Innovative Instruments and Legal Mechanisms of Bank Capitalization: National Features and World Trends

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Abstract

The article investigates the role of bank capital in financing reproduction processes and increase of economic growth indicators, considers the essence of the concept of “bank capitalization”, determines the structure and main sources of bank capital increase. Taking into account the fact that Ukraine and Poland have similar vectors of economic development, the current practices of increasing the bank capitalization, as well as the peculiarities of the action of the governments of the two countries in the negative financial and economic crisis, positive and negative aspects of regulatory policies aimed at restoring financial stability and resistance of the banking sector of Ukraine and Poland have been identified. The study of legal aspects of regulating the capitalization of banks allowed to generalize the requirements for the level of capitalization by the central banks of Ukraine and Poland, as well as to determine the features of regulating the capital adequacy of banks by supervisors in the context of Basel III. The structure and dynamics of the capital of banks of Ukraine and Poland during 2012-2019 have been analyzed. The relationship between the level of capitalization and the level of economic development of the country has been revealed. The peculiarities of the recapitalization of banks with the participation of the state have been clarified. The main attention has been paid to the complex analysis of the experience of capitalization of Polish banks, and the ways of its use in Ukraine have been substantiated.

Keywords: Capital, Innovative instruments, Bank capitalization, Legal mechanisms, Financial stability, Recapitalization, Nationalization.

1. Introduction

Bank capital absorbs possible losses from its activities, creates a basis for maintaining trust on the part of depositors, ensures credit and competitiveness both nationally and globally. The intensification of financial markets globalization, accompanied by financial and economic crises, has led to new challenges and threats to the financial stability and resilience of banks. Insufficient capitalization of banks posed a threat to proper fulfillment of monetary obligations by banks.

To mitigate the effects of the global financial turmoil and resolve issues related to the quality and structure of bank capital, the Basel Committee decided to revise the existing Basel II directives and adopt them in a new version – Basel III, which set out requirements for the adequacy of bank capital, limited recognition of hybrid instruments in the capital, clarified the list of regulatory deductions from capital.

The banking system is a basic element of the economic system of the state and performs an important function of distribution and redistribution of financial flows, stimulating business activity. International experience shows the relationship between the level of capitalization of banks operating in the country and the level of socio-economic growth.

Due to the high dependence of the banking system of Ukraine on the world financial markets, domestic banks are constantly experiencing challenges and threats of globalization processes, and to resist them, it is necessary to have a sufficient level of capitalization. In particular, against the unfolding of the global financial and economic crisis, the total amount of equity of Ukrainian banks amounted to EUR 7.6 billion (2019), which was insufficient to ensure the proper functioning and development of banks in the current conditions. As a result, during 2014-2017, the total losses of the banking system of Ukraine amounted to EUR 11.82 billion, which led to the bankruptcy and withdrawal of more than 100 banks from the market.

That’s why to solve the problems of capitalization of domestic banks it is advisable to study the foreign experience of countries with similar problems and determine the prospects for implementing their positive experience in practice.

One such country is Poland, which is an EU member state, a strategic partner of Ukraine and has made significant progress in reforming the financial system and implementing the Basel II and Basel III directives.

2. Literature Review

2.1. Definition of Banking Capitalization

Peculiarities of the functioning of financial markets in the Central and Eastern Europe (CEE) countries are defined in
the work (Shkarlet et al., 2019). The authors determined that the indicators of economic growth of the country directly depend on the effective functioning of the financial system, and providing institutionally favorable conditions for the functioning of economic entities within the economic space of the country. The use of the cognitive approach to determining the essence of the financial services market allowed the authors (Shkarlet & Dubyna, 2016) to define the resource approach as fundamental for ensuring financial stability and resilience of functioning of its subjects.

The need to increase the capitalization of the subjects of Eastern Europe financial services market is also emphasized in the work (Shkarlet et al., 2019) where the peculiarities of the development of financial services markets were investigated.

The term “capitalization” applies not only to banks but also to other entities. Capitalization of banks is one of important factors that enable the banking system to have a significant positive impact on the economy, while minimizing financial risks and thus maintaining the stability and reliability of banking institutions. The efficiency of banking depends on the level of its capitalization.

It can be stated that today in the economic literature there is no unambiguous definition of the category of “banking capitalization”. Kovalenko & Cherkashina (2010) consider banking capitalization as a set of actions aimed at a real increase in the bank capital by reinvesting profits, attracting cash and cash equivalents from outside, as well as through concentration and consolidation.

The legislation of Ukraine provides the following definition: “banking capitalization is participation in the formation and / or increase of authorized capital of banks by purchasing shares of initial issue (shares in the authorized capital) of the bank or shares of additional issue (additional deposits) of banks in exchange for government bonds of Ukraine, and / or acquisition of these shares at the expense of the state budget of Ukraine” (The Law of Ukraine № 639-VI). The Polish Banking Law (The Banking Act) does not contain a legal definition of the “bank capitalization” category.

In the scientific literature, the tools to increase the amount of bank capital include the following:

- increasing the requirements of the central bank to the minimum level of authorized capital of the bank. For example, the policy of the NBU provides for an increase in the requirements for the minimum authorized capital of banks to UAH 500 million. (EUR 18.92 million as of 1 January 2020) for banks registered after 4 July 2014 and a gradual increase to this level by 2024 for already functioning banks;
- increasing the authorized capital due to additional issue of shares;
- by reinvesting retained earnings – profits received as a result of the activities of the bank and not paid to shareholders (Kovalenko & Cherkashina, 2010). Retained earnings are the main and cheapest source of increasing bank capital;
- through expansion of foreign capital – purchase of banks by foreign investors. This tool has gained wide popularity in Central and Eastern Europe. This is due to the fact that the expansion of foreign capital has contributed to the rapid development of the banking sector of these countries through the use of the latest management methods.
and innovative banking products and services, increasing competition in the banking market;
- increase in capital by raising funds on the terms of subordinated debt, through the issuance of deposit certificates, issue of bank bonds and Eurobonds;
- concentration of banks’ capital due to their consolidation, that is increase in the size of bank capital of individual banks or their groups on the basis of their mergers and acquisitions, creation of banking associations;
- issuance of hybrid instruments to raise capital, which combine the features of debt and share capital. In European practice, the term “hybrid instruments” is used to cover three broad categories: innovative instruments, i.e. instruments with redemption benefits, such as “step” instruments; non-innovative instruments, i.e. instruments that do not have redemption benefits; non-cumulative perpetual preference shares, which CEBS sometimes considers to be “Tier 1 capital”.

Taking into account the high sensitivity of the domestic banking system to external shocks and imbalances, as well as the leading role in the reproductive structure of the economy and financing the needs of economic entities, innovative tools to increase bank capitalization are of particular importance.

The authors (Bilovodska et al., 2017; Gryshchenko et al., 2020) point out that the companies focus on innovative methods that form a new paradigm of doing business in the context of digitalization. The effectiveness of company management is determined by innovative models, mechanisms, tools, including innovative tools with the use of simulations, modeling, and a dynamic system of technological innovation management (Babenko et al., 2020).

Innovative instruments of bank capitalization include:
(a) an innovative capital instrument with conversion / cancellation conditions, which has the ability to absorb the bank’s losses (“loss absorption mechanism”) through conversion or cancellation of obligations under such an instrument at the expense of investors, and not at the expense of other creditors and the state.

A bank performs conversion or cancellation of obligations under the instrument in case of a trigger event – reduction of the bank’s fixed capital adequacy level (excluding the instrument) lower than 6.25% (Resolution № 148);
(b) high-yield, high-risk products, the purpose of which is absorption of a capital loss by issuing banks in times of crisis (Contingent convertibles – CoCos). The use of CoCos allows banks to convert their debts into stocks to increase capitalization in times of crises (helps to shore up a bank's balance sheets by allowing them to convert their debt to stock if specific capital conditions arise.) The first issue of CoCos took place in 2009. Given the high risk of this instrument, some countries have abandoned its use (for example, the USA, where banks issue preferred shares). Beginning in January 2016, due to deteriorating economic forecasts and rising costs of using CoCos for banks, their attractiveness began to decline sharply.

3. Research Results

3.1. Legislative Requirements for the Minimum Amount of the Authorized Capital of Banks in Ukraine and Poland

In Ukraine, the authorized capital of the bank can be formed only in cash (Art. 32, para. 2 The Law of Ukraine № 2121-III On Banks and Banking), in Poland it can be formed both in cash and in kind, that is in the form of equipment and property (not more than 15% of the authorized capital), if they are directly useful in conducting banking business (Art. 30, para. 2 The Banking Act).

According to The Law of Ukraine № 2121-III, the minimum amount of the authorized capital at the time of registration of a bank in Ukraine may not be less than UAH 500 million. (EUR 18.92 million at the exchange rate of the NBU as of January 1st, 2020) (Art. 31, para. 1).

Requirements for the minimum amount of the authorized capital were increased in 2014 in accordance with Resolution № 464, and the capitalization schedule of existing banks until 2024 was approved (Table 1).

Requirements of the NBU to increase the minimum authorized capital of the bank to the level of EUR 18.92 million are 4.4 times higher than the requirements set for banks in EU member states. According to Art. 12 Directive 2013/36/EU of the European Parliament and of the Council, the minimum authorized capital of any credit institution in the EU must be at least EUR 5 million.

Table 1

<table>
<thead>
<tr>
<th>Stages of capitalization of Ukrainian banks</th>
<th>Schedule of bringing the authorized capital in line with the requirements</th>
<th>The minimum amount of the authorized capital, million UAH</th>
<th>The minimum amount of the authorized capital, mn EUR</th>
<th>Number of banks with the appropriate amount of authorized capital, units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>17/6/2016</td>
<td>120</td>
<td>4.31</td>
<td>95 out of 101</td>
</tr>
<tr>
<td>Stage II</td>
<td>11/7/2017</td>
<td>200</td>
<td>6.75</td>
<td>66 out of 88</td>
</tr>
<tr>
<td>Stage III</td>
<td>01/1/2021</td>
<td>300</td>
<td>11.35*</td>
<td>45 out of 75**</td>
</tr>
<tr>
<td>Stage IV</td>
<td>11/7/2022</td>
<td>400</td>
<td>15.14*</td>
<td>34 out of 75**</td>
</tr>
<tr>
<td>Stage V</td>
<td>11/7/2024</td>
<td>500</td>
<td>18.92*</td>
<td>31 out of 75**</td>
</tr>
</tbody>
</table>

* The minimum amount of the authorized capital from January 1st, 2021 is given at the exchange rate of the NBU as of January 1st, 2020 – UAH 26.422 /euro
** as of January 1st, 2020

Source: own elaboration on the basis of the data National bank of Ukraine
Requirements for the amount of the authorized capital in the EU member states may differ depending on the type of bank and the residence of the owner. The legislation of some countries provides for differentiated requirements for the authorized capital of specialized banks depending on the specifics and risks of their activities. The establishment of such requirements has created conditions for the stable development of small cooperative banks that operate successfully in certain business segments.

In Poland, the minimum authorized capital may not be less than EUR 1 million for cooperative banks and EUR 5 million for other banks. The authorized capital is paid into the PLN at the middle exchange rate of Narodowy Bank Polski, effective on the date of the decision to establish the bank (Art. 32, para. 1 The Banking Act). Supervision functions over the level of capitalization of banks in Ukraine are entrusted to the National Bank of Ukraine, and the same functions in Poland are performed by The Polish Financial Supervision Authority.

Basing on the requirements for the minimum amount of authorized capital, the NBU together with the IMF and other international organizations has developed a plan for the forced recapitalization of banks. Since 2015, the NBU has been conducting a diagnostic survey of banks in two stages: Stage I – asset quality analysis, Stage II – stress testing. Based on the results of the diagnostic examination, the management of a bank must draw up recapitalization schedules agreed with the bank’s shareholders and submit the recapitalization program to the NBU for approval. Thus, in 2015 the diagnostic survey of the 20 largest banks was conducted, based on the results of which recapitalization programs of 16 banks were developed and approved, then 40 banks in 2016, and 11 banks in 2019. The diagnostic examination revealed inadequate reflection of asset quality and a significant level of hidden credit risk. It should also be borne in mind that an increase in regulatory capital requirements by 1 percentage point leads to an increase in interest rates on loans and a decrease in bank lending by 6.5-7.2 percentage points (Aiyar et al., 2012), that may have a negative impact on the level of business activity.

To perform Stage III of the capitalization, according to the schedule given in Table 1, 30 Ukrainian banks or 40% of the total number of banks by January 1st, 2021 must increase their authorized capital to EUR 11.35 million for a total amount of EUR 86.51 million. It is projected that not all Ukrainian banks will be able to meet these requirements. It is expected that this will lead to the removal from the market of small but solvent banks that have a sufficient level of liquidity and capital adequacy, provide quality financial services. Some banks will decide to merge with other market players, others to self-liquidate. Besides, the adoption on March 23rd, 2017 of the Law of Ukraine “On simplification of reorganization and capitalization of banks” № 1985-VIII makes it possible to reorganize financial institutions by merging through a simplified procedure, the term of which is reduced several times – from eighteen to three-four months or to cease banking activities without terminating the legal entity (to continue activities in the non-banking financial sector) (The Law of Ukraine №1985-VIII).

This Law will be valid until August 1st, 2024. That is, banks that do not have time to bring their capital to the statutory level, can leave the banking market without a burden on the Deposit Guarantee Fund.

3.2. Comparative Research of the Level of Banking Capitalization in Ukraine and Poland.

In the banking sector of Poland, as well as in the banking sector of Ukraine, banks can be organized in the form of an open (public) joint stock company or a cooperative bank. In both countries there are state-owned banks, banks with private and foreign capital. As of the end of 2018, there were 63 commercial banks operating in the Polish banking sector (8 of them with state capital, and 19 with foreign capital), and 2 banking associations. There were 77 banks operating in Ukraine, including 5 state-owned and 37 banks with foreign capital. In Ukraine, there are in fact no cooperative banks, as well as specialized mortgage, savings, construction, clearing banks, although their creation does not contradict current legislation. Besides, in contrast to Ukraine, small cooperative banks remain the largest group of banks in Poland – 549 cooperative banks. In both Ukraine and Poland, state-owned banks were established by a decision of the highest executive body, and their authorized capital was formed at the expense of the state budget.

In Poland, the procedure for establishing cooperative banks is regulated by three basic laws: “Cooperative Law”, “Banking Law” and “Law on the Functioning of Cooperative Banks, their Associations and Merging Banks”. Of the 560 cooperative banks, only Krakowski Bank Spółdzielczy is independent. Each of the rest of cooperative banks is a part of one of two associations: Bank Polskiej Spółdzielczości Spółka Akcyjna unites almost 64% of banks, SGB-Bank SA – 36% of banks. According to the World Bank, the share of equity in assets on average in all countries has a positive trend. In 2014 it was 9.97%, in 2015 - 10.09%, in 2016 – 10.34%, in 2019 – 12%.

The analysis of the capitalization indicators of Ukrainian and Polish banks shown in Table 2 is based on the experience of Poland, which, unlike Ukraine, successfully overcame the transition period, became a full member of the EU, and effectively implemented systemic reforms in the banking sector (Podgorna et al., 2020).

During 2012-2019, the amount of equity of Ukrainian banks decreased by 52.93%, and the amount of equity of Polish banks increased by 37.05%. The decrease in equity in the banking system in general, despite the increase in authorized capital by 6.54%, is due to a decrease in the number of banks in Ukraine and unprofitable activities of some of them (Perevosova, et al., 2019). The capital is distributed unevenly: there
are banks in the market that need additional capital and banks with its surplus. Among non-state banks, most of the recapitalization was provided by foreign owners, while new capital from Ukrainian bank owners was significantly lower.

In addition, high interest rates on NBU certificates of deposit essentially created subsidized income for banks. It has become a stable source of income that can be used to increase capital.

As of the end of 2019, the equity of Ukrainian banks remains insignificant and amounts to only 5.14% of GDP, while in Poland this figure reaches 9.38% (Fig. 1).

In addition, the volume of regulatory capital in the banking system of Ukraine during 2012-2019 shows a negative trend (-66.49%), while in Poland this figure increased by EUR 38.33 billion. This trend was due to the devaluation of the hryvnia, which put pressure on the capital adequacy ratio (CAR), and the growth of losses from problem loans. However, the growth of external risks may have a negative impact on banking performance and lead to a further decline in CAR, jeopardizing the stability of the banking sector. Banks can also hold excess capital ratios to increase credit ratings and obtain more favorable cost of issuing debt.

4. Discussion. Practical Experience of Banking Capitalization with the Participation of the State

As of January 1st, 2020, there are 5 state-owned banks in Ukraine (3 state-owned with 100% state-owned and 2 partially-owned) – Oschadbank JSC (100% state-owned), CB Privatbank JSC (100%), Ukreximbank JSC (100%), Ukrgazbank JSB (94.94%), Settlement Center PJSC (83.55% NBU, 3.22% state property). According to international experience, during the crisis in the case of recapitalization of troubled banks has a lasting positive effect on the use of public funds, including the

Table 2
Capitalization indicators of Ukrainian and Polish banks during 2012-2019

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Date</th>
<th>Ukraine</th>
<th>Poland</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP, billion EUR</td>
<td>2012-2019</td>
<td>133.31</td>
<td>400.63</td>
</tr>
<tr>
<td>Assets, billion EUR</td>
<td>2012-2019</td>
<td>106.97</td>
<td>331.81</td>
</tr>
<tr>
<td>Equity capital, billion EUR</td>
<td>2012-2019</td>
<td>16.15</td>
<td>16.98</td>
</tr>
<tr>
<td>Authorized capital, billion EUR</td>
<td>2012-2019</td>
<td>16.72</td>
<td>18.16</td>
</tr>
<tr>
<td>Capitalization ratio, %</td>
<td>2012-2019</td>
<td>15.10</td>
<td>18.06</td>
</tr>
<tr>
<td>Net profit/loss, billion EUR</td>
<td>2012-2019</td>
<td>0.47</td>
<td>2.9</td>
</tr>
<tr>
<td>ROE, %</td>
<td>2012-2019</td>
<td>3.60</td>
<td>15.06</td>
</tr>
<tr>
<td>CAR, %</td>
<td>2012-2019</td>
<td>18.06</td>
<td>18.30</td>
</tr>
</tbody>
</table>

Source: own elaboration on the basis of the data National bank of Ukraine and Narodowy Bank Polski

As of January 1st, 2020, there are 5 state-owned banks in Ukraine (3 state-owned with 100% state-owned and 2 partially-owned) – Oschadbank JSC (100% state-owned), CB Privatbank JSC (100%), Ukreximbank JSC (100%), Ukrgazbank JSB (94.94%), Settlement Center PJSC (83.55% NBU, 3.22% state property). According to international experience, during the crisis in the case of recapitalization of troubled banks has a lasting positive effect on the use of public funds, including the

![Fig. 1. The ratio of equity and GDP in Ukraine and Poland in 2012-2019](Source: own elaboration on the basis of the data National bank of Ukraine and Narodowy Bank Polski)
stabilization fund, the issuance of government securities, as well as funds of international financial institutions. In times of crisis, the capitalization of state-owned banks is a common anti-crisis measure in many countries. During the global financial and economic crisis of 2008-2009, the framework legislation for capitalization of systemic problem banks was created, namely on November 4th, 2008 the Resolution of the Cabinet of Ministers “On approval of the Procedure for state participation in bank capitalization” №960 was adopted (expired on October 9th, 2012). Today, the legal mechanism of capitalization of Ukrainian banks with the participation of the state is determined by the Resolution of the Cabinet of Ministers “Procedure for acquiring bank shares in exchange for domestic government bonds” №632 of November 19th, 2014.

Thus, in the crisis of 2008-2011 in Ukraine capitalization of banks at state expense, as a result of which three banks were nationalized: Ukrgazbank JSC, CB Kyiv PJSC and Rodovid Bank JSC. 30% of all recapitalization costs were directed to the rescue of CB Kyiv PJSC and Rodovid Bank JSC. Later, CB Kyiv PJSC was liquidated, and Rodovid Bank JSC was transformed into a hospital bank, and from December 20th, 2017 the procedure of its liquidation began. Later, their nationalization was called an example of ineffective government decisions in the field of working with insolvent banks. The cost of rescuing them was several times higher than the possible losses of the state from liquidation. That is why it was decided to gradually withdraw the state from the capital of banks during the period of economic growth (The Law of Ukraine № 4524-VI).

The Government of Ukraine increased the capital of state-owned banks by EUR 0.94 billion in 2014 and additionally capitalized JSB Ukrgazbank by EUR 0.122 billion in 2015 (Figure 2). At the end of 2016, as a result of the nationalization of CB Privatbank JSC, the ownership structure of the banking sector underwent significant changes. The share of state-owned banks in the net assets of the banking system in 2019 was 60.81%, in equity – 46.68% (7% in 2008). Besides, the concentration of state-owned banks is growing due to the increase in the number of banks in liquidation to 55 in 2019.

State-funded bank capitalization has also been used in Austria, the United Kingdom, Spain, India, Germany, Poland, the United States, France, and other countries (Figure 3).

The legal mechanism for the recapitalization of some financial institutions in Poland by the state is defined in the Act “On the recapitalization of financial institutions by the State Treasury” Act on the Recapitalization of Certain Financial Institutions. The Act introduced two methods of recapitalization of financial institutions: the State Treasury granting guarantees of increasing the capital of financial institutions and the right of the State Treasury to perform a compulsory acquisition of a financial institution. Today, 8 banks with state participation are registered in Poland: Banks with state capital of Poland: Alior Bank SA, Bank Gospodarstwa Krajowego, Bank Ochrony Środowiska SA, Bank Poczty SA, Bank Polska Kasa Opieki SA, Pekao Bank Hipoteczny SA, PKO Bank Hipoteczny SA, PKO Bank Polski SA. Alior Bank SA and Pekao Bank Hipoteczny SA were bought by the state company PZU in 2017. Supporters of the nationalization of banks in
Poland believe that the reduction of dependence of the Polish banking system on foreign capital is a positive aspect (the share of state assets in total assets of the Polish banking system today is 55%), as well as increasing the competitiveness of banks. At the same time, S&P analysts noted that the growth of state participation in banks’ assets creates additional challenges for the dynamics of competitiveness in the banking services market. Taking into account the fact that the Polish Financial Supervision Authority and the Bank Guarantee Fund, unlike the central bank, are under the potential influence of the government, there are additional threats of politicization of banks with state participation, and as a consequence, confusion in the regulation of the banking system.

5. Conclusion

Consistent integration of the national financial services market into the global financial space places higher demands on the level of banking capitalization. This is due to the fact that capital plays a key role in ensuring the proper functioning and development of the bank in the face of growing challenges posed by the globalization of financial markets, and determines the ability of a bank to compete successfully for customers and meet financing needs of certain sectors of the economy and households. A comparative analysis of the experience of capitalization of banks in Poland and Ukraine gives grounds to argue that the NBU should take into account the positive practices of Poland in the reorganization and capitalization of banks. This is due to the fact that the Polish banking sector has a high level of confidence among the population and effectively performs the function of financing the needs of the economy, and is characterized by stable performance and high levels of profitability. The regulatory policy of Narodowy Bank Polski helped banks accumulate a sufficient level of buffer capital to meet the challenges of the financial and economic crisis, which allowed Polish banks to overcome the negative consequences of its manifestation at a lower cost. Taking into account the structural differences between the banking systems of the two countries, it can be argued that the state’s entry into the bank capital should be considered as a temporary and forced phenomenon, in anticipation of the subsequent sale of state shares to private investors. This makes it necessary to revise the criteria for the eligibility of banks for state entry into capital, given the threats to financial stability and the systemic importance of banks. The solution of this problem can be provided by creation of pilot municipal banks on the basis of operating state banks in separate regions of Ukraine. The regulatory policy of the NBU should be aimed at forming an optimal structure and improving the quality of the bank capital in accordance with Basel III, as well as ensuring positive dynamics of key banking indicators while increasing their ratio to GDP, which will transform banking resources into economic growth resources.

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