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Three Objectives of International Banking Regulation: Analysis of Their Interrelationship and Issues

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ABSTRACT

In response to the Global Financial Crisis of 2008–2009, international financial regulators tightened the regime of banking supervision in order to minimize systemic risks, strengthen banking sector resilience and ensure financial stability. Given the increased level of credit risks and the issue of liquidity in the banking sector, as well as the role of banks in promoting the dynamics of the macro-environment, the objectives of banking regulation, through their interrelationship, may conflict with one another, and the research of this phenomenon is the **subject** of this article. The academic literature excludes research that provides definitive evidence on whether post-crisis banking regulation reform has achieved each of the abovementioned goals, determining the **relevance** of our study. The **scientific novelty** is attributed to the principally different approach proposed by the authors in assessing the effectiveness of the post-crisis model of international banking regulation, which is based on the analysis of the interaction and contradictions of the objectives of modern regulatory policy. The **purpose** of the study is to identify the extent to which the objectives of the post-crisis regulatory model were achieved and to what extent regulatory efforts contribute to the reduction of systemic risks. To achieve the research objectives, the authors applied methods of statistical and comparative analysis, synthesis of factors underlying the post-crisis regulatory mechanism, systematization, generalization and forecasting. The authors analyzed the main elements of the regulatory reform, examined the dynamics of the banking sector, and assessed the impact of the reform on systemic risks and economic growth. The research **results** show that tighter supervisory standards strengthened bank stress resilience, reduced systemic risks, and had a limited impact on economic growth. The article **concludes** that the objectives of banking regulation actively interact, but do not conflict: a consistent transition to the new Basel III standards allows each objective to be achieved.

Keywords: banking regulation and supervision; Basel III; credit risks; systemic risks; liquidity; systemically important banks; financial stability; economic growth

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INTRODUCTION

Objectives of the Post-Crisis Regulatory Model

The Global Financial Crisis of 2008–2009 demonstrated the inevitability of an international reform of banking regulation (further — reform), aimed at reduction of risks in the banking sector to the level necessary to maintain financial stability regardless of the macroeconomic crises and external shocks. The microprudential regulation segment developed by the Basel Committee on Banking Supervision (further — BCBS), known as Basel III, aims at stress resilience of banks by minimizing their credit (and, consequently, systemic) risks, and ultimately — to restore their contribution to financial stability and economic growth.

The adoption of Basel III rules by BCBS member states has increased the resilience of the banking industry. This is demonstrated by the fact that despite non-economic origin of the COVID-19 pandemic, banks in most countries continued to perform their function of financial intermediation,[1] although a crisis mitigation and extra-soft monetary policy has also contributed to ensuring sufficient liquidity in the banking sector. While banks have largely successfully adapted to Basel III, its minimum capital adequacy requirements pose certain restriction on lending, which could decelerate economic growth. However, the decrease of GDP and the cost to the economy because of financial crises that may have arisen in the absence of reform would have been greater and more likely to have negative long-lasting effects.

In these conditions, the reform concentrated on banks' intermediation function with strong supervisory criteria, as well as banks' role as open market liquidity providers. However, along with higher level of banks' stress resilience the reform may have a negative effect on their credit capacity, thus adversely affecting economic growth. This situation, in our opinion, determines the three regulatory policy objectives, the achievement of which will determine financial stability and economic growth:

- minimization of credit risks as a contribution to consistency of banking performance;
- minimization of systemic risks as a contribution to higher stress resilience of banks;
- adaptation of banks to the post-crisis regulatory model.

Based on the reform objectives, our paper explores the interplay: how the reform affects each of the objectives and whether there are contradictions among them. Conclusions on increasing the efficiency of banking supervision and further improvement of banking regulation are based on the summary of research results and the examination of primary data. We are confident that, in the context of the contemporary risk management approaches, these findings will improve knowledge of the risks and their sources, which will allow financial regulators to optimize the search for the new risk mitigation tools while also evaluating the extent of the effect of the measures applied in the financial sector.

CREDIT RISKS OF BANKS

Approaches to Credit Risk Assessment

By the time the Global Financial Crisis struck, imbalances had accumulated in the banking sector between assets and off-balance sheet liabilities, assets and banks' own funds, as well as a growing deficit in banking sector liquidity.[2] As a source of risk, these imbalances, along with financial deregulation policies, could not help but become a "time bomb" for the financial sector.

[1] Bank for International Settlements (2020) Implementation of Basel standards: A report to G20 Leaders on implementation of the Basel III regulatory reforms. November. URL: https://www.bis.org/bcbs/publ/d510.pdf (accessed on 21.03.2022).

[2] Basel Committee on Banking Supervision. (2008). Comprehensive strategy to address the lessons of the banking crisis announced by the Basel Committee. URL: https://www.bis.org/press/p081120.htm (accessed on 21.02.2022).

Since credit assets are a core element of banking activities, the reform mainly focused on credit risks. The reform measures introduced a dependence of the minimum capital adequacy on the amount of risk-weighted assets (further — RWA). While assets are evaluated based on credit, market, and operational risk, credit risk has the greatest impact on RWA, given that credit assets account for at least 60–70% of bank assets. Accordingly, the stress resilience of the bank and its viability depend on credit risk, which is actually the essence of the main block of the reform. On the other hand, the degree to which the RWA methodology affects the comparability of capital adequacy and investor confidence in credit risk indicators will be determined by the cost of capital and other operating costs, which will contribute to a fair competitive environment in the banking sector. As competition increases, the level of credit risk will decrease [1], and a higher level of investor awareness of the financial position of banks will open up new opportunities for attracting capital at a relatively low cost.

Capital Buffers as a Means of Credit Risk Management

A fair assessment of the RWA is necessary not only for the comparability of credit risk levels, but also for regulatory action to strengthen bank stress resilience. It is a question of additional surpluses (buffers) to capital adequacy standards in order to ensure the lending to the economy in an amount that would not depend on crisis phenomena, as well as to absorb possible costs, thereby contributing to stability in the banking sector [2].

Strengthening banks' credit risk management ability, for example through the introduction of an IRB (Internal Ratings-Based) approach, along with increased supervisory requirements not only improved their stress resilience and market discipline, but also significantly contributed to reduction of their risks. It is obvious that the most important criteria for the effectiveness of post-crisis regulation is continuity of the bank's financial intermediation function during uncertain times rather than the bank's key performance indicators. It is, therefore, not surprising that additional capital buffers have reduced shortage of capital [3], despite a slight decrease in loan growth rates [4, 5],[3] increased operating profits [6] and banks' ability to absorb risks even during credit expansion [7]. Moreover, higher capital requirements contributed to higher quality of credit assets [8]. Thus, the reform has helped to resolve several issues, which lifted obstacles to the risk mitigation efforts, thus increasing the integrity of banking performance, which is the key to financial stability.

STRESS RESILIENCE OF BANKS

The lessons of the global financial crisis demonstrate the high vulnerability of banks to external challenges, regardless of their size, market specialization, and activity in financial markets. The forefront reforms, which emphasized heightened supervisory standards, have contributed not only to the reduction of credit risks but also to the strengthening of banks' resilience and the minimization of systemic risks. Further studies have shown the indispensability of such an approach, both within individual banks [9] and in the banking sector as a whole [10, 11].

The effectiveness of the post-crisis model of banking regulation is demonstrated by the growth of the Common Equity Tier 1 (CET 1) capital of the EU banks — from 12.72% in the second quarter of 2015 to 15.6% in the second quarter of 2021, and Tier 1 capital — from 13.44% to 16.87% in the same period. Banks' additional efforts in increasing their equity were supplemented by improved control over credit quality, leading in a decrease of non-performing loans

[3] This conclusion is ambiguous: a number of studies indicate that international banking regulation reform had no impact on the amount of loans (see, for example, [5]).

(NPL) from 7.48% to 2.32% to total loans. Furthermore, banks' ability to absorb external shocks has improved, reducing the perspectives of risk transformation into a system-wide economic crisis during the COVID-19 pandemic.

Systemically Significant Banks and Systemic Risks

In the framework for stress reduction in the banking sector, international regulators have identified the largest internationally active banks as a potential source of macro-financial instability, while being vulnerable to external shocks, as a separate supervisory category. Such banks are classified as global systemically important banks (further — G-SIBs), and increased supervision has been implemented. In contrast to the deregulation period, a bank's systemic significance is defined not as the risk of G-SIBs bankruptcy, but as the impact of its dysfunction on the state of the financial sphere and macroeconomic conditions.

Compared to other banks, G-SIBs have a significant impact on financial stability, including through risk transmission channels [12, 13], resulting in an increased level of associated risks in the event of instability. The specificity of G-SIBs is reflected in the BCBS methodology,[4] according to which they are subject to additional capital buffers depending on the level of their systemic importance: the higher the level, the greater the buffer.

Despite the efforts of regulators, the additional capital buffer for G-SIBs did not completely reduce systemic stress, including due to the lack of market discipline [14]. The matter is that notwithstanding regulatory restrictions, the fall in the amount of G-SIB transactions, that is associated with higher risks, have not reached a level at which international regulators' responsibilities for financial stability can be performed efficiently. In this regard, in 2015, the post-crisis regulatory concept was complemented by TLAC, a consolidated potential loss absorption indicator that increases G-SIBs' responsibility in relation to market discipline. Such an approach has contributed to strengthening G-SIBs' stress resilience, as evidenced by the transfer of some G-SIBs into buckets with lower systemic importance at the turn of the 2020s.[5]

As a result, the reform has reduced systemic risks [15] and, consequently, the risks of financial distress. It has also contributed to reducing the level of interconnectedness of G-SIBs [16], promoted diversification of the sources of bank profits [17]. Moreover, their simplified operating models have also contributed to alleviation of systemic stress [18]. However, while bank's performance integrity remains one of determinants of financial stability during crises, it is not clear to what extent compliance with Basel III supervisory standards will remain a stress-resilience factor in the event of new external shocks. In reality, during instability the banking sector, compared to other sectors of the financial system, becomes a source of systemic risks [19], especially due to the increased level of systemic significance of banks stipulated by crisis developments [20]. This issue is in line with the dilemma between the amount of capital required to maintain stress resilience and the cost of additional capital necessary to ensure continuity of banks' financial intermediation function. Since the balanced approach to the dilemma will determine credit capacity of banks, the level of stress resilience in the banking sector will determine the pace of economic growth based on which it will be possible to assess costs associated with the post-crisis recovery.

[4] Basel Committee on Banking Supervision (2021) The Basel framework. SCO40 — Global systemically important banks. URL: https://www.bis.org/basel_framework/chapter/SCO/40.htm?inforce=20211109&published=20211109 (accessed on 21.03.2022).

[5] Financial Stability Board. List of Global Systemically Important Banks (for the relevant years). URL: https://www.fsb.org/ (accessed on 22.03.2022).

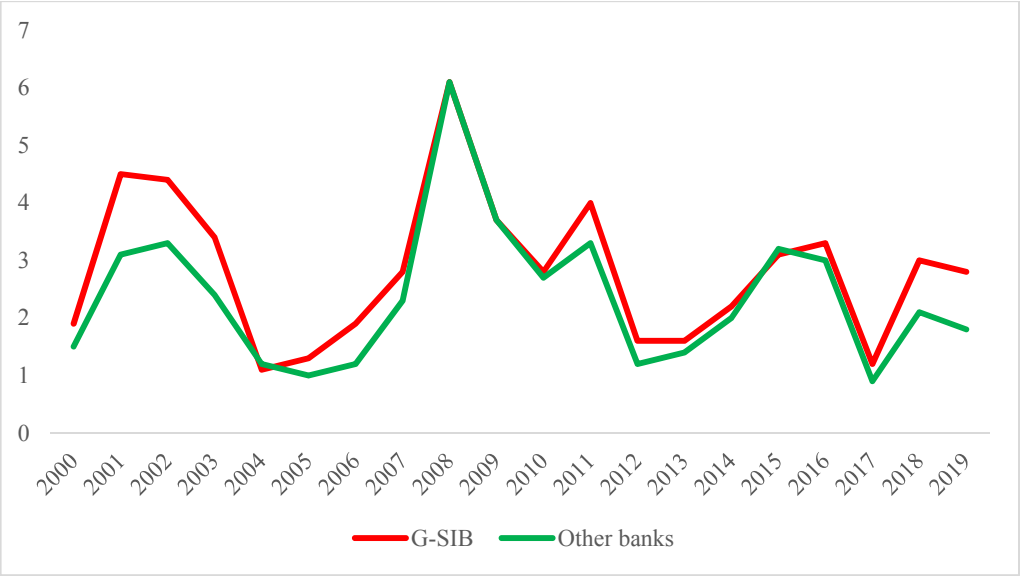

Fig. 1. **Dynamics of ΔCoVaR for G-SIBs and the Remaining Banks in 2000–2019**

Source: Furukawa K. et al. [22].

Systemic Risks in the Context of Microprudential Supervision

The modern world economy is affected by many factors, making it difficult to assess systemic risks. Despite the fact that the reform has contributed to their decrease, the absence of consistent approaches to analyzing the risks of systemic stress dilutes the understanding of stress resilience and financial stability.

The financial area experts are making efforts to develop the concept of systemic risk assessment. One of the approaches is ΔCoVaR [21], which defines systemic risks as financial system risks caused by a particular event (e.g., crisis developments) that, in turn, may cause dysfunction of a bank. Another approach relates to the aggregate ΔCoVaR [22], which is applied for a group of financial institutions, including G-SIBs, and demonstrates its rapid increase for all banks in the sample. Its fluctuations during the Global Financial Crisis and subsequent decline, while remaining volatile, reflect periods of economic instability (*Fig. 1*). The decrease of ΔCoVaR indicates a reduction in systemic risks in the global scope, remaining generally higher for G-SIBs compared with other banks, i.e. G-SIBs' level of systemic risk exceeds the risk of the other categories of banks.

Systemic risks are also evaluated using the SRISK coefficient [23, 24]. Compared to ΔCoVaR, with SRISK one can analyze capital shortages based on the specifics of banking performance, including the size of assets, leverage ratio, and risk level. However, SRISK may overestimate the level of systemic risk, as its original version does not include TLAC (see above). Alternatively, if the assets used in the calculation of TLAC are taken into consideration, it becomes apparent that in 2019, the share of G-SIBs with capital shortages because of a systemic stress event was less than in 2007, i.e. before the Global Financial Crisis (*Fig. 2*).

Assessing bank stress resilience from a systemic risk perspective requires focused attention from financial regulators. There are numerous works in the economic literature that are based on models with application of ΔCoVaR and SRISK, which contributes to a clearer understanding of the systemic risk sources, the extent of systemic stress, and the limits of their impact on both individual banks and the banking sector at large (see, for example, [25, 26]). Besides, by applying SRISK, it was revealed the response of the potential systemic risks on the monetary policy decisions [27], that expands the

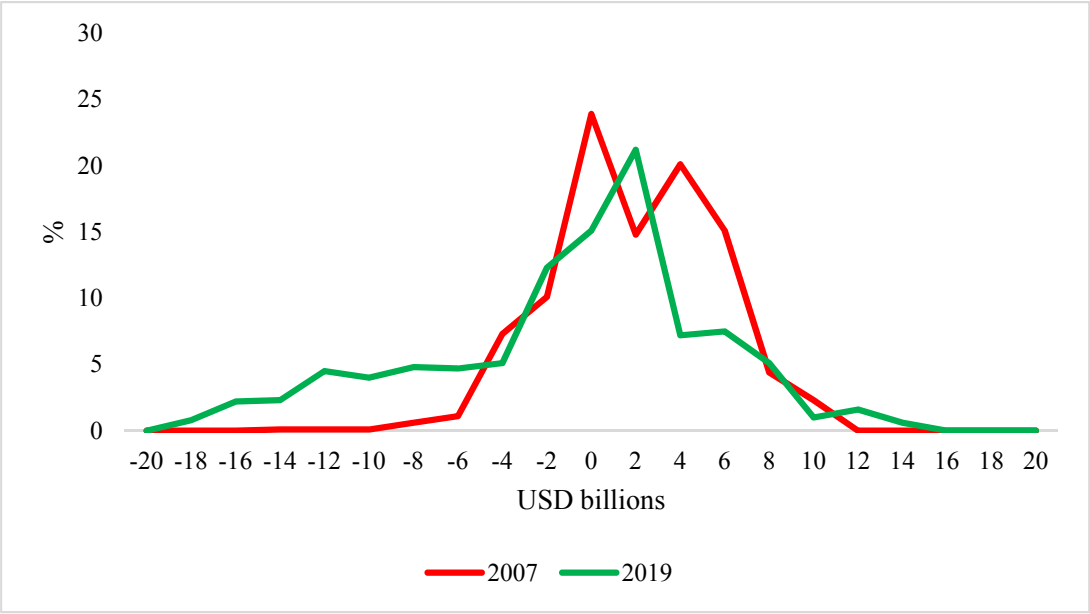

Fig. 2. **Distribution of SRISK for G-SIBs in 2007 and 2019**

Source: Furukawa K. et al. [22].

understanding of the banks' risk-oriented behavior. Calculations based on such models typically show higher level of systemic risk than those identified by the application of microprudential standards. It is likely that, if introduced to regulatory practice, such an approach will meet the expectations of international regulators in their search for effective regulatory instruments that would absorb losses stemming from external shocks. This would allow to accurately calculating the amount required by banks to ensure their performance efficiency despite economic instability and crisis developments, and ultimately — to increase the efficiency of approaches towards financial stability.

ADAPTATION OF BANKS TO THE POST-CRISIS REGULATORY MODEL

Banks' Performance Efficiency in the Context of Tightened Microprudential Supervision

Although the reform has contributed to strengthening the stress resilience of banks, their adaptation to the new supervisory standards and their role in ensuring economic growth still require further research. The post-crisis mechanism of microprudential policy has considerably improved bank capital structure. According to the Bank of International Settlements, the level of CET 1 capital adequacy ratio of 105 internationally active banks increased from 7.2% in 2011 to 14.0% in 2019, the adequacy of Tier 1 capital increased from 3.5% to 6.0%, and the amount of highly liquid assets on their balance sheets increased by 50% in the same period — up to 10.7 trillion euros.[6]

The growth of banks' capital created new opportunities for them: the focus of their activities changed from the securities markets to traditional banking area. Despite increased minimum leverage requirements and decreased return on equity (ROE), banks have been able to strengthen their stress resilience, as noted above. By the end of 2016, the process of the banking sector adaptation in the countries that implemented the Basel III standards had been completed.[7]

The objectives of higher stress resilience required banks to direct their internal

[6] Bank for International Settlements (2021) Crossing the Basel III implementation line. 15 April. URL: https://www.bis.org/speeches/sp210415.pdf (accessed on 24.03.2022).

[7] Structural changes in banking after the crisis. Bank for International Settlements. January 2018. P. 50. URL: https://www.bis.org/publ/cgfs60.pdf (accessed on 24.03.2022).

resources to increase equity and attraction of additional liquidity as a cushion in periods of instability. Therefore, the adaptation process have to decide between stress resilience of banks and financial stability on the one hand, and economic growth, on the other.

Banks' Adaptation to Post-Crisis Regulation as a Key to Economic Growth

In the early stages of the reform, financial experts opined that higher minimum capital adequacy requirements would inevitably slowdown in GDP growth rates, resulting in the reduced access to credit facilities.[8] However, as the reform developed, so did the assessment of its effect on economic growth. The introduction of the Basel III standards, along with the macroprudential regulation measures, has contributed to certain reduction in the level of pro-cyclicality of banking activities [28] mainly due to the shift to a more prudent credit policy. In such circumstances, the credit activity of banks should decrease and, accordingly, be a factor restraining economic growth [29]. However, a number of studies show the opposite effect — the counter cyclicality of regulatory policy does contribute to economic growth [30, 31], which is stipulated not only by the higher level of credit capacity of the banks, but also by their prioritization of traditional banking services.[9]

The increase in the bank lending capability amid the rigorous regulatory framework looks paradoxical, but there are reasonable reasons behind this phenomenon, including the timely and immediate adjustment of their operating models [32], the diversification of the revenue sources [33], the optimization of the asset structure [34], and the increase in operating profits [6]. At the same time, banking activities are often associated with increased risk [35], including in order to squeeze additional profits needed to maintain regulatory compliance. On the other hand, the reduced dependence of banking performance on the rigor of the supervisory standards demonstrates the successful adaptation of banks to the reform, which substantially increased their resilience to external shocks[10] and reduced their vulnerability to crisis developments during the COVID-19 pandemic, despite its unexpectedness and non-economic causes.

In this regard, the only way in solving the dilemma between economic growth and financial stability is to ensure the banking sector's ability to provide the market with additional liquidity regardless of the specifics of supervisory requirements and external shocks. In other words, the level of conservatism in banking activities and supervisory requirements should be limited to the extent that they do not hinder economic growth and contribute to mitigation of systemic stress.

CONCLUSION

International banking regulation reform has achieved the objective of ensuring the stress resilience of banks, which is one of the main contributors to financial stability. In particular, the introduction of the post-crisis supervisory standards has been accompanied by the improved approaches to credit risk management, reduced bank capital shortage and lower level of systemic risks. At the same time, the reform's impact on economic growth remains ambiguous. The more rigorous supervision may reduce economic activity. On the one hand, the reform resulted in a short-term credit contraction, which limited lending in the early stages of the reform and led to a relatively slow post-crisis recovery. On the other hand, the reform prevented new financial shocks, the economic cost of which

[8] Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements. Bank for International Settlements. December 2010. P. 1. URL: https://www.bis.org/publ/othp12.pdf (accessed on 26.03.2022).

[9] So, it draws attention to the increase of the balance sheet of the above 105 banks over the period considered by 25%, which occurred mainly due to increased loans volumes.

[10] Structural changes in banking after the crisis. Bank for International Settlements. January 2018. P. 50. URL: https://www.bis.org/publ/cgfs60.pdf (accessed on 26.03.2022).

could have devalued all previous efforts by international regulators in ensuring the integrity of the banking sector. This is to note that consistency of the reform yielded in banks' adaptation at minimal apparent cost, which has allowed them to restore their role as drivers of economic growth.

The results of this study show the interplay and complementarity of the objectives of the reform, contributing to the formation of economic immunity in the banking sector. At the same time, the effectiveness of their interplay is constrained by the lack of a one-size-fits-all approach in assessing credit and systemic risks, as well as the absence of consensus on the adaptability of banks to the reform.

Despite the timeliness of regulatory actions on systemic risks, future periods of instability might require principally different regulatory approaches in the absence of the economic recipes required for mitigation of such threats. However, with the stress resilience of the world's banking systems during the COVID-19 pandemic, it is unlikely that banks will be vulnerable to external shocks leading to their dysfunction. Given the uncertainty and potential severity of future crises, as well as the need to reinforce the regulatory framework's crisis mitigation base, the adoption of singular approaches to systemic risk assessment in supervisory practice seems unavoidable. In this regard, further improvement of the regulatory mechanism could be based on common, internationally agreed stress resilience criteria for banks subject to the specifics of the national banking systems. At the same time, regulatory policy convergence could be based on EU experience in the development of supranational system of financial regulatory authorities. This will require incentives for convergence and, for non-BCBS countries, incentives for accession to the Basel Accords.

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