

<https://www.cceol.com/search/article-detail?id=752937>

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RISK-ORIENTED APPROACH TO DETERMINING BANK'S CAPITAL SIZE ACCORDING TO REQUIREMENTS OF BASEL COMMITTEE ON BANKING SUPERVISION

The article establishes that it is necessary to introduce capital requirements for the Basel Committee on Banking Supervision to improve the regulation of banking activities. The conducted experiment on calculation of the bank's capital for operational risk with different methods showed non-profitability of the results, which requires further improvement of the processes of changes in the banking regulation system based on the Basel regulations. According to the calculations, there is a certain difference between the amounts of necessary reserves for bank's operational risk. At the same time, using different methods of calculation, we can see various trends over the last three years.

JEL: C10, G32, G21, F65, K29

1. Introduction

In conditions of continuous improvement of globalized financial procedures regulation, the questions arise about finding identical forms, regulatory methods and subjects of influence on the market of banking services. One of the areas is to determine the sources of banking regulation when conducting banking control.

2. Analysis of recent research

Some questions regarding the economic content of banking regulation and control, state regulation of the banking system were considered by financial researchers I. Karcheva (Karcheva, I. Ya. 2016), L. Konopatska (Konopatska, L. V., 2012), S. Naumenkova (Konopatska, L. V. 2012) and etc.

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Now the Basel Committee on Banking Supervision is an important factor that influence to legislation in Ukraine. It is relevant to determine the influence of the decisions of this authority on changes in the banking legislation of Ukraine.

The purpose of this paper is to establish directions for taking into account decisions of the Basel Committee on Banking Supervisions on formation of bank's capital under operational risk.

3. Presentation of the main material

Documents of the Basel Committee on Banking Supervision (BCBS), hereinafter referred as the Basel Committee) have a recommendatory nature for regulation of banking activities. Although scientists point out that the documents of the Basel Committee do not have legal effect but they have binding power since the states are not obliged to implement decisions, but they try to make the most use of domestic legal regulation (Erpyliova, N., 2014).

The central place among the documents of the Basle Committee takes the International Convergence on Measurement and Capital Requirements, or Basel II, was adopted on June 26, 2004 , which substantially became an element of implementation of the Basic Principles of Effective Banking Supervision contained in the International Convergence of Capital Measurement and Capital Standards (1998), or Basel I, which is defined as the bank capital, with a minimum size set, and the division of funds (capital) of the bank into two levels foreseen, as well as same classification of assets in five categories of quality provided.

The priority of Basel II is to ensure capital adequacy, and all the requirements of this agreement are foreseen: banks must have procedures for assessing the overall capital adequacy of their risk, banking supervisors must verify and assess the definition of banks' adequacy of their domestic capital and their strategy in this area, and have the right to expect that banks will maintain a level of capital above the minimum regulatory standards; the banking supervisors should take preventive intervention in order to prevent a lowering of capital below the minimum level (Miroshnichenko, O. A., 2007).

The Basel II Regulations have been taken into account at the legislative level in the EU in accordance with Par. 37 of Directive 2006/48/EC on the commencement and pursuit of activities of credit institutions and in the current Directive 2013/36/EC of the European Parliament and of the Council of 26 June 2013 access to credit institutions and prudential supervision of the activities of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC , and therefore are mandatory for the EU states when they are introduced into national legislation. The provisions of Basel II are also taken into account in Regulation (EU) 575/2013 on special requirements for credit institutions and investment companies, amending Regulation (EC) No. 648/2012.

The abovementioned of Basel II's core principles and components requires a more detailed analysis, as set in the example of a bank's performance.

In accordance with the recommendations of Basel II, there are three alternative methods for measuring the size of operational risk in terms of increasing complexity and sensitivity: Basic Indicator Approach (BIA), Standardized Approach (SA) and Advanced Measurement Approach (AMA).

The comparative characteristics of alternative methods for measuring the operational risk value are given in Tab. 1.

Table 1

Comparison of methods for calculating capital requirements under operational risk

Comparison Criterion	Basic Indicator Approach (BIA)	Standardized Approach (TSA)	Advanced Measurement Approaches (AMA)
The need for regulatory approval for use of the method	Not required	Not required	Necessary
The subject of determining the procedure for calculating capital for covering operational risk	Regulator	Regulator	Financial institutions
Availability of requirements for division into business lines	Missing	Exists	Exists
Lack of the possibility of reducing the capital requirement for the amount of operational risk insurance	Yes	Yes	No, under certain conditions
Availability of operational risk management requirements	Basic requirements	Basic requirements + additional for TSA	Basic requirements + quantitative requirements for AMA

As can be seen from Tab. 1, each of these approaches allows us to determine the capital needed to cover operational risk. The bank chooses the method of calculation independently. At the same time, banks that are active in international transactions, as well as banks with significant operational risk, are recommended to use a more complex option than the BIA.

The basic indicator method is the simplest, because the size of bank's operational risk is estimated with a single indicator – net income. The results of the bank's performance for each of the last three years are used to calculate the value of the reserve capital (Kushnir, O. S., 2016).

When using the base indicator method, the amount of capital to cover operational risk is calculated using formula (1):

$$K_{BIA} = \alpha \times \sum_{i=1}^3 \frac{GL_i}{n}, \quad (1)$$

where α is a coefficient set by the Basel Committee. It reflects the sector-wide level of minimum regulatory capital requirements, now it is equal to 0.15 or 15%;

GLi is a gross income for each year over three years; (in the case of an annual loss it is assumed $GL_i=0$);

n is the number of years for which $GL_i > 0$ ($n < 3$).

Calculation of the amount of capital using the method of basic indicators to cover the operational risk of one of Ukrainian banks in dynamics is presented in Tab. 2.

Table 2

Calculation of capital using the method of basic indicators to cover the bank's operational risk

Indicator	Value of the indicator for years, thousands UAH				
	2012	2013	2014	2015	2016
Interest incomes	18 153 983	22 246 140	29 185 014	13 202 933	33 086 316
Interest expenses	10 104 859	13 801 979	18 837 048	10 818 378	29 375 913
Net interest income	8 049 124	8 444 161	10 347 966	2 384 555	3 710 403
Commission incomes	3 781 131	3 611 719	3 912 756	1 355 284	10 923 672
Commission expenses	507 416	1 055 163	1 042 671	389 601	2 205 108
Net commission income	3 273 715	2 556 556	2 870 085	965 683	8 718 564
Result of trading operations	612 770	428 911	-1 151 826	-2 313 373	-27 854 165
Gross net income	9 169 310	9 928 235	10 238 811	460 783	-21 938 654
Average income	-	-	9 778 785	6 875 943	8 327 364
Capital for operational risk coverage, calculated on the basis of BIA method	-	-	1466817.8	1031391.5	1249104.64

Source: own calculation on the described data sample (SSSU 2018)

As shown in Tab. 2, it can be argued about the volatile dynamics of the amount of reserve deductions for covering operational risk. This is because in the 2012-2014 the bank received a much higher average income than in the next two years, which caused significant recommended reserves. In 2016, the bank received a gross net loss, so the average value of

the indicator was taken not for the last three years, but for the two that were profitable. As a result, a recommendation was reached on a larger amount compared with 2015.

Consequently, in comparison with the other two approaches, the method of the Basic Indicators will determine the largest amount of capital reserve, and it is the least sensitive to risk, since it depends only on one aggregate indicator of the bank's activity, net annual income. That is why it is recommended to apply to those banks that are just beginning to create an operational risk management system and have a small number of activities.

The Standardized Approach is more complex and better reflects the real bank's risk. The risk factors of an asset in terms of activities are set by the Basel Committee and reflect the relationship between cases of operational risk and net income in individual areas within the banking sector (Tab. 3) (Kushnir, O. S., 2016).

Table 3

List of risk factors of the asset

Activity direction	Risk factor of the asset (βk,) %
Corporate finance	18
Trading and sales	18
Retail banking	12
Working with corporate clients	15
Payments and settlements	18
Agency services	15
Assets management	12
Conducting brokerage operations for clients	12

Source: own calculation on the described data sample (SSSU 2018)

As can be seen from Tab. 3, a bank needs to divide its activities into eight main areas, in each of which the minimum amount of capital reserve is defined as the product of net income from this type of activity to the corresponding risk factor of the asset.

The disadvantage of the Basic Indicators and Standardized Approaches is that they predict a linear dependence of the risk factor losses, whereas, as a rule, this is a nonlinear dependence. In addition, the risk factor varies under the influence of the business cycle (during the recession decreases, and on the rise it increases).

In accordance with the recommendations of the Basel Committee, the supervisor may allow the bank to use the AMA method if the bank believes that this method yields more correct results. The method of calculating capital under operational risk is the same as for standardized methodology (TSA), but includes only 2 types of activities: working with corporate clients and retail banking.

For these business processes, instead of gross net income, as a risk indicator, loans are used (average value over three years), multiplied by a factor of 0.035, and the value of β coefficients for these business processes remain the same as for Standardized methodology (Karcheva, I. Ya., 2016).

An Alternative Standardized Method (ASA) is simple enough. It is specified with activity and provides stable forecasts throughout the business cycle. In addition, for its calculation, there is necessary information in public financial statements of Ukrainian banks.

The deduction of capital for operational risk coverage by the ASA method for lending to businesses and individuals is calculated according to formula (2):

$$K_{ASA} = \beta_j \times m \times K_j, \quad (2)$$

where K_{ASA} is the amount of capital deductions to cover operational risk for transactions with businesses and individuals;

β_j is a coefficient for credit transactions with individuals and legal entities;

$m = 0,035$ is the coefficient established by the Basel Committee;

K_j is the average value of loans issued over the last three years.

Calculation of the amount of capital using Alternative Standardized Method for covering operational risk of the bank in dynamics is presented in Tab. 4.

Table 4

Calculation of capital by Alternative Standardized Method to cover the operational risk of the bank

Indicator	Value of the indicator for years, thousands UAH		
	2014	2015	2016
1	2	3	4
The amount of credit debts of businesses	139 212 152	151 705 002	34 968 793
Average value over three years	117 537 738	136 565 291	108 628 649
Taking into account coefficient of 0.15	17630660.68	20484793.59	16294297.3
The amount of credit debts of individuals	22 126 573	26 105 479	19 702 438

Continuation of tab. 4

1	2	3	4
Average value over three years	21 666 432	24 000 475	22 644 830
Taking into account coefficient of 0.12	2599971.81	2880057.05	2717379.63
The amount of credit debts of businesses + The amount of credit debts of individuals (taking into account coefficients)	20230632.48	23364850.64	19011677
Taking into account coefficient of 0.035	708072.14	817769.77	665408.69
Capital for operational risk coverage, calculated using TSA method	708072.14	817769.77	665408.69

Source: own calculation on the described data sample (SSSU 2018)

As can be seen from Tab. 4, calculations made for the bank according to the Alternative Standardized Method showed that the capital requirement for covering operational risk in 2016 (665408.69 thousands UAH) is almost in two times less than the capital calculated on the basis of the Basic Indicators Method (1249104.64 thousands UAH).

According to the calculations, there is a certain difference between the amounts of necessary reserves for bank's operational risk. At the same time, using different methods of calculation, we can see various trends over the last three years.

Gross net income used in BIA and in SA is only an indicator of bank's exposure to operational risk (Karcheva, I. Ya., 2016).

Low-profitability banks may underestimate capital requirements for operational risk using the VIA method, which has been observed in recent years in Ukraine, particularly in banks that cannot provide efficient assets and liabilities management. According to Basel II, operational risk should be taken into account, according to I. Karcheva (Karcheva, I. Ya., 2016), in calculating the regulatory capital adequacy ratio.

The approaches discussed measure operational risk with varying degrees of sensitivity, which can be effectively controlled only if it is identified, measured, evaluated and managed properly.

Along with these measurement methods, the Basel Committee has developed operational risk management principles, according to which a bank must have a clearly defined function of operational risk management and a subdivision responsible for creation and implementation of risk management system. This system should be included in the daily risk bank's management and should be the subject of reports and periodic audits.

The expansion of the banking risk spectrum led to the need to analyze not only operational risk, which was taken into account in the Basel Accord, but also market and currency risks. Improving the risk minimization tools by banks revealed a discrepancy between the level of

capital demanded by regulators and the level of economic capital reserved by banks for specific bank's portfolios.

The document "International Convergence of Calculation of Equity and Equity Capital Requirements"⁶ is based on three main provisions:

- the bank's capital consists of the principal and the additional ones;
- the main criterion of the bank's capital adequacy to provide reliable protection against financial risks is the ratio of the bank's capital to assets weighted by the risk factor (it is based on the calculation of the value of assets weighted at risk, taken a credit risk, that is, the risk of default by the counterparty bank, and all assets the bank is classified and credited to a certain category and weighted by the risk factor in accordance with the established scale of coefficients);
- the ratio of the bank's capital to the assets weighted by the risk factor must be no less than 8%.

The main provisions of the "International Convergence of Calculation of Equity and Equity Capital Requirements"¹ direct supervisors to assess capital adequacy from an individual approach to a bank, taking into account the specifics of risks, excluding a single approach. This paper reflects the concept of a stable functioning of the banking system through supervisory interaction, high-level banking management and market discipline, with the main role assigned to the assessment of banking risks.

Principal novelty of Basel II implies (Miroshnichenko, O. A. (2007) the creation of a risk-sensitive capital accounting system based on risk assessment carried out by banks independently.

Parallel operating support components serve as the basis of the new regulatory requirements of the Basel Committee:

- minimum requirements for the bank's equity;
- regulatory control;
- adherence to market discipline.

In our opinion, among the absolutely important components, the first component affects the stabilization of banking activity most. It contains approaches and methods for calculating capital adequacy taking into account credit, market and operational risks, using both external sources of risk assessment and internal risk measurement systems. Furthermore, normative value of the indicator of capital adequacy remained unchanged, 8%. Basel II provides several alternative approaches to quantifying each of the risks.

The Basel Accord presumes preserving the method for calculating the minimum requirements for the bank's equity capital, which was introduced in 1988, but the risk assessment process has changed: from now, credit, market and operational risks will be taken into account, using a wider list of econometric models, technical methods, and risk

⁶ <https://www.bis.org/bcbs/membership.htm>.

reduction tools. Thus, the calculation of the equity capital adequacy ratio includes the following parameters (3)7:

$$K = \frac{EC}{CR+MR+TR} \geq 8 \% K_{ASA} = \beta_j \times m \times K_j; \quad (3)$$

where *EC* is equity capital;

CR is a credit risk;

MR is a market risk;

TR is a transaction risk.

Since the size of the bank's operational risk coverage, calculated by two different methods, had significant differences (almost doubling), it is possible to determine which method of calculation is the best.

Calculation of the ratio of equity capital with the method of basic indicators, taking into account the volumes of operational risk is shown in Tab. 5.

Table 5

Calculation of the ratio of equity capital with the method of basic indicators, taking into account the volumes of operational risk

Indicator	The value of the indicator over the years		
	2014	2015	2016
Equity capital	22696.36	27487.22	12664.42
Regulatory capital	20311.00	22696.00	3135.80
Deductions for credit risk	210.17	13298.65	133989.75
Deductions for market risk	101.56	113.48	15.68
Deductions for operational risk	1466.82	1031.39	1249.10
Equity capital adequacy ratio, %	1276.12	190.31	9.36

Source: own calculation on the described data sample (SSSU 2018)

⁷<http://eur-lex.europa.eu/legal-content/EN/NOT/?uri=CELEX:32013L0036&qid=1464258114451>

As can be seen from Tab. 5, when calculating the operational risk reserve volume using the benchmark indicators during 2014-2016, the capital adequacy ratios were met, i.e. the figure was more than 8%. At the same time it is worth paying attention to the negative dynamics of the last three years as a sharp decrease in the calculated indicator.

Calculation of the equity capital adequacy ratio by the alternative standardized method taking into account the operational risk volumes is shown in Tab. 6.

Table 6

Calculation of the equity capital adequacy ratio by the alternative standardized method taking into account the operational risk volumes

Indicator	The value of the indicator over the years		
	2014	2015	2016
Equity capital	22696.36	27487.22	12664.42
Regulatory capital	20311.00	22696.00	3135.80
Deductions for credit risk	210.17	13298.65	133989.75
Deductions for market risk	101.56	113.48	15.68
Deductions for operational risk	708.07214	817.76977	665.40869
Equity capital adequacy ratio, %	2225.57	193.17	9.40

Source: own calculation on the described data sample (SSSU 2018)

As can be seen from Tab. 6, when calculating the operational risk reserve volumes according to the alternative standardized method during 2014-2016, capital adequacy ratios (above 8%) were also fulfilled.

According to the calculations, there is a significant difference between the amount of required reserves for the Bank's operational risk by the ASA and VIA method. The requirement for capital to cover the operational risk of the bank in 2016 differed by almost twice in two calculated methods.

However, the calculations of the equity capital adequacy ratio based on the operational risk volumes by the alternative standardized method and by the base indicator method differ by only 0.04%.

Consequently, based on the data obtained, it can be concluded that, in order to manage operational risk, banks can independently choose either of the two methods of calculation, since the differences as a result are almost not observed.

Basel II requirements require currency risk to be taken into account. According to Basel II, if the volume of transactions in foreign currency is insignificant (if the gross foreign exchange position does not exceed 100% of the third-tier capital and the net foreign

currency position does not exceed 2% of that capital), the bank may not make capital available to cover currency risk⁸.

The third-tier capital belongs to the bank's regulatory capital and is a short-term subordinated debt. Third-tier capital is not an obligatory component of regulatory capital, unlike the capital of the first and second tiers, but may be an alternative source of banking risks and losses.

The bank's foreign currency position (as defined by the National Bank of Ukraine) is the ratio of requirements and obligations of the bank in each foreign currency and in each bank metal. Since banks can not influence the exchange rate (it is established either by the market or by the national regulator), the only tool for managing this type of risk is to control currency positions.

The definition of the need to allocate capital to cover currency risk is presented in Tab. 7. All volume of subordinated debt was taken for the volume of the capital of level 3.

Table 7

Calculation of the need for the bank to allocate capital to cover foreign currency risk

Indicator	The value of the indicator over the years		
	2014	2015	2016
Bank's active operations in foreign currency	81362.14	112518.52	29932.6
Bank's passive operations in foreign currency	89857.55	121280.6	104516.89
Currency position	-8495.41	-8762.01	-74584.29
Third-tier capital	5351.6	10690.63	96.54
The ratio of the currency position to the third-tier capital, %	-158.74	-81.96	-77253.34

Source: own calculation on the described data sample (SSSU 2018)

As can be seen from Tab. 7, the open currency position of the bank was observed during the last three years, while the ratio of the currency position to the capital of level 3 substantially exceeded 2%. In this regard, the amount of reserve deductions can be calculated as 0.5% of the amount of regulatory capital, based on the source⁹.

Introduction of new Basel requirements in Ukraine requires constant and careful monitoring of banks' activities by highly skilled and experienced specialists. In domestic banking institutions, preparatory work is underway to implement a risk management system. As for

⁸ <https://www.bis.org/publ/bcbs128.htm>

⁹ <https://www.bis.org/publ/bcbsca.htm>

approaches to the assessment of capital adequacy, a simplified approach may be used in the Ukrainian banking sector. As for the supervisory procedure for assessing capital adequacy and market discipline, these conceptual provisions of the Basel Accord will be taken unconditionally.

An example of taking into account the requirements of the Basel Committee regarding capital is the adaptation of the legislation of European countries. Thus, Erin Pentz claims that among the individual financial institutions in the EU there are more than 15 largest banks in the world. In particular, fifteen out of twenty nine SIBs are in the EU member states. However, the EU does not consist exclusively of large financial institutions, since there are more than 8000 small banks in Europe accounting for a quarter of the total volume of bank assets in the EU¹⁰, and the possibility of the economic crisis will affect other member countries on a chain-of-principle basis. As a result of the potential consequences of bank failures, EU governments have recognized the urgent need to provide funding to the private sector despite the fact that such actions violate the traditional EU policy.

In order to determine the priorities of regulatory instruments to influence the development of the banking system in Ukraine, the authors suggested using the Analytic Hierarchy Process by T. Saaty (Saaty, T., 2004), which is a tool of system analysis. Unlike other methods, T. Saaty's method for analyzing the hierarchy involves calculating the priorities of alternative solutions to the main goal. The best alternative is considered as the highest priority value. The main advantage of this method is the ability to solve a complex decision-making problem.

In order to assess the priority of regulatory instruments for the development of the banking system in Ukraine using the hierarchy analysis method T. Saaty (Saaty T., 2004), a model to regulate the development of the banking system in Ukraine (Fig. 1) was developed.

As shown in Fig. 1, the model of regulation of the development of the banking system in Ukraine is three-tier and includes the goal of regulating the development of the banking system in Ukraine; adverse factors and regulatory instruments.

The hierarchical model allows to determine pair-wise comparison of priority instruments of regulatory influence on compensation of adverse factors (Pukala R., 2017) (imperfection of the risk-oriented mechanism of regulation of the development of the banking system in Ukraine, low efficiency of state regulation of the development of the banking system in Ukraine, distrust of consumers of banking services to the banking system) (Tab. 8).

As shown in Tab. 8, the adverse factors have the following priority: the imperfection of the risk-oriented mechanism for regulating the development of the banking system in Ukraine is 0.584, the low efficiency of the state regulation system for the development of the banking system in Ukraine is 0.281, and the mistrust of the banking services consumers to the banking system is 0.135, respectively.

It has been established that the regulatory influence instruments have the following priority: strengthening the influence of banking unions is 0,187, the requirements of Basel III is 0,432, and improvement of state supervision of the banking services market is 0,381.

Thus, the implementation of Basel III requirements is a priority regulatory influence on the development of the banking system in Ukraine.

¹⁰ <http://elibrary.law.psu.edu/cgi/viewcontent.cgi?article=1072&context=jlia>

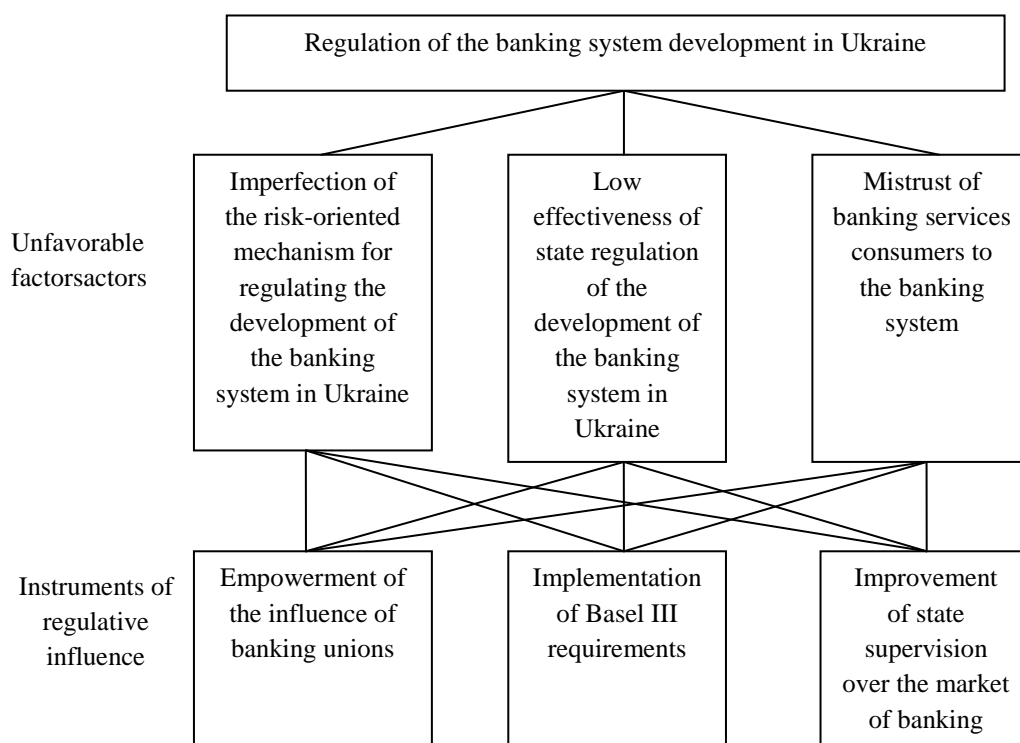


Fig. 1. Regulation model of the banking system development in Ukraine

Source: own on the described data sample (SSSU 2018)

The Basel Committee on Banking Supervision is continuously monitoring the state of adoption of the Basel III Standards. The researchers therewith note some of the negative results of such a globalized regulation. Firstly, there is a risk that the impact of Basel III will be diluted by the changes at the national level as exemplified by the EU, in the member states making a decision to follow the implementation of the Basle III rules. Switzerland has intensified the recommendations of Basel III, but, acting ahead of Basel III's final recommendations, Swiss banks may face a lack of competitiveness¹¹. As for the Ukrainian legislation, similar requirements to the capital of banks are regulated in the Instruction on the procedure for banking regulations in Ukraine, approved by the Resolution of the Board of the National Bank of Ukraine as of 28 August 2001, No. 368 (hereinafter referred to as Instruction No. 368). Thus, in this Instruction, similar norms are defined as tier I capital adequacy ratio (N3) (tier 1 capital under Basel III), which should be not less than 7% (since 1 January 2019), regulatory (adequacy) capital adequacy ratio (N2), which corresponds to the capital ratio in the EU and is defined as the ratio of regulatory capital to total assets and certain off-balance sheet instruments weighted with the degree of credit risk after their reduction in the prescribed manner and for operating banks to be at least 10%.

¹¹ <http://elibrary.law.psu.edu/cgi/viewcontent.cgi?article=1072&context=jlia>

Table 8

Identification of priority instruments of regulatory impact on the banking system
development in Ukraine

Regulatory impact tools	Imperfection of risk-oriented mechanism for regulating the of the banking system development in Ukraine	Low effectiveness of state regulation of the development of the banking system in Ukraine	Mistrust of banking services consumers to the banking system	Priority	Rank
	0,584	0,281	0,135		
Empowerment of the influence of banking unions	0,135	0,105	0,584	0,187	3
Implementation of Basel III requirements	0,584	0,258	0,135	0,432	1
Improvement of state supervision over the market of banking services	0,281	0,637	0,281	0,381	2

Source: Pukala R., 2017

Moreover, in accordance with Paragraph 129 Basel III, the capital conservation buffer is formed over the normative value of fixed capital and is set at 2.5%. In Ukraine, in accordance with Instruction No. 368, a similar stock buffer (capital conservation) is introduced from 1 January 2020 and gradually increases to 0.62% to 2.5% by 1 January 2023.

Basel Committee documents called Basel III consist of International Foundations for Assessing Liquidity Risk, Standards and Monitoring¹²; Common Regulatory Basis for Enhancing Banking Resilience and Banking Systems¹³. The adoption of Basel III is aimed at addressing the crisis phenomena that arose in 2008. In order to address market problems identified by the crisis, the Basel Committee proposed the reform of an international regulatory framework to strengthen the banking level or microprudential regulation, which would enhance the sustainability of a particular financial institution during periods of

¹² <https://www.bis.org/publ/bcbs188.pdf>

¹³ <http://www.bis.org/publ/bcbs189.pdf>

stress. Reforms are macroprudentially focussed on managing system-wide risks that can be created in the banking sector and their cyclical gains. These micro and macroprudential approaches to supervision are interconnected, since with greater stability at the individual level of the bank the risk of system-wide shocks is reduced¹⁴. Basel III seeks to increase the required capital adequacy ratios compared to Basel II, which provide stricter risk assessment criteria, as well as to increase liquidity.

Basel III innovations also include a dynamic reserve, which will operate under the scheme of accumulation of funds in the phase of credit boom and loss during the crisis while not putting pressure on profitability and equity. The previous system provided for the creation of reserves for possible losses during the default, which inevitably worsened the already difficult position of the bank (Kushnir O. S., 2016).

As a result, according to O. Ivanytska, the basic provisions of capital and liquidity standards, according to Basel III, include a higher requirement for a minimum capital of the first order, a new capital conservation buffer, a countercyclical buffer, a capital ratio to borrowed funds, the minimum level of the aggregate coefficient of capital adequacy¹⁵. Thus, in Art. 26 (EU) 575/2013, tier one capital includes: (a) equity instruments subject to the requirements of Articles 28, 29 of this Regulation; (b) paid-in capital in excess of par value from the issue of instruments specified in Par. a of Art. 26 of this Regulation; (c) retained income; (d) accumulated other total revenue; (e) other reserves; (f) general reserves for bank risks. The additional level 1 capital consists of the following elements: (a) of the level 1 supplementary capital instruments that do not relate to equity instruments of level 1 or level 2; (b) issue proceeds from the issue of instruments specified in paragraph a of Article 51 of this Regulation. According to Art. 62 tier 2 capital consists of the following elements: (a) from instruments and subordinated loans provided for in Article 63 of this Regulation; (b) issue proceeds from the issue of instruments specified in paragraph a of Article 62 of this Regulation; taking into account the adjustment requirements as well for the credit risk factor provided for in this article.

The listed documents of the Basel Committee systemically improve, depending on the sequence of their adoption, components of banking supervision and regulation. As noted by three such traditional components are: Enhanced Minimum Capital & Liquidity Requirements; Enhanced Supervisory Review Process for Firm – Wide Risk Management and Capital Planning; Enhanced Disclosure & Market Discipline¹⁶.

As for the banking system of Ukraine, the Basel Accords are, firstly, necessary for carrying out transactions in international markets, and, secondly, in the event of the introduction of their requirements into NBU's normative acts namely.

What concerns modernization of the requirements of the Basel Committee, according to the Association of Ukrainian Credit and Banking Union (UKBU), the fulfillment of the regulatory capital adequacy ratio is more significant than the compliance with the minimum statutory capital, as provided in Basel III (Konopatska, L. V., 2012).

¹⁴ <https://www.bis.org/publ/bcbs189.pdf>

¹⁵ <https://www.bis.org/publ/bcbs128.htm>

¹⁶ <http://repository.law.umich.edu/mjil/vol36/iss1/2>

Conclusions

Program documents for development of the banking system in the context of formation of Ukrainian economy should be adopted at the level of laws with a clear regulation of the powers of state authorities responsible for implementation of the statutory provisions.

The Basel Capital Accord is a powerful and complex project, the successful implementation of which requires special training of both supervisors and banking institutions. Most of Basel regulations are quite complex, so their full application in banking practice in Ukraine requires gradual reformation.

Basel II provides three alternative methods to measure operational risk, each of which has its orientation: the base indicator method determines the largest amount of capital reserve and is the least sensitive to risk, calculation of the coefficient of equity capital adequacy, taking into account operational risk volumes by the alternative standardized method and according to the basic indicators method there are no significant differences.

Moreover, there is some inconsistency in these approaches, which requires the transition to Basel III, which according to the calculations carried out by the authors will have a priority regulatory influence on the development of the banking system in Ukraine.

The implementation of recommendations of the Basel Committee in Ukraine is an element of the competitiveness of the banking system, since the Basel Capital Accord has modern approaches to banking regulation and supervision, the main purpose of which is to ensure the capital adequacy of banks and to improve the risk management system that will contribute to its sustainability.

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