to the materials from the World Bank, asymmetric effects have been revealed in the functioning of national banking systems in terms of the indicators of their activities (capital ratio to assets, a share of nonperforming bank loans, interest rates on loans, and interest rate spread) as well as the percentage of the private sector bank crediting towards the GDP. The attention is focused on the fact that the effective functioning of the banking system of Ukraine is limited by high credit risks, ultra-high interest rates which, in addition to the political and economic instability in Ukraine, do not contribute to the post-crisis recovery of the national economy. The measures for overcoming the significant asymmetries in the functioning of the banking system of Ukraine in comparison with the banking systems of the developed countries have been offered.*

**Key words:** *banks, national banking systems, globalization, asymmetries*

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## 1. Introduction

The growth of globalization processes at the modern stage objectively analyzes the research of the forms of its expression in all spheres of social and economic development, including the one in the financial sphere. In its turn, the financial globalization which, first of all, manifests itself by the liberalization of financial markets and by the internationalization of financial services, objectively leads to relevant changes in the banking industry, which traditionally, along with the stock market, are considered to be locomotives of the financial globalization. So, under the conditions of the increasing competition in the world financial market, the banking practice in most countries is increasingly moving closer, promoting standardization of the national banking systems, accompanied by activation of such processes as mergers and acquisitions, and by the increase of the number of transnational banks. Firstly, these processes obviously contribute to strengthening the banks' funding base, and, secondly, encourage their operation

\* *Corresponding author:*

Financial-Economic Faculty, Lviv Banking Institute of the University of Banking of the National Bank of Ukraine, Sichovyh Striltsiv Str., 11, Lviv 79000, Ukraine.

E-mail: mkhmelyarchuk@ukr.net

in more transparent, efficient and competitive environment of the modern globalized financial system.

At the same time, the globalization processes, as we know, are characterized by a considerable inconsistency and ambiguity, which accordingly affects the processes of financial globalization and development of national banking systems under such conditions. It is primarily referred to the presence of significant differences in the functioning of the banking systems of different countries, which is reflected in the considerable volatility of financial market, adversely affecting the functioning of capital markets, borrowing and lending opportunities, generating the increase of crisis phenomena in the economy.

Under the conditions of economic crisis exacerbation in Ukraine, the growing economic openness of Ukraine and the integration of its domestic banking system into the international financial sector, the relevance of the research of features of the development of national banking systems of different countries from the position of overcoming the asymmetry in their functioning and convergence of the domestic banking system to the standards of functioning of the banking systems of developed countries increases.

## **2. Review of theory and literature**

The inconsistency and ambiguity of the processes of financial globalization at the modern stage is the subject of research for a lot of scientists. Thus, positive features and disadvantages of the financial globalization occur under the conditions of the liberalization of financial markets at the request of international financial institutions and have an ambiguous impact on the functioning of national banking systems in developing countries, as J. Stiglitz notes (2002). J. Peek and S. Rosengren (2000) study the positive features and risks of growth of the presence of foreign banks in the national financial markets in the conditions of globalization, using the experience of the countries of Latin America (R. De Haas, 2014), using the experience of Central and Eastern Europe (J. Clarke, R. Cull, M. Martinez-Peria, 2001) on the example of developing countries.

At the same time, S. Claessens and N. Van Horen (2014) focus attention on the fact that the world financial crisis to some extent has suspended the processes of internationalization in the banking activities and actualized the need for standardization of international approaches to the regulation and supervision of the activities of banks. Therefore, the crisis significantly escalates the issue of information asymmetry between a lender and a borrower, which leads to increased bank risks, rise in loan interest and interest margin, and thus to credit rationing (Stieglits J., Weiss A. (1981)) which in aggregate exacerbates the economic crisis.

Moreover, N. van Horen (2014) also emphasizes that the world financial crisis has deepened the asymmetries in the development of banking systems in different countries, as well as reflected the increasing role of the banking systems of developing countries in the world financial system.

The globalization inconsistency creates relevant discussions among Ukrainian scientists as well (A. Baranovskiy (2007), V. Heyets (2007), T. Smovzhenko, V. Mishchenko (2007), O. Drugov (2008), O. Chub (2009)) related to the feasibility of the further financial liberalization, increase of the presence of foreign capital in the banking sector, and the prospects for the integration of the domestic banking system in the world financial environment. Moreover, the political and economic crisis in Ukraine and the fundamental importance of the banking system in providing the national economy with credit resources actualize the empirical studies of the functioning of banking systems of different countries and Ukraine in terms of overcoming the global asymmetries and the approach of the domestic banking system to the advanced international standards for its effective functioning.

**The aim** of the article is to justify the manifestation of asymmetry in the banking systems of different countries in the context of globalization, placing an emphasis on the features of the banking system of Ukraine amid a growing transparency of national economy and European integration of the foreign economic policy.

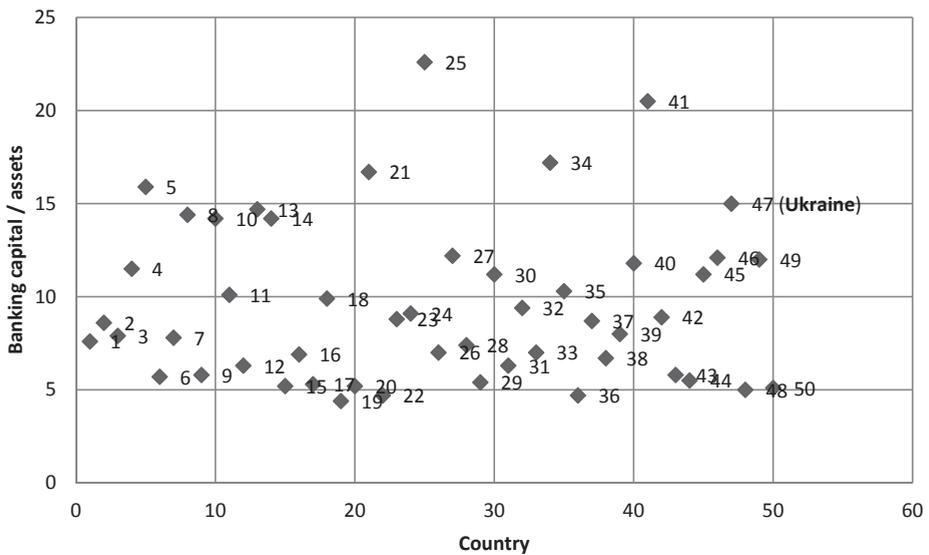
For this purpose, the following economic and statistical methods are applied in the article: the method of generalized indicators to analyze the performance of the Ukrainian and foreign banking systems, analysis of variation and distribution structure to determine the manifestations of asymmetry in the functioning of national banking systems, time series analysis to identify the tendency and prediction of the banking system of Ukraine.

### **3. Empirical assessment of manifestation of asymmetry in the functioning of national banking systems of different countries of the world**

The starting point of the comparative analysis of the functioning of the banking systems of different countries under the conditions of globalization and post-crisis recovery of the world economy, in our opinion, shall be the assessment of the reliability and stability of their functioning on the basis of the analysis of the relevant indicators. One of these indicators, which is declared by the World Bank in the context of the countries and was first introduced by the Basel Committee on Banking Supervision within Basel III, is the ratio of capital to assets without consideration of the risks known as the leverage ratio. This parameter is introduced to control the ratio of equity capital and debt capital by restricting banks from excessive risks and their pass-through to creditors and depositors. Thus, the higher is the value of this parameter, the larger the proportion of risk undertaken by the owners of the bank; and on the contrary, the lower is this index, the greater is the risk load incurred by bank lenders / depositors (assuming that the ratio of tier I capital to total assets should constitute at least 3%).

From these perspectives, we have analyzed the ratio of bank capital to assets for banking systems of different countries according to the data of the World Bank in 2013

(see Fig. 1). In Fig. 1 we can see that the estimated values of this indicator significantly differ by country, ranging from 4.4% in Finland up to 25% in Iceland. The value of this indicator for Ukraine is relatively high (higher than the average values representing approximately 9%) and is 15%, which is close to the relevant values in the post-soviet and post-socialist countries (Belarus 14.4%, Armenia 15.9%, Georgia 16.7%, Bosnia and Herzegovina 14.2%, Croatia 14.2%), while the low values of the indicator are observed in many developed countries, including the following: Austria – 7.8%, France – 5.2%, Switzerland – 5.5%, UK – 5%, Spain – 5.8%, etc.



1	Afghanistan	14	Croatia	27	Indonesia	40	Russia
2	Albania	15	Cyprus	28	Ireland	41	Serbia
3	Algeria	16	Czech Republic	29	Italy	42	Singapore
4	Argentina	17	Denmark	30	Latvia	43	Spain
5	Armenia	18	Estonia	31	Luxembourg	44	Switzerland
6	Australia	19	Finland	32	Malaysia	45	Thailand
7	Austria	20	France	33	Malta	46	Turkey
8	Belarus	21	Georgia	34	Moldova	47	Ukraine
9	Belgium	22	Germany	35	Montenegro	48	England
10	Bosnia and Herzegovina	23	Hong Kong	36	Netherlands	49	USA
11	Bulgaria	24	Hungary	37	Poland	50	Canada
12	China	25	Iceland	38	Portugal		
13	Colombia	26	India	39	Romania		

FIG. 1. Ratio of banking capital to assets, %

Source: author's calculations according to the data of the World Bank (2013 a).

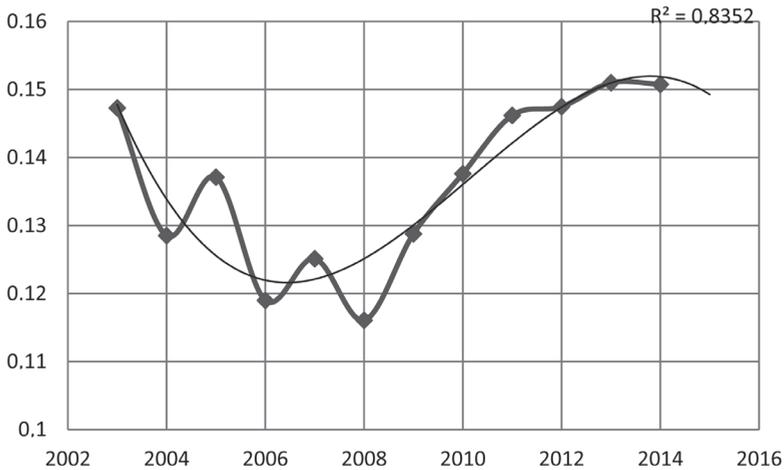


FIG. 2. Dynamics of the indicator for the ratio of banking capital to assets in Ukraine, %  
 Source: author's calculations according to the World Bank.

So we can see that there is a significant asymmetry as to the level of risk of the banking business in different countries. The mean square deviation of the studied indicator is 4.3, as its importance for Ukraine is close to the upper limit of the value of this interval (13.9). Moreover, the coefficient of variation for a given total is 45%. Therefore, we can conclude that the value of the indicator of the ratio of the bank capital to assets for Ukraine is within the standard deviations, although it is somewhat overestimated in relation to the mean value.

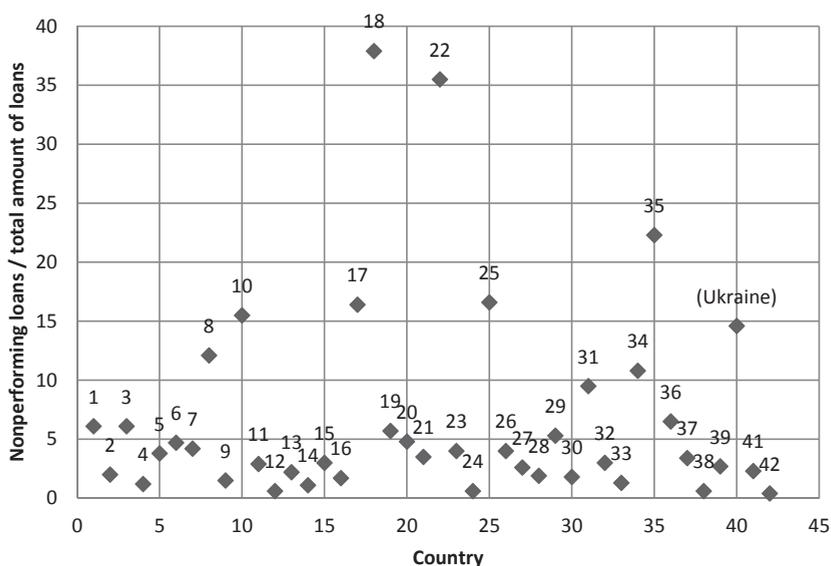
Thus, the results of the analysis of the ratio indicator of the banking capital to the assets showed a significant asymmetry of the functioning of national banking systems of different countries according to this indicator, and the fact that Ukraine significantly exceeds the mean value of the studied parameter, as the assets of domestic banks in relatively large amounts are provided by own capital. Such situation is generally a sign of low-risk banking business in Ukraine if compared with other (especially highly developed) countries, which is largely due to stringent regulatory standards introduced by the National Bank of Ukraine (NBU).

However, the analysis of the dynamics of the ratio of bank capital to assets in Ukraine indicates that in recent years there is a tendency to reduce the rate of its growth, and the trend line makes it possible to conclude the further reduction in this indicator (Fig. 2).

To make the trend equation, a nonlinear polynomial approximation is used. The curve shown in Fig. 2 is described by the polynomial of the third degree, which is as follows:  $y = -0.0002x^3 + 0.919x^3 - 1847x + 1E06$ , with the determination coefficient  $R^2 = 0.835$  proving the adequacy of the chosen model (*the results are received by using the Statistica 10 application*).

This situation, in our view, is a clear evidence of the tendency towards the gradual convergence of the domestic banking system to that of its functioning indices in developed countries. However, the slow pace of the convergence is due to the political and economic crisis in Ukraine and bank risks rising in this regard. As a result, a foreign capital flight from the banking system of Ukraine has occurred in the recent years (the share of foreign capital in banks decreased from 41.9% in 2012 to 32.5% in 2015).

As an argument to the aforesaid, there may serve the analysis of the following indicator: the ratio of nonperforming loans to the total amount of the loans granted by the banks of different countries of the world, on the contrary, certifies the relatively high risks in the activities of domestic banks, particularly in the main sphere of their activity – bank lending (see Fig. 3).



1	Afghanistan	15	Colombia	29	Latvia
2	Argentina	16	Costa Rica	30	Malaysia
3	Armenia	17	Croatia	31	Malta
4	Australia	18	Cyprus	32	Netherlands
5	Austria	19	Czech Rep.	33	Norway
6	Belarus	20	Denmark	34	Portugal
7	Belgium	21	Georgia	35	Romania
8	Bhutan	22	Greece	36	Russia
9	Bolivia	23	Honduras	37	South Africa
10	Bosnia and Herzegovina	24	Hong Kong	38	Sweden
11	Brazil	25	Hungary	39	Turkey
12	Canada	26	India	40	Ukraine
13	Chile	27	Israel	41	USA
14	China	28	Japan	42	Uzbekistan

FIG. 3. Bank nonperforming loans to total gross loans, %

Source: author's calculations according to the data of the World Bank (2014).

Figure 3 shows that in Ukraine in 2014 the share of nonperforming loans in the total amount of the loans granted by the banks reached 16.5%, which is quite a high indicator as compared to other countries of the world. At the same time, the data of Fig. 3 are a clear indication of asymmetry in the functioning of the banking systems of different countries of the world in terms of nonperforming loans, as the values of this indicator vary in the range of 0.1–37.9%. Moreover, the lowest indicators of the level of nonperforming bank loans are observed in Macao SAR, China (0.1%), Sweden (0.6%), Canada (0.6%), Australia (1.2) while the highest rates take place in Cyprus (37.9%), Greece (33.5%), Serbia (23.0%), Romania (22.3%), Hungary (16.6%), Croatia (16.4%), Ukraine (16.5%), Bosnia and Herzegovina (15.5%).

The mean value of non-performing loans in the banks of the world is 6.8%, while the value of the studied parameters for Ukraine (14.6%), as we have already noted, is significantly higher than the mean value for the world. This obviously proves significant credit risks in the activities of domestic banks, which is one of the major factors hindering the expansion of bank lending to the national economy. Moreover, a high part of nonperforming loans is generally typical of the countries with the unstable economic situation, which experienced a significant recession due to the world economic crisis (Cyprus, Greece, Serbia, Romania, and Ukraine).

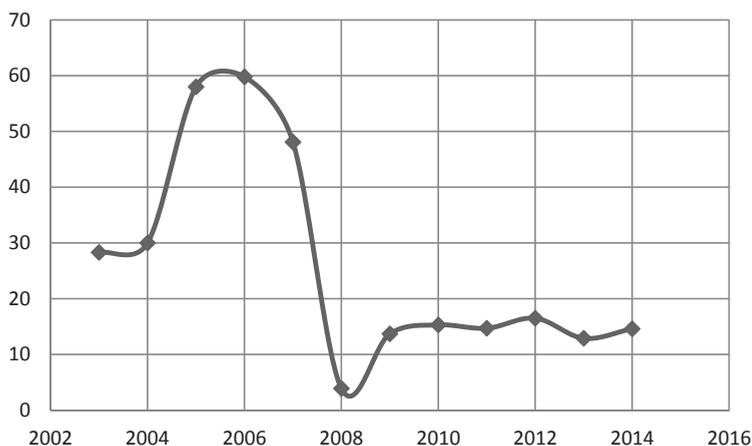


FIG. 4. Dynamics of the bank nonperforming loans to total gross loans in Ukraine, %

Source: author's calculations according to the World Bank.

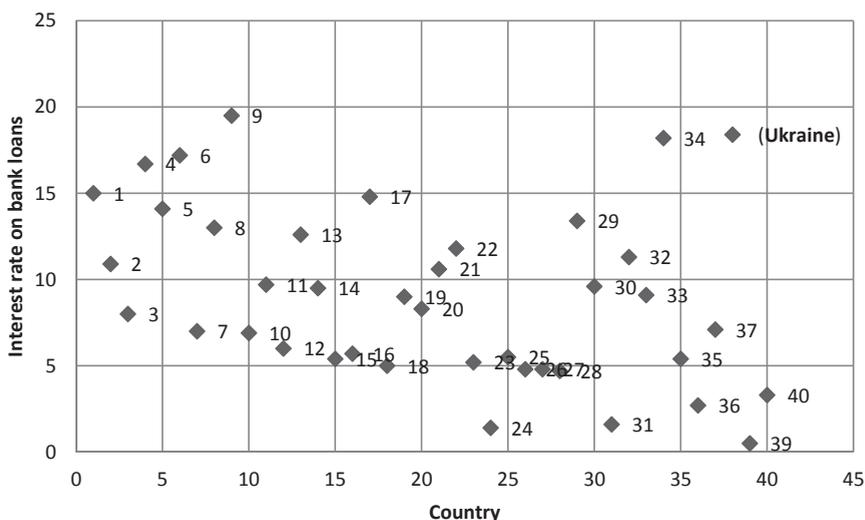
In particular, in Ukraine, the country which due to the global and national economic crises has sustained one of the largest economic recessions in the world (decline in GDP in 2009 reached 15%), analysis of the ratio of non-performing bank loans to gross loans should be divided into interim stages: before the crisis in 2008 and the post-crisis period (see Fig. 4). In the period before 2008, this indicator was several times higher than the world mean average level due to methodological differences applied to non-performing

loans recognition (up to 2007 the non-performing loans included also loans with irregular debt amounts as follows: “under control”, “substandard” “doubtful”, “bad”). From 2008 to the third quarter of 2012, the non-performing loans included also “doubtful” and “bad” loans receivable, and since the fourth quarter of 2012 they included loans classified by the IV and V quality categories being overdue for more than 3 months (these approaches are harmonized with the IMF and can be comparable with other countries). Consequently, in 2008, the ratio of non-performing loans to gross loans has declined significantly, although it still remained considerably high in comparison with developed countries. The trend indicates that we should not expect any decrease in the this indicator in coming years, it will fluctuating within the current values or increasing in the future due to the political and economic instability in Ukraine. So, obviously this situation will not contribute to the increase of domestic banks lending to the national economy in the nearest future due to the presence of high risks of bank loans default.

In its turn, high credit risks in the activities of domestic banks, the rise of inflation in terms of political and economic crisis as well as the increase of the value of the borrowed funds objectively lead to higher interest rates on loans and their high level compared to other countries (see Fig. 5).

In Fig. 5, we can see that in 2013 Ukraine had one of the world’s highest interest rates on bank loans, which amounted to 18.4%. It is obvious that such a high interest rate on bank loans in Ukraine does not encourage the growth of credit support given by the banks to the national economy. At the same time, materials of Fig. 9 show significant asymmetries in the distribution of interest rates on bank loans on the example of the countries studied. So, the lowest interest rates on loans took place in Great Britain (0.5%), Japan (1.4%), the Netherlands (1.6%), Switzerland (2.7%), and the USA (3.3%), while the highest ones took place in Belarus (19.5%), Ukraine (18.4%), Angola (16.7%), Afghanistan (15%), and Georgia (14.8%). This means that low interest rates on loans are generally typical of the developed countries with a stable political and economic situation, and high ones – to the developing countries experiencing a difficult period of political and economic transformations. We can see that the average value of the interest rate on bank loans is 9%, and the mean square deviation of the indicator values is 5. As the upper limit of the interval is the value of 14%, and the indicator for Ukraine is 18.4%, it confirms very high values of this indicator (deviation of about 50%, while an average statistical country has no more than 25%).

The level of the interest rate on bank loans is directly related to the interest rate spread, i.e. the interest margin for credit and deposit transactions of banks (Fig. 6). The materials make it possible to say that Ukraine is in the group of countries the interest rate spread of which is close to the mean value and makes 5.4%. In this case, it should be noted that the values of the studied indicator are asymmetric in terms of the countries and



1	Afghanistan	11	Bulgaria	21	India	31	Netherlands
2	Albania	12	China	22	Indonesia	32	Romania
3	Algeria	13	Colombia	23	Italy	33	Russia
4	Angola	14	Croatia	24	Japan	34	Serbia
5	Argentina	15	Czech Republic	25	Latvia	35	Singapore
6	Armenia	16	Estonia	26	Luxembourg	36	Switzerland
7	Australia	17	Georgia	27	Malaysia	37	Thailand
8	Bangladesh	18	Hong Kong	28	Malta	38	Ukraine
9	Belarus	19	Hungary	29	Moldova	39	England
10	Bosnia and Herzegovina	20	Iceland	30	Montenegro	40	USA

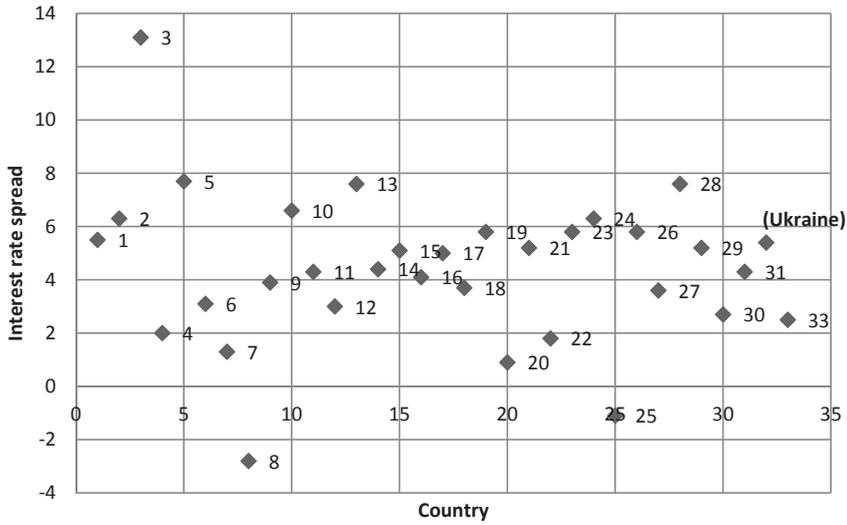
FIG. 5. Interest rate on bank loans, %

Source: author's calculations according to the data of the World Bank (2013 b).

range from  $-2.8\%$  in Belarus to  $13.1\%$  in Angola. The lowest values of the indicators are observed in Belarus ( $-2.8\%$ ), the Netherlands ( $-1.1\%$ ), and Japan ( $0.9\%$ ), and the highest ones in Angola ( $13.1\%$ ), Croatia ( $7.6\%$ ), and Serbia ( $7.6\%$ ).

The mean square deviation of the indicator values is  $4.4$  (range,  $1.6-7.2$ ). The value for Ukraine is included in the interval and is the statistically average indicator among the studied countries. Thus, the indicator value of the interest rate spread for Ukraine is within the standard deviations and, therefore, is close to the world average values. However, it should be noted that the low values of interest rate spread are typical of the developed countries, which encourages the cheapening of bank credit resources.

In Ukraine, as already emphasized, the value of the studied indicators does not exceed the European average ones, and its trend can be approximated only in the rough (Fig. 7).



1	Albania	10	Bulgaria	19	Indonesia	28	Serbia
2	Algeria	11	China	20	Japan	29	Singapore
3	Angola	12	Colombia	21	Latvia	30	Switzerland
4	Argentina	13	Croatia	22	Malaysia	31	Thailand
5	Armenia	14	Czech Republic	23	Moldova	32	Ukraine
6	Australia	15	Estonia	24	Montenegro	33	Canada
7	Bangladesh	16	Georgia	25	Netherlands		
8	Belarus	17	Hong Kong	26	Romania		
9	Bosnia and Herzegovina	18	Hungary	27	Russia		

FIG.6. Interest rate spread, %

Source: author's calculations according to the data of the World Bank (2013 c).

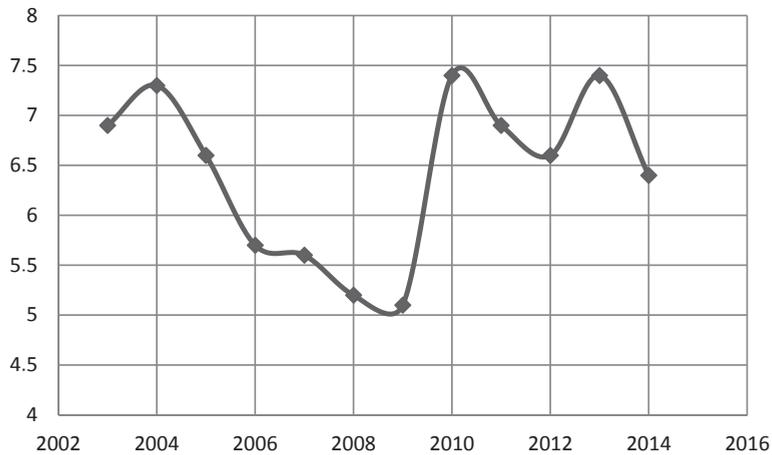


FIG. 7. Dynamics of interest rate spread in Ukraine, %

Source: author's calculations according to the World Bank.

The trend spread, though, as seen in Fig. 6, has a slight tendency to decrease with time. However, if the spread changes roughly Ukraine will leave the symmetry boundaries in terms of this indicator.

It is obvious that the high credit risks in the activities of domestic banks, as well as extremely high interest rates on loans are one of the most important factors in constraining the effective functioning of the national banking system, expanding the scale of bank lending for the national economy, and, hence, the economic recovery from the crisis. Therefore, the national banking system, being virtually the only creditor of the national economy, does not provide an adequate credit support for the latter; in other words, it does not exercise a full-scale function of a trigger for socio-economic processes in the country. Hence, in Ukraine, if compared to many developed countries with the bank-oriented model of the financial system development (most countries – EU member states and Japan), we have a small percentage of the private sector bank crediting towards the GDP (see Fig. 8).

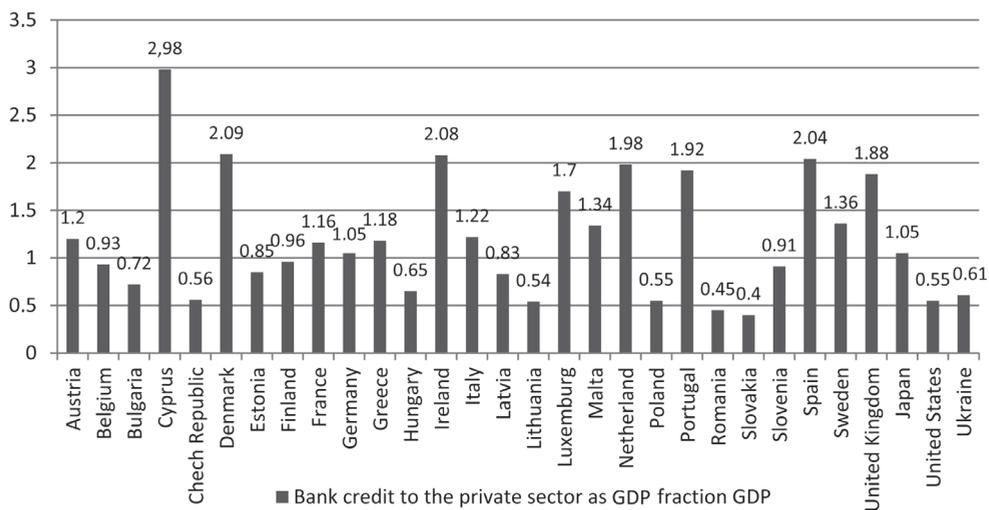


FIG. 8. Bank credit to the private sector as fraction to GDP

Source: author's calculations according to Bijlsma, M. J., Gijsbert T. J. Zwart (2013), to the National Bank of Ukraine (Національний банк України (2014) and to State Statistics Service of Ukraine (Державна служба статистики України (2014)).

Figure 8 shows that in most highly developed countries, the EU member states, and in Japan the share of bank lending if compared to GDP constitutes over 100%, while in Ukraine it is only 61%. Moreover, this situation is typical not only of Ukraine, but also of the new EU member states being former socialist countries, like Bulgaria in which bank crediting constitutes 72% of GDP, in the Czech Republic – 56%, in Estonia – 85%, in Hungary – 65%, in Latvia – 83%, in Lithuania – 54%, in Poland – 55%, and in Roma-

nia – 45%. The percentage of the private sector bank lending to the GDP is also relatively low in the US (only 55%). However, it is well known that the US is not a country with a bank-oriented system of finance, thus the situation cannot serve as the aspect indicating virtually economy funding on a credit basis in this country.

In Ukraine, the dynamics of the bank credit to GDP ratio is described by a polynomial dependence, which is described by the following equation:  $y = -0,0091x^2 + 36,57x - 36760$ . The coefficient of determination  $R^2 = 0,975$ , which indicates the adequacy of the suggested approach. The expected results that are obtained on the basis of the created dependence indicate that in the future this indicator will slightly decrease (Fig. 9).

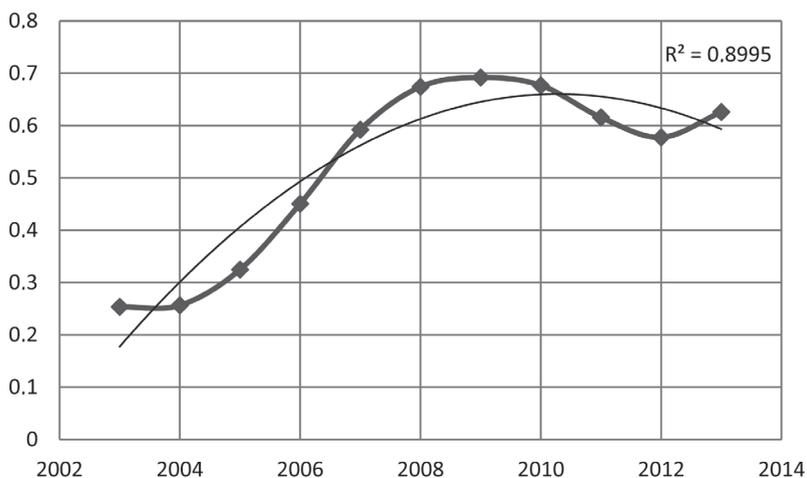


FIG. 9. Dynamics of bank credit to the private sector as a fraction to GDP in Ukraine

Source: author's calculations according to the World Bank.

This tendency is quite negative due to the fact that in the developed countries the ratio is significantly higher. However, in the context of the deteriorating political and economic crisis in Ukraine in 2014 as well as the military conflict in the East of Ukraine, the forecasts for growth in bank lending to the national economy and post-crisis recovery of the national economy in the nearest future are rather unfavourable.

#### 4. Conclusions

Thus, summarizing the analysis of the operating of domestic banking systems of different countries according to their activity indicators (capital ratio to assets, a share of nonperforming bank loans, interest rates on loans, and interest rate spread), as well as the volumes of bank credits compared to GDP, clearly expressed tendencies of asymmetry can be stated in their functioning. Moreover, as the materials of the analysis showed,

the efficient functioning of the banking system of Ukraine is limited by a high credit risk and ultra-high interest rates that are important constraining factors for credit growth of the national economy. The aforementioned reasons, in addition to political and economic instability in Ukraine, do not contribute to the post-crisis recovery of the national economy.

Overcoming significant asymmetries in the functioning of the domestic banking system in comparison with the banking systems of the developed countries, in our opinion, is possible on the basis of making a complex of reforms aimed both at the further harmonization of the standards of prudential supervision over the activities of the domestic banks with international standards and rules (implementation of the Basel III standards), aimed at the full-scale scope and coverage of risks through increasing requirements to capital charge and at the implementation of system sector reforms of the national economy, the successful implementation of which will contribute to the political and economic stabilization in Ukraine and, thus, to the increase of the confidence in the domestic banking system and of its role in the processes of stimulation of the social and economic development of Ukraine.

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