




# “Actual problems of the capital stability management in the Ukraine’s banking system”

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## Actual problems of the capital stability management in the Ukraine's banking system

### Abstract

Capital stability of the banking system is the basis of its effective development and realization of its main function – optimal redistribution of capital. So, the aim of the article is to develop indicators of capital stability of the banking system, and to propose the frameworks for the long term capital stability strategy of the banking system in Ukraine. For this purpose, the analysis of micro- and macroeconomic indicators of the capital stability of domestic banks within the period 2007–2016 is made. To carry out the research, there were used the statistic data of the National Bank of Ukraine, its legislative and regulatory documents, the Basel Accords.

Capital stability of the banking system has been defined in the article as the process of ensuring capitalization that is adequate to the banking risks and cyclical economic development. It has been detected that a significant reduction in return on equity of the Ukrainian banks in 2014–2015 even with restoring their liquidity has had a crucial destabilizing impact on their capital stability. In order to improve the assessment of capital stability, its key indicators for the groups of domestic banks have been studied. The necessity of refocusing macroprudential requirements of the National Bank of Ukraine from quantitative indicators to qualitative ones to ensure economic development has been proved. It has been concluded that a necessary condition for restoring the Ukrainian banking system was to develop an effective strategy for ensuring its capital stability, which should be focused on the creation of its diversified structure.

**Keywords:** banks, banking system of Ukraine, capital stability, capital adequacy, qualitative and quantitative indicators of the capital stability, small banks.

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### Introduction

The economic crisis, devaluation of national currency, systemic banking crisis that were taking place in Ukraine in 2014–2016 have become a source of further instability and slowdown of the national economy, rising unemployment, deepening poverty, and aggravation of social and political risks. During that period, 84 out of 180 banks operating at the end of 2013 became insolvent and forfeited their licenses. The withdrawal of banks from the market, among other things, reduced the banking system's capital by 46%: from 192.6 billion UAH at the beginning of 2014 to 104 billion UAH at the end of 2016 (Natsionalnyi bank Ukrainy, 2017a). Further reduction of the number of banks may deepen the structural problems of the Ukrainian economy – its oligopolization, and increase capital concentration of foreign-owned banks in particular, including banks with Russian capital. This exacerbates systemic risks for the national security of Ukraine.

Overcoming these risks requires building a strong and financially stable banking system that will effectively perform its basic function – optimal redistribution of capital to finance the accelerated economic development and welfare in general. So the problem of increasing capital adequacy of domestic banks becomes significant. It requires researching and improving mechanisms to ensure capital stability of domestic banks, that is, the basis of their financial stability, on the one hand, and the basis for implementation by banks of their functions for further effective development of the domestic banking system, on the other hand.

### 1. Literature review

The problems of banks' capital and its adequacy have been the subject of research by many scientists. Diamond and Rajan (2000) analyze the structure of bank's capital and its impact on the ability of banks to create liquidity, to withstand crises and to get the repayments from the borrowers. The model developed by the authors indicates the side effects of capital regulation's requirements and deposit insurance. Benston, Irvine, Rosenfeld, and Sinkey Jr. (2003) examine the use of the trust-preferred securities by bank holding companies. These financial instruments were qualified by Federal Reserve as Tier 1 capital, so their issue allowed fulfilling regulatory requirements. Barrios and Blanco (2003) describe two theoretical models that demonstrate the existence of an optimal capital ratio (the rate of equity capital over assets) for banks, and that have been tested using the data on Spanish banking system. Van Hoose (2007) indicates the impact of

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bank capital regulation on enhancing procyclicality, macroeconomic outcomes and monetary policy transmission mechanism. Berger and Bouwman (2013) analyze the role of the equity capital in the survival of the banks and increase of their market share under different economic situations. The result is that capital helps small, medium and large banks to increase their profitability during bank crises. Cohen and Scatigna (2016) study the adjustment process to Basel III by way of example of 94 banks from advanced and emerging economies. They conclude that banks accumulate retained earnings to increase their capital ratios. The banks with higher capital ratios are able to expand lending more. The same conclusion is made by Gambacorta and Shin (2016) who state that bank's equity is an important factor of both decreasing funding costs and lending growth.

Kovalenko (2010), Kovalenko and Cherkashyna (2010) indicate that ensuring of bank's financial stability and competitiveness needs assessing the amount of capital to absorb the risks taken by the banks as a result of their activities, and possible losses. So it's necessary to maintain equity at a level sufficient to perform bank's functions. It requires overcoming the contradictions between liquidity, reliability and profitability of the bank on the basis of optimization of the borrowed and owned capital ratio (the financial leverage) which reflects a certain level of risk and affects the financial stability of the bank. Savluk (2009, 2013) studies the problems of increasing the capitalization of the banking system of Ukraine, focusing on the system of incentives of this process, which consists of internal and external stimuli. On the basis of analyzing the lessons of crises 2008–2009, the author indicates the basic causes of failure of the mechanism to ensure the stability of banks. He gives reasonable proposals to improve the procedure of forming its equity combined with ensuring the liquidity and solvency. The team of authors led by Yepifanov and Vasilieva (2012) has concluded that none of the existing approaches and indicators has met the requirements of full and systematic evaluation of the bank's capital stability. Their main shortcomings include the inability to predict with a high degree of accuracy the insolvency of banking institutions on the basis of these calculations. Mishchenko (2013), summarizing the new capital requirements for banks under Basel III, highlights three main areas – restructuring of bank equity (which includes Common Equity Tier 1, Additional Tier 1, and Tier 2 capital), increased capital adequacy requirements (taking into account new additional regulations on Tier 1 capital adequacy) and creation of capital protection buffers. It is noted that financial systems reinforce the cyclicity of the economies; this requires their relevant countercyclical regulation. However, the main purpose of introducing new standards for bank capital and liquidity is to improve transparency, quality, and structure of bank capital taking into account systemic risk in

the banking system. The team of authors led by Prymostka (2015) studies targets and indicators of banking system capitalization. They propose to stimulate further capitalization of domestic banks through consolidation and concentration of bank capital. To ensure the financial security of the Ukraine's banking system, they propose to refocus monetary policy of the National Bank of Ukraine (NBU) from supporting nominal stability to stimulating sustainable economic growth.

**The aim of the study** is to develop indicators of capital stability of the banking system, and to propose the frameworks for the long term capital stability strategy of the banking system in Ukraine.

## 2. Results and discussion

The National Bank of Ukraine states that the banking crises in 2008–2009 and 2014–2016 were caused not only by objective destabilizing non-monetary factors (military conflict and Russia's annexation of part of the Ukrainian territory, financial imbalances, and social and economic tension), but also by shortcomings in the regulation and supervision. It is noted that the degradation of banks' loan portfolios led to the need for so-called "cleaning" of the banking system (Natsionalnyi bank Ukrainy, 2015), which began in 2014 and continued until the end of 2016. Further development of the financial sector is constrained by the banks with low capitalization that do not intend to serve as financial intermediaries, generate significant systemic risks, and have low standards of solvency and liquidity management.

The study of banks' capital stability has to be based on optimizing the equity's amount and structure, which are adequate to risks taken by the bank. It is necessary to evaluate the capacity of the bank to absorb financial losses on the basis of both economic and institutional mechanisms for preserving quality bank capital in crisis, as well as its increase in post-crisis and other business cycle phases. So, the capital stability of the banking system is understood as its sufficient capitalization considering risks and cyclical economic development. We mean the qualitative characteristics of transformation of added value into bank capital, and building the structure that will allow banks to withstand external and internal influences, maintain a stable equilibrium and solvency over time.

**2.1. Analysis of the main trends of capital stability of the banking system of Ukraine.** Financial instability of a significant number of domestic banks is a major threat to the financial stability of the banking system of Ukraine. However, domestic and international experts do not explain the recent world financial crisis by the realization of individual banks' risks, but by the accumulation of systemic risks caused by contradictions between the nature of financial flows

and fragmented financial regulation. One of the main threats to financial stability is just the lack of domestic banks' equity to absorb the risks during the crisis and for economic growth in the post-crisis period. As the data presented in Table 1 point out, the ratio of

bank equity to GDP was for the past 10 years at its minimum by the end of 2016 (5.19% vs. 13.24% in 2013). The indicator of adequacy of domestic banks' regulatory capital also reached the minimum – 12.31% in 2015, and 12.69% in 2016.

Table 1. Macro- and microeconomic indicators of the capital adequacy of the banking system of Ukraine in 2007–2016\*, %

Name of indicator	01.01.2008	01.01.2009	01.01.2010	01.01.2011	01.01.2012	01.01.2013	01.01.2014	01.01.2015	01.01.2016	01.01.2017
Macroeconomic indicators										
1. Bank equity to GDP ratio	9.65	12.58	12.61	12.72	11.94	12.00	13.24	9.33	5.22	5.19
2. Foreign capital to bank authorized capital ratio	35.00	36.70	35.80	40.60	41.90	39.50	34.00	32.50	43.30	48.84
3. Adequacy of regulatory capital (no lower than 10%)	13.92	14.01	18.08	20.83	18.90	18.06	18.26	15.60	12.31	12.69
Microeconomic indicators										
4. Bank equity to assets ratio	11.61	12.88	13.08	14.62	14.75	15.02	15.07	11.24	8.27	9.85
5. Bank equity to liabilities ratio	13.13	14.78	15.05	17.12	17.30	17.68	17.74	12.66	9.01	10.93
6. Bank authorized capital and equity capital ratio	61.62	69.14	103.49	105.90	110.53	103.48	96.18	121.70	199.00	334.99
7. Bank equity to deposits ratio	25.26	33.39	35.42	33.21	31.58	29.89	28.80	21.84	14.68	15.34
8. Return on equity	12.67	8.51	-32.52	-10.19	-5.27	3.03	0.81	-30.46	-51.91	-116.74

\* calculated on the basis of key performance indicators of Ukrainian banks (Natsionalnyi bank Ukrainy, 2017a).

The dynamics of microeconomic indicators of capital stability of the banking system of Ukraine in 2008–2016 shows the unbalanced growth of assets and equity. So the latter fail to absorb key financial risks (minimum ratio of equity to assets of domestic banks in the reporting period was 8.27% in 2015, and 9.85% in 2016). Also in the crisis period (2014–2016), there has been a significant decline in equity protection of bank deposits (14.68% in 2015 compared with 35.43% in 2009 when the maximum rate of this indicator was observed) and of all their liabilities (9.01% in 2015 (minimum) compared with 17.74% in 2013 (maximum)). At the same time, there took place the extensive growth of Ukrainian banks' authorized capital in order to fulfill regulatory requirements (concerning minimum amount of authorized and regulatory capital), which resulted in a significant excess of the authorized capital over the amount of equity. As can be seen from Table 1, this exceeding was almost 2 times in 2015, and more than 3 times in 2016.

It can be explained, above all, by ineffective credit risk management, which is indicated by the increase in the share of overdue loans in total credit portfolio of domestic banks from 7.7% in 2013 and 13.5% in 2014 to 22.1% in 2015 and 24.3% in 2016 (Natsionalnyi bank Ukrainy, 2017a). It has caused the increase of provisions for active bank operations, and had a negative impact on Tier 1 capital of domestic banks.

Thus, one can indicate a crisis situation in the domestic banking sector in 2014–2016. There was a significant decrease in key macro- and microeconomic indicators of capital adequacy of Ukraine's

banking system, which reached their lowest level in 10 years. It characterizes critical capital instability of the domestic banking sector in the end of 2016, and its actual failure to ensure country's economic growth in the post-crisis period.

**2.2. Main factors influencing the indicators of capital stability of the Ukraine's banking system.** Identifying the dynamics of bank capital adequacy as a key indicator of its capital stability, it is necessary to consider its dependence on profitability and liquidity of banking which are graphically displayed in Figure 1.

The data show that in 2011–2013, which were characterized by growing confidence in banks and national currency as a store of value, the ratio of equity to assets reached maximum (15.02% in 2012, and 15.07% in 2013) with the corresponding positive return on equity ratio and increase in liquidity. So, in this period, capital stability of domestic banks was ensured by sufficient profitability of their performance together with the observance of liquidity requirements.

But during the crises of 2007–2008 and 2014–2015, when we observe critical decline in bank liquidity ratio followed by the problems with repayment of deposits and timely payments, the capital adequacy of Ukrainian banks has reached a minimum. A significant decline in profitability of the banking system took place at the end of 2016 (-116.74%) together with an extraordinary increase in the liquidity of banks (44.18%). On the one hand, this situation displays a classic conflict between the objectives of investors (liquidity requirements) and the ones of

shareholders (the desired yield). On the other hand, it has resulted in the loss of capital stability. The lack of earnings as a real internal source of bank capitalization had a significant negative effect on the capital adequacy indicated poor financial management, which as it was proved by many authors

(Swanepoel and Smit, 2016; Chmutova, 2015), played a crucial role in ensuring bank efficiency. So, a significant reduction in return on equity of Ukrainian banks in 2014–2015 even under restored liquidity had the main destabilizing effect on the capital stability.

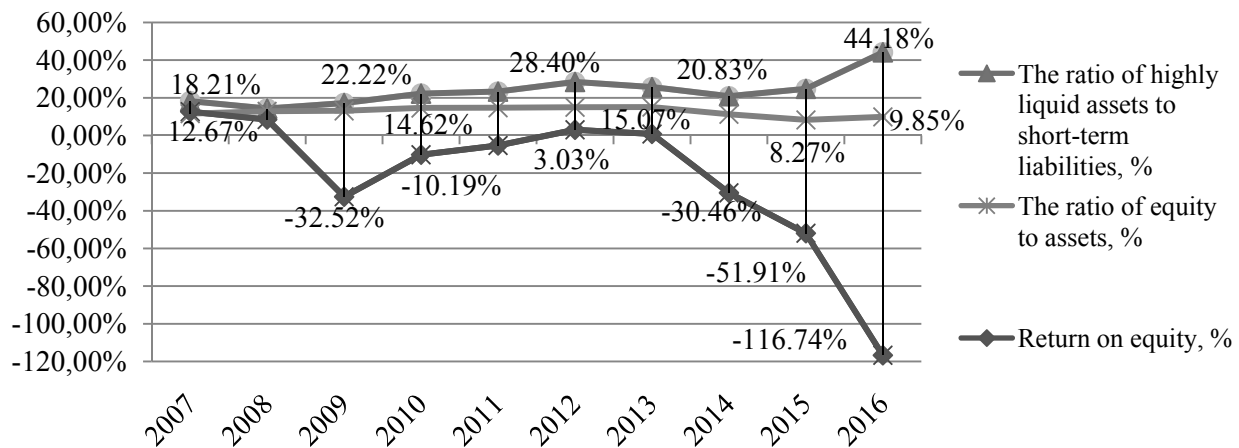


Fig. 1. Dynamics of basic factors that determine variations of capital stability of Ukrainian banks in the period of 2007–2016, %

**2.3. Quantitative and qualitative aspects of providing capital stability in the Ukrainian banking system.** Capital adequacy is the basis of the bank capital stability. In international practice, it is considered from the two points of view based on Basel I guidelines, which later were improved in the principles of Basel II and Basel III, in particular:

- ♦ quantitative institutional aspect under which each bank as a public institution that has a banking license must have a certain minimum amount of authorized capital (500 million UAH) and regulatory capital (200 million UAH by 11 July 2017);
- ♦ regulatory quality aspect, which reflects the overall assessment of the bank reliability based on capital adequacy to the scale and risks of bank operations by the ratio of equity to bank risk weighted assets (R2 and R3 regulatory standards (Natsionalnyi bank Ukrainy, 2001).

If we take into account only the quantitative aspect of capital adequacy of Ukrainian banks, we can say that at the beginning of 2017, more than 60% of state-owned banks and banks of foreign banking groups followed the regulatory requirements. But the authorized capital of 61.3% of domestic private banks has not reached 200 million UAH. On the whole, only 30.1% of all banks followed the applicable regulatory requirements for the minimum amount of authorized capital. This testifies the lack of domestic banks' equity, and the need to accelerate the concentration of capital on the basis of the procedures of reorganization, including mergers, that will increase the capitalization of the banking sector. For this purpose, the NBU proposed the draft law "On the simplification of

procedures of capitalization and restructuring of banks" (Natsionalnyi bank Ukrainy, 2017b). However, just mergers (friendly takeovers) of the banks did not become a real phenomenon in Ukraine. The owners prefer to sell banks to foreign investors, and to invest money in other spheres of business.

According to the data in Table 1, the share of foreign capital in the authorized domestic banks' capital had a volatile upward trend over the past 10 years, and has reached almost 50% at the end of 2016. It indicates significant dependence of the domestic banking system on foreign capital.

Analyzing the quality aspect of capital adequacy according to the data in Table 2, one can conclude that just domestic private banks having authorized capital to equity ratio in the crisis years of 2015 and 2016 less than 100.0% (84.36% and 93.70%, respectively) demonstrated the highest quality level of capital stability for all basic indicators. Banks with state ownership and ones of foreign bank groups had several times worse capital stability indicators' value.

Moreover, other groups of banks in 2016 could improve the value of all indicators of capital stability, while the state-owned banks have increased capital loss ratio to catastrophic level (-356.16%). It indicates both the poor risk management of domestic state-owned banks, and their increasing dependence on public budget funding without own sources of funding. For the year 2015, state bank Ukreximbank had the negative value of equity. At the same time, the group of banks with state ownership at the end of 2016 demonstrated the highest level of equity concentration due to Privatbank's nationalization.

Table 2. Key capital stability indicators of the groups of solvent banks of Ukraine in 2016\*, %

Name of indicator	01.01.2016	01.01.2017
<b>1. Equity to assets ratio:</b>		
◆ banks with state ownership	2.58	5.91
◆ banks of foreign bank groups	7.48	14.64
◆ domestic private banks	11.81	13.45
<b>2. Authorized capital to equity ratio:</b>		
◆ banks with state ownership	743.95	343.32
◆ banks of foreign bank groups	265.44	228.67
◆ domestic private banks	84.36	93.70
<b>3. Equity to deposits ratio:</b>		
◆ banks with state ownership	4.45	8.36
◆ banks of foreign bank groups	12.94	22.93
◆ domestic private banks	17.50	18.85
<b>4. Return on equity:</b>		
◆ banks with state ownership	-295.76	-356.16
◆ banks of foreign bank groups	-129.73	-35.35
◆ domestic private banks	-6.63	-2.45
<b>5. Concentration of bank equity (Herfindahl-Hirschman index):</b>	<b>1082</b>	<b>557</b>
◆ banks with state ownership	69	287
◆ banks of foreign bank groups	354	252
◆ domestic private banks	659	18
<b>6. Share of authorized capital of banks' group in total authorized capital of banking system:</b>	<b>100.00</b>	<b>100.00</b>
◆ banks with state ownership	33.52	44.10
◆ banks of foreign bank groups	44.03	48.84
◆ domestic private banks	22.45	7.06

\*calculated on the basis of Ukrainian banks' financials (Natsionalnyi bank Ukrainy, 2017a).

The identified trends indicate the imbalances in the structure of the banking system of Ukraine. At the end of 2016, bank equity was concentrated in the first two groups of banks, which had the worst values of qualitative indicators of capital stability and high values of quantitative ones. Private banks with the highest values of qualitative indicators of capital stability (especially authorized capital to equity ratio) and low values of quantitative indicators had the extremely low level of equity concentration.

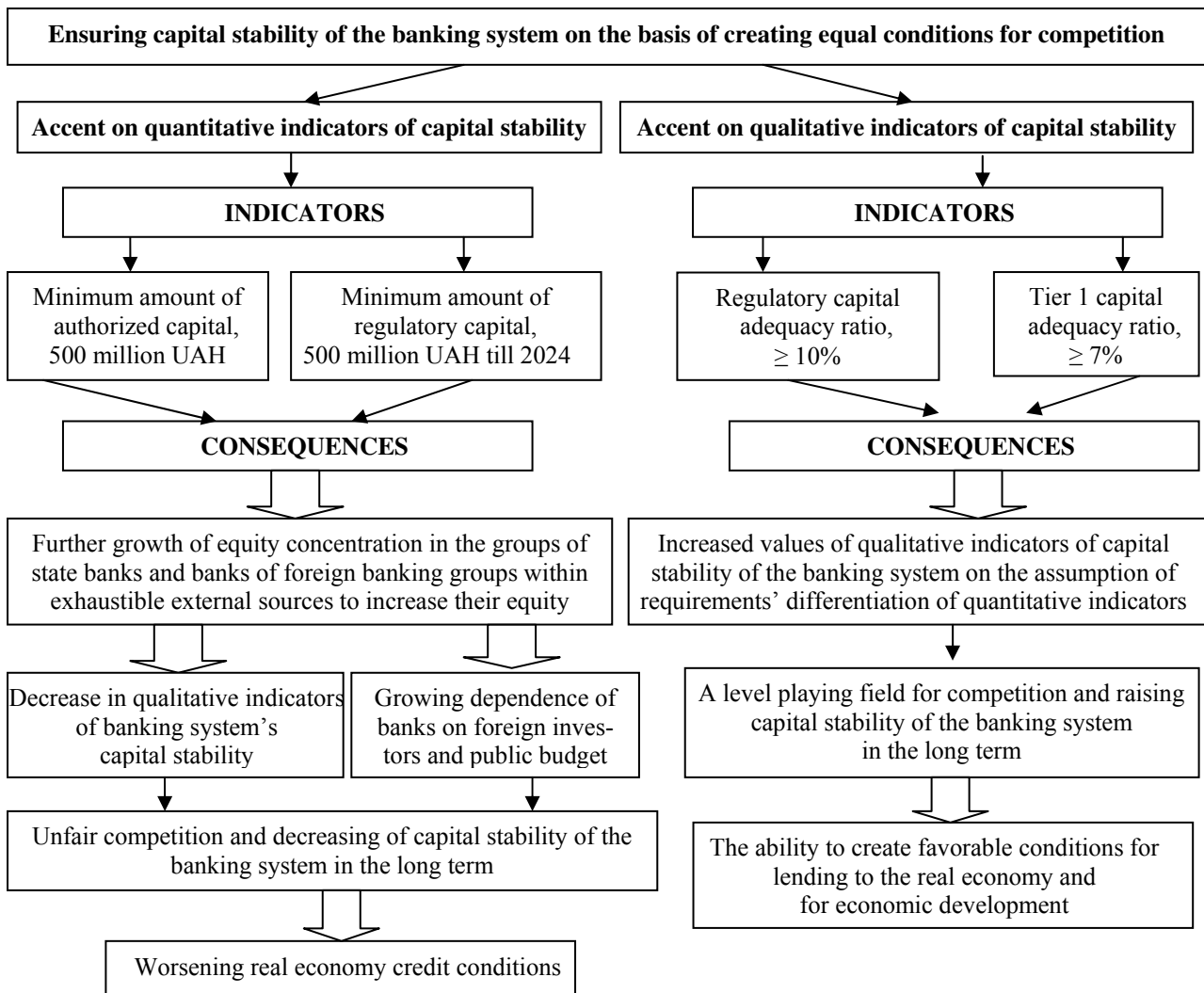
We guess that further increase of equity concentration in the groups of state banks and banks of foreign banking groups will have negative consequences for the recovery of capital stability of Ukraine's banking system: weakening competition at traditional competitive domestic banking market; aggravation of structural oligopolization problems of Ukrainian economy; financial instability. This requires implementation of complex antitrust and macroprudential measures aimed at

the formation of the banking market with the best combination of financial efficiency and systemic risk indicators.

**2.4. Qualitative indicators of capital stability of banking system as the basis of competitive banking market of Ukraine.** Only in 2016, the share of domestic private banks in the authorized capital of the banking system decreased from 22.45% to 7.06% (Table 2) as a result of reduction the number of banks through non-transparent procedures of their liquidation and Privatbank's nationalization. This indicates the formation in Ukraine at the beginning of 2017 of homogeneous, undiversified in terms of the size of banks, structure of banking market, which increases systemic risk. So, focusing macroprudential regulation on quantitative indicators of capital stability of the banking system at the current low values of qualitative indicators is contrary to the fundamental requirements defined by Basel III. They are based on the use of qualitative indicators of capital stability – adequacy ratios of Tier 1 and Tier 2 capital, and improving its quality structure taking into account buffer and countercyclical capital (Basel Committee on Banking Supervision, 2010). Our vision of the results of using different indicators in macroprudential regulation in Ukraine is shown in Figure 2.

Assessment of domestic banks' capital mainly from the institutional point of view does not account for the need to diversify the banking system's structure both at the national and regional levels. The last studies indicated the negative effect of banks' overcapitalization on net profit and return on equity (Weigand, 2016). Using in Ukraine strict requirements for the minimum amounts of authorized and regulatory banks' capital (quantitative indicators of capital stability) creates additional obstacles to the development of internal market, SMEs which are credited by small banks, and does not comply with European practice.

In particular, under Article 12 of Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013, minimum initial capital for banks is set at 5 million EUR (equivalent of almost 150 million UAH, that is, 3.3 times less than current requirements of the NBU (see Fig. 2). In case of special importance of the bank for the economy its initial capital may be 1 million EUR (equivalent to almost 30 million UAH) (The European Parliament and the Council, 2013). Moreover, in order to mitigate capital requirements so-called supporting factor (0.76) is used for the banks that provide loans to SMEs, creating the conditions for sustainable development of small banks that successfully operate in retail segments.



**Fig. 2. The results of ensuring of banking system capital stability depending on the choice of macroprudential requirements' indicators**

Small and medium-sized banks' supporting is a necessary condition for level playing field in the financial market; it will boost the supply of financial services to business entities that will stimulate economic growth in Ukraine. After all, small local banks are interested in the economic development of the region in which they invest, as they are completely economically dependent on it. The advantages of these banks are due to the fact that they usually work with a predetermined clientele using an individual approach, know the market situation in the region, and take into account its features when developing their investment policies. That is why, after global financial crisis, small and medium-sized local banks have the support in the EU, US, UK, Canada, Korea, China, India, and other countries, as the institutions that lend to SMEs ensure financial basis for decentralization, and satisfy local demand for financial services.

So, in the post-crisis phase, it is necessary not only to overcome the impact of the crisis on the capital stability of the banking system, but also to refocus monetary policy of the Central Bank to ensure equal conditions for competition in the banking sector. It

could be reached by the change of NBU macroprudential requirements from quantitative to qualitative indicators of capital stability for economic development of Ukraine and its regions.

### Conclusion

Analysis of macro- and microeconomic indicators of capital adequacy for the period 2007–2016 indicates a failure of the current system of regulation and supervision to manage capital stability of the banking system of Ukraine. Effective strategy for capital stability in the long term is a prerequisite for the restoration of the Ukrainian banking system. The protection from artificial removal of domestic small banks from the market will prevent the growth of systemic risk to the banking system, Ukrainian economy, and national security. In particular, to maintain capital stability of the banking system of Ukraine in the post-crisis period, it is necessary:

- ◆ to ensure balanced growth of absolute amounts of assets in the banking system and the equity (the ratio of regulatory capital and risk-weighted

assets) as a basic capital stability indicator, which determines the ability of the banking system to finance economic growth;

- ◆ to refocus the increasing the bank capital from its quantitative interpretation as a minimum amount to the quality of its adequacy, taking into account crisis phases of economic development and implementation of countercyclical capital buffers;
- ◆ to increase bank capital by accumulating of retained earnings considering their immediate connection to the minimizing banking risks, especially the credit one. This needs improvement of risk evaluation on the basis of such an indicator of capital stability as authorized capital to equity ratio. Its exceeding 100% reflects not only the losses of the bank, but also the poor quality of equity structure, which doesn't include reserve capital adequate to the assets' risk of Ukrainian banks;
- ◆ to ensure the development of the banking system of Ukraine as a set of equal institutions of different size, specialization and business models it is necessary to shift from quantitative indicators of capital stability to qualitative ones focused on the implementation of the capital adequacy of banks within Basel III requirements. At the same time, minimum requirements to the amounts of authorized and regulatory capital have to be differentiated (for big state banks and banks of foreign banking groups, the requirements must be higher, and for domestic local private banks, lower in order to be adequate to the possibilities of economy);
- ◆ to reinforce monitoring compliance with qualitative indicators of capital stability (especially standard R2 and the authorized capital to equity ratio) in the group of banks with state ownership. Reduction of the indicators' values points to a corresponding decrease in their funding sources, and causes increasing of their dependence on budget funding;
- ◆ to implement in the post-crisis period supporting factor at a level not lower than 0.75 for banks that provide loans to small and medium businesses. The quantitative requirements for the authorized and regulatory capital have to be cut at least three times for small and medium-sized local banks in order to ensure balanced development of different regions of Ukraine.

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