

THE REPUBLIC OF AZERBAIJAN

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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

RESEARCH ON THE IMPACT OF THE TRANSITION TO BASEL III STANDARDS ON ECONOMIC DEVELOPMENT OF AZERBAIJAN

Speciality: 5308.01 - General Economy

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GENERAL DESCRIPTION OF RESEARCH

Relevance and study level of topic: In a market economy that operates based on objective economic laws, one of the main leading lines in the management system of macroeconomic processes is the country's financial-banking system. In this regard, it is impossible to talk about a high dynamic of economic development in a state with a weak banking system. The effective regulation of the banking system, which is considered a risky activity area, is of great importance in achieving economic development. These regulatory principles are based on the unified Basel standards adopted by most regulatory bodies on the global stage. The purpose of the Basel III standards is to enhance the reliability and stability of the global financial system, apply a more comprehensive approach to free competition environments and risks, and establish the principles of cross-border operations of the international banking system on a unified basis. The history of regulating the banking sector in our country based on Basel standards is quite short, and the effective implementation of Basel III standards, taking into account the local characteristics of the country's economy and banking sector, is of particular necessity. Therefore, researching the impact of Basel III standards on the country's economic development requires special investigation and highlights the relevance of this dissertation work.

Several works by distinguished foreign and local economists have been dedicated to the study of the interaction between the banking sector and the real sector in the context of the overall economy. The research of prominent scholars such as S. Mammadov, U. Aliyev, M. Baghirov, M. Hasanli, Z. Mammadov, A. Karimov, Z.A. Samedzadeh, E. Sadiqov, I. Seyfullayev, and others has been of great importance in studying the effects of the development of the banking sector on the real sector and its role in economic development. At the same time, the modern characteristics of the interaction between the banking and real sectors of the economy highlight the necessity of continuing research in this area. It requires the examination of the theoretical and methodological basis of the modern study of the interaction between the banking and real sectors and the analysis of how the real sector's development can be ensured through the banking sector, exemplified by the transition to Basel III, one of the most advanced

methodological frameworks. In this dissertation, the Basel III standards, which are distinguished in international scientific literature for their complexity and the lack of a universally accepted perspective, but are of significant importance for the development of the banking sector, and their impact on economic development through the banking sector, have been studied.

The object and subject of the study: The object of the research is the role of Azerbaijan's banking system in economic development as an important component of the economy. The subject of the research is the regulation of the banking system based on an analytical approach, the diagnostic state of the implementation of Basel III standards, and the economic development indicators that arise from the impact of this regulation.

The purpose and main tasks of the study: The aim of the research is to enhance the supportive role of the banking sector in economic development based on the principles of Basel III and to study the challenges and opportunities that the implementation of Basel III standards may create in this direction. The research also aims to provide scientific recommendations for forming an approach to transitioning to Basel III standards in the country's banking sector. To achieve this aim, the following tasks have been identified in the research:

- Study of the existing regulatory oversight practices in the country's banking sector and formulation of scientific recommendations for their improvement;
- Assessment of the functional significance of the financial-banking system as one of the drivers of economic development;
- Analysis of the current development characteristics of the financial-banking sector and investigation of existing problems;
- Analysis of Azerbaijan's economic development trends and formulation of proposals to strengthen them;
- Examination of the interaction between the banking and real sectors of the economy and identification of their development characteristics;
- Analysis of international principles of banking supervision based on Basel principles and investigation of the conditions for their possible application in Azerbaijan and their impact on economic development;
- Study of the risks and challenges that may arise for the banking sector

and economic development in connection with the transition to Basel III standards in Azerbaijan, and the formulation of concrete scientific recommendations.

Research methods: In the dissertation work, analytical, statistical, analysis-synthesis, comparative analysis, systematic analysis, situational approach, diagnostic assessment, economic-statistical classification, logical generalization, econometric analysis based on the VAR model, simulations and mathematical calculations based on the Cook coefficient, mathematical calculations on BSKI, calculations based on the Compliance coefficient, SWOT, PESTEL analyses, diagnostic assessment according to Basel III, calculations based on HHI, evaluations based on international indices, corporate mapping, expert evaluations, and other methods were used.

As the theoretical basis of the dissertation, works by economists from various countries dedicated to the current state of the banking sector, the role of its enhancement in economic development, and the transition to Basel III, as well as the decrees, orders, laws, decisions, and normative documents of the legislative and executive bodies of the Republic of Azerbaijan, were taken into account. The research also utilized data from the Central Bank of Azerbaijan, the State Statistical Committee, other relevant institutions, private enterprises, and international organizations such as the World Bank, IMF, Bank for International Settlements, and the Basel Committee.

The main provisions for the defense: The following propositions, reflecting the objectivity of enhancing the role of the banking sector in economic development through the transition to Basel III standards, are presented for defense in the dissertation:

1. Investigation of the necessity for the emergence of Basel III standards and their theoretical-methodological foundations;
2. Study of the mechanisms through which Basel III standards and banking influence economic development;
3. Analysis of the development trends and interconnections between the Azerbaijani economy and the banking sector;
4. Comparative evaluation of the alignment of Azerbaijani banking legislation and the actual situation in the banking sector with Basel III standards;

5. Examination of the opportunities and mechanisms for enhancing the role of banking in economic development in Azerbaijan;
6. Assessment of the potential benefits and costs that Basel III standards may create for the Azerbaijani banking sector and economy;
7. Identification of the opportunities for transitioning the Azerbaijani banking system to Basel III standards, and the development of an optimal roadmap for Azerbaijan based on an analysis of international experiences in implementing Basel III principles and considering the specific characteristics of the local banking sector.

The scientific novelty of the research: The presented research is one of the first comprehensive scientific studies in Azerbaijan aimed at investigating the role of the banking sector in economic development through the implementation of Basel III standards. The scientific innovations achieved as a result of this research can be outlined as follows:

- The potential impacts of transitioning to Basel III standards on the development of the national economy have been evaluated, and strategies have been identified to reduce the costs and increase the benefits of the transition to these standards
- The current state of regulation in the country's banking sector has been evaluated in a comprehensive manner, and suggestions and recommendations have been made for effectively and appropriately utilizing the potential of Basel III standards for its improvement.
- Strategic analyses of Azerbaijan's banking sector have been conducted, and the factors hindering the transition to Basel III standards have been identified.
- Specific scientific proposals and recommendations have been developed regarding the aspects of Basel III that can foster development in the banking sector and national economy, along with optimal pathways for transition.
- The role of the banking sector in economic development has been clarified from the researcher's perspective, and factors obstructing economic progress have been identified, with solutions proposed for overcoming these barriers.
- The dynamics of financing and the development of real economic sectors through the banking sector have been compared, and specific proposals have been made to increase financing opportunities for the

real sector.

- Proposals and recommendations for the complex development of Azerbaijan's banking sector based on Basel III standards have been prepared.

The theoretical and practical significance and foundations of the research: The theoretical and practical significance of the research lies in the evaluation of the regulation of banking systems at the macro level within the framework of Basel III standards, the improvement of the financial and economic potential of banks, the establishment of a general regulatory framework within Basel III in banks and other financial institutions, and the formulation of proposals regarding the impact of the banking system on economic development. These proposals and recommendations can be used in the development of legislation, forecasts, and programmatic documents that determine the main directions for the formation and development of a civilized financial market, in the analysis and forecasting of socio-economic processes, in the determination of banking regulation policy at the Central Bank, in the teaching of subjects such as "banking," "financial markets," and "development economics" at universities, as well as in scientific research work.

Approbation and implementation of the results: The main theoretical provisions of the dissertation and the practical proposals arising from the research have been systematically presented at scientific and scientific-practical conferences during 2020-2024 and published in scientific journals. The research has also been presented at permanent scientific seminars and scientific-practical conferences as a relevant issue. A total of 16 scientific works by the author, with a total volume of 161 printed pages, have been published on the dissertation topic.

The name of the organization in which the dissertation work was carried out: The research was carried out at the Azerbaijan State University of Economics.

The total volume of the dissertation work with marking structural sections separately: The total volume of the dissertation, with the volume of the structural sections of the dissertation separately indicated, consists of: Dissertation work, introduction (12012 characters), 3 chapters (Chapter I – 73980 characters, Chapter II – 95822 characters, Chapter III – 79247 characters), conclusions and proposals (23538 characters), as well

as a list of abbreviations and 234 references. The total volume of the dissertation work (excluding 36 tables, 34 graphs, 2 figures and a 234-title list of references) consists of 284599 characters.

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SUMMARY OF THE DISSERTATION

The dissertation consists of an introduction, three chapters, a conclusion with recommendations, and a list of references. In the introduction, the relevance of the topic is substantiated, the objectives of the research are outlined, and the key tasks undertaken to achieve these objectives are presented. The main propositions and the scientific novelty, as well as the practical significance of the findings, are also discussed. In the first chapter, titled "**Theoretical Analysis of the Impact of Basel III Principles on Banking and Economic Development**," the necessary historical conditions for the emergence of Basel standards, the theoretical foundations of Basel III principles, the theoretical analysis of the relationship between economic development and banking, and the factors through which Basel III standards influence economic development are examined.

The Basel Committee was established at the end of 1974 as the Committee on Banking Regulations and Supervisory Practices in response to global financial crises, emerging as a logical outcome of the crises in international financial markets. The rules adopted by the Basel Committee over the years regarding the regulation of international banking have become known as Basel I, II, and III standards.

In Basel I, the primary focus was on credit risks, with key features including the 8% minimum capital requirement, the definition of capital, and the measurement of risk-weighted assets based on credit risks. The Basel II standards, adopted in 2004, introduced regulatory principles based on a three-pillar approach:

1. Minimum Capital Requirement,
2. Supervisory Review Process,
3. Market Discipline.¹

In terms of its impact on economic development and its greater significance, several innovations of the Basel III standards should be particularly highlighted. The Tier 1 capital requirement was increased from 4% to 6%, and additional capital requirements were established for

¹ *Basel III - International regulatory framework for banks: [Electronic resource] / Bank for International Settlements (BIS), - Basel, - October 29, 2023. URL: <https://www.bis.org/bcbs/basel3.htm>*

globally systemically important banks. The requirements for maintaining additional capital buffers allow banks to utilize reserves accumulated during periods of high economic growth during economic crises, thereby limiting pro-cyclicality in the economy. One of the main innovations of Basel III is the introduction of a 2.5% capital conservation buffer, aimed at mitigating losses during periods of economic and financial crises and market fluctuations. Basel III standards are designed to support the development of the real economy through the economic cycle.

Economic development, by its nature, encompasses broader categories than mere economic growth, including the improvement of the quality of life and economic well-being of the population in a society, region, or country. Empirical studies also show that countries with well-developed financial systems tend to experience higher economic growth rates. The presence of a robust banking sector supports economic stability, while a weak banking sector can contribute to economic turmoil. On a broader scale, it can be noted that these standards contribute to the formation of a safer financial and economic system by limiting economic growth to a certain extent. We can say that the implementation of Basel standards, which promote principles of corporate governance, transparency, effective regulation, and supervision in the banking sector, is of particular significance for economic development. The purpose of Basel III standards is to ensure that the banking sector can absorb shocks arising from crises, thereby minimizing the likelihood of risks being transmitted from the banking system to the economy. Basel standards contribute to the development of the regulatory framework, which is a fundamental element of economic development. They also play a role in training human resources, encouraging long-term investments, and ultimately fostering the application of technology and innovation, as well as the development of infrastructure. These factors are considered crucial for achieving economic development.

In the second chapter of the dissertation, titled "**Study of Banking Practices Based on Basel III Principles and Evaluation of Their Application in Azerbaijan's Banking Sector,**" the international experience regarding the application of Basel III principles and their impact on economic development, as well as the development trends in Azerbaijan's economy and banking sector, and the diagnostic evaluation

of the conditions for transitioning to these standards, are analyzed and assessed.

From the perspective of implementing Basel III criteria, the distinctive features of banking regulation that are suitable for the country, the needs of the local banking sector, local traditions, the development characteristics of the financial-banking system, sector risks, and regulatory resources are of significant importance. It is possible to note the potential impact of the transition to Basel III on the rankings of Azerbaijan in reports such as the World Bank's "Global Development Indicators" and the IMF's "Financial Soundness Indicators," "Macroprudential Policy Survey," "Global Economic Outlook," "Global Financial Stability Reports," "Article IV Consultation Reports," and others.

Among the regional countries, Georgia has already aligned its legislation regarding Basel III standards with the directives of the European Union. According to the 2013 directive of the "European Council," compliance with capital requirements is mandatory for the country's banks.² In Kazakhstan, the issue of implementing Basel III standards became relevant in 2015. As a member of the Basel Committee, Turkey has gradually regulated its banking sector in accordance with Basel standards.

Our analysis shows that the banking sector is more interested in providing long-term loans. The share of long-term loans in the total portfolio decreased to 81% in 2021 and increased to 82% in 2022. Statistical analyses indicate that as a result of ongoing reforms, the non-performing loan ratio in the banking sector has significantly improved, decreasing from 13.8% in 2017 to 2.9% by the end of 2022. The segment with the most problematic loans in the country is short-term loans issued in foreign currency. However, the predominance of short-term deposits poses a risk to the sector's stability. This could exacerbate the situation in the banking sector during times of crisis.

On February 2, 2021, the President issued a decree approving the National Priorities document for the next decade of development, and the

² Georgia - Financial Sector Assessment Program, Detailed assessment of observance of the Basel Core Principles for Effective Banking Supervision, IMF Country Report No 15/10: [Electronic resource] / International Monetary Fund, - Washington, - 2015. - 215 p. - December 7, 2023. URL: <https://www.imf.org/external/pubs/ft/scr/2015/cr1510.pdf> p.176

corresponding socio-economic development strategy for the first five years of these priorities was adopted. The share of the mining industry remains high in the composition of the added value created in the country's economy (48.6% in 2022). The second sector, which is crucial in terms of the country's economic development, is the trade and repair of motor vehicles sector, which accounted for 8.9% of the added value created in 2022, while the transportation and storage sector accounted for 6.5%, the manufacturing industry for 5.4%, the construction sector for 5.2%, and the agriculture, forestry, and fishing sector, which is the most important sector for employment and food security, for 5.1%. The share of financial and insurance activities in the created added value was only 1.8%.

An analysis of World Bank data shows that the average real economic growth over the past decade in Azerbaijan for the agriculture, manufacturing, and services sectors (3.9%, 4.1%, 5.2%, respectively) exceeded global averages (2.9%, 2%, 2.7%, respectively), while the industrial sector's growth (-1.4%) was below global averages (2.8%). As can be seen, the main reason for the country's economic growth indicators being lower than global averages is the recessive trend in real economic growth in the industrial sector over the past decade.³

Our analysis, based on the PESTEL methodology, indicates that favorable conditions exist for the phased transition to Basel III standards in Azerbaijan. In recent years, particularly during the pandemic, the gradual withdrawal of regulatory relief measures, new global macroeconomic challenges, and global trends towards alignment with Basel standards have led to an increase in risk-weighted asset indicators due to the tightening of the regulatory framework. This, in turn, has resulted in a decrease in capital adequacy ratios. The implementation of Basel III not only requires technical knowledge and skills but also demands that the megaregulator possess a robust legal framework, strong legislative foundations, adequate regulatory capabilities, and operational independence. High capital and liquidity requirements and the need to amend legislation for the application of macroprudential regulation often

³ *World Development Indicators: Growth of Gross Domestic Product. Data Catalog: [Electronic resource] / The World Bank, - Washington, - October 27, 2023. URL: <https://wdi.worldbank.org/table/4.1>*

encounter resistance from financial market participants. The 2023 results of the "Global Innovation Index" indicate that Azerbaijan lags behind several regional countries in terms of the share of credit provided to the private sector in the overall economy (Georgia ranks 43rd, Turkey 46th, Iran 59th, Russia 61st, Uzbekistan 90th, Belarus 92nd, Ukraine 101st, while Azerbaijan is ranked 106th).⁴

In the third chapter of the dissertation, titled "**Mechanisms for Strengthening the Role of Basel III Standards and Banking in Ensuring Economic Development**" the potential and prospects of the banking sector's impact on economic development in Azerbaijan, as well as mechanisms for mitigating the slowing effects of Basel III on economic development and optimizing the impact of this transition, are examined.

In recent years, the improvement of the legal and regulatory framework, the modernization of financial infrastructure, and the implementation of institutional development initiatives and state programs in the country's financial and banking sector have yielded positive results. Our analysis shows a strong correlation (0.772) between the dynamics of GDP and the volume of loans issued by the banking sector since 2000. Although GDP has increased 3.1 times over the past 10 years, the volume of loans to economic sectors has seen only a modest increase (57%), leading to a decline in financial depth from 19.7% to 9.9%. Financial depth has decreased significantly in the agriculture (58 percentage points), energy (14.7 percentage points), construction (51.5 percentage points), trade and services (44 percentage points), and transport and communications (50 percentage points) sectors.

It is important to consider that high risk levels might lead banks to shift their focus from financing small and medium-sized enterprises (SMEs) to funding large corporations. This makes it essential to pay special attention to the access to finance and financial inclusion of SMEs, which are crucial for economic development, when implementing Basel III standards.⁵

⁴ Dutta, S., Lanvin, B., Rivera, L., Wunsch-Vincent, S. *Global Innovation Index 2023, Innovation in the face of uncertainty, Research Work, 16th Edition* [Electronic resource] / World Intellectual Property Organization (WIPO), Geneva, 2023. 250 p. – October 23, 2023. URL: <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023-en-main-report-global-innovation-index-2023-16th-edition.pdf>

⁵ Jones, E., Beck, T., Knaack, P. *Mind the gap: Making Basel standards work for developing*

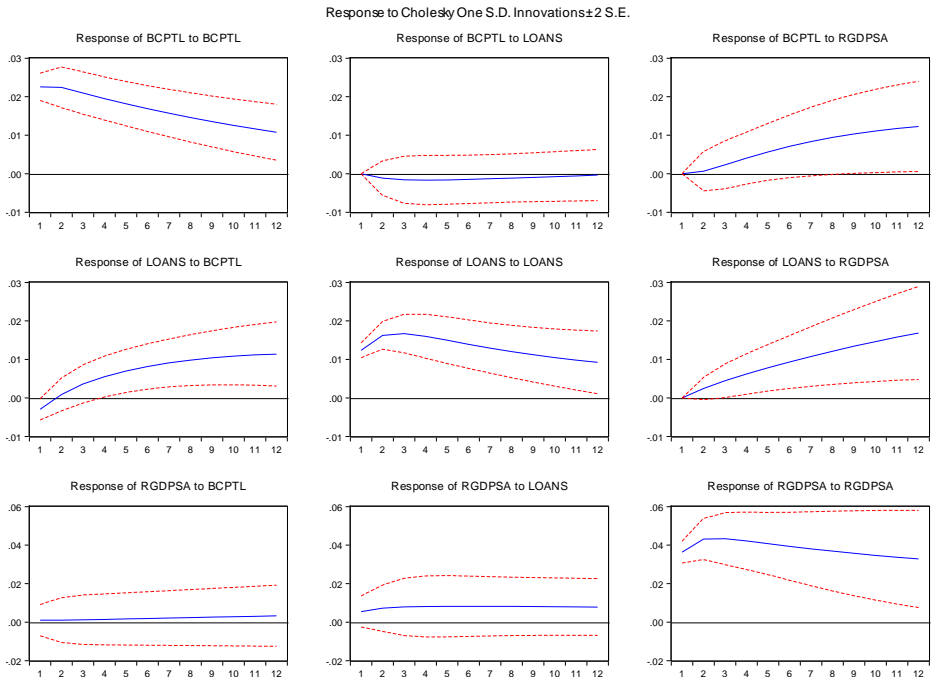
The macroeconomic impact of the implementation of Basel III has been assessed using the Vector Autoregressive (VAR) model. In this study, three indicators have been used to construct the proposed model: bank capital, total bank loans provided to consumers and companies, and gross domestic product (GDP). The constructed model can be expressed as follows:

$$\Delta Y_t = c + \sum A_p \Delta Y_{t-p} + v_p$$

In this model, Y_t $n \times 1$ vector of endogenous variables, A_p is a matrix of coefficients to be estimated, c is the intercept vector of the model, v_p is the residual term with white noise. The vector of endogenous variables in this model includes changes in capital (BCPTL), the loan portfolio (LOANS), and real GDP (RGDPSA). The ordering of the VAR model is determined as BCPTL, LOANS, and RGDPSA. Once the optimal lag lengths are determined in the constructed VAR model, impulse response functions are calculated. These functions help to understand the effects of shocks on the variables within the model and also to identify the time periods over which these effects occur. The reactions of the variables to shocks are observed over 15 periods to determine how the shocks will unfold. The results indicate that:

- The impact of BCPTL (bank capital) on other variables is generally weak and diminishes over time.
- LOANS (credit) has a more significant impact, both on itself and on other variables.
- RGDPSA (real GDP) exerts the strongest influence on its own variable, while the effect of other variables on it is minimal.

countries, policy brief: [Electronic resource] / University of Oxford. - 2018, - Oxford, - 8 p.
 – November 28, 2022. URL: <https://www.geg.ox.ac.uk/sites/default/files/2018-09/Mind%20the%20gap%20-%20making%20Basel%20standards%20work%20for%20developing%20countries.pdf> p. 1



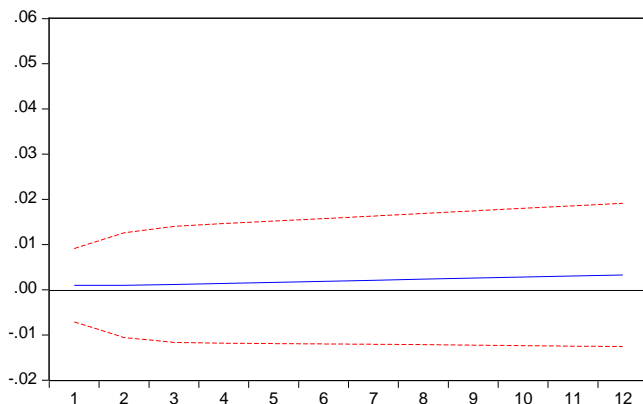
Picture 1. VAR model results

Source: Prepared by the author using the Eviews 12 software package

What concerns us most here is the reaction of GDP to changes in bank capital. The graph shows that shocks in BCPTL (bank capital) have little to no noticeable impact on RGDP (real GDP), or the impact is very weak. The results indicate that bank capital has a limited effect on real economic indicators, whereas credit (LOANS) has a more significant impact on economic activity. This is one of the most critical points to consider in the transition to Basel III.

Response to Cholesky One S.D. Innovations ± 2 S.E.

Response of RGDP_{SA} to BCPTL



Picture 2. VAR model results

One of the key indicators of the banking sector's resilience to financial crises is the "Banking Sector Fragility Index" (BSFI), which is calculated according to the following sequence and four formulas:

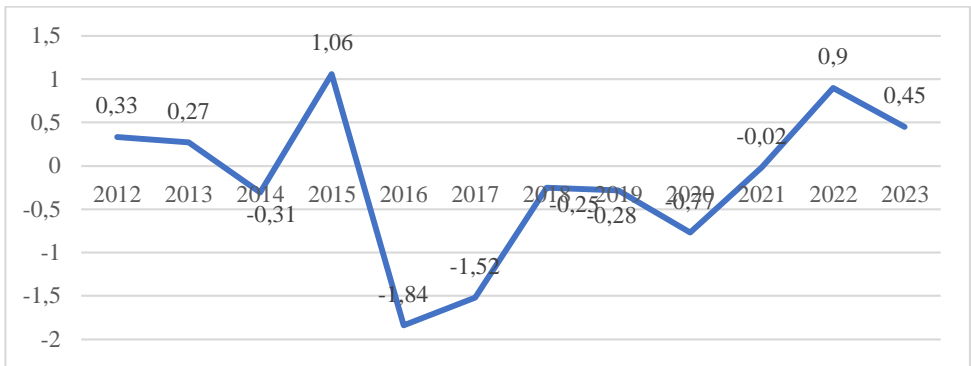
$$CPSt = \frac{LCPSt - LCPSt-12}{LCPSt-12}$$

$$FLt = \frac{LFLt - LFLt-12}{LFLt-12}$$

$$DEPt = \frac{LDEPt - LDEPt-12}{LDEPt-12}$$

$$BSFI = \frac{\frac{(CPSt - \mu_{cps})}{\sigma_{cps}} + \frac{(FLt - \mu_{fl})}{\sigma_{fl}} + \frac{(DEPt - \mu_{dep})}{\sigma_{dep}}}{3}$$

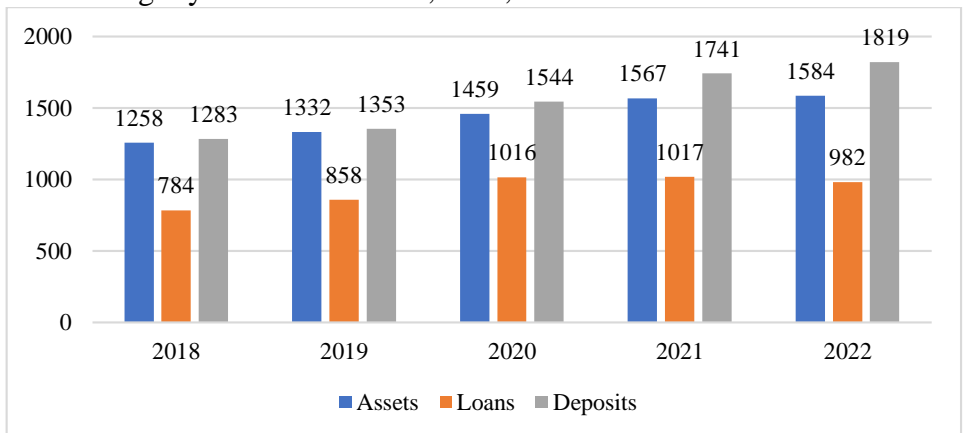
In these calculations, LCPS represents loans to the private sector, LFL represents the banking sector's foreign debt obligations, LDEP represents deposits of the population in banks, CPS represents the annual change in loans to the private sector, FL represents the annual change in banks' foreign debt obligations, and DEP represents the annual change in deposits. μ and σ represent the mean value and standard deviation of the indicators, respectively.



Graph 1. BSFI in the Azerbaijani Banking Sector, 2012-2023

Source: Compiled based on the results of calculations conducted by the author

Thus, our calculations using the three aforementioned indicators in the banking sector indicate that the resilience indicators of the banking sector have improved. However, they also show that risks increased significantly in 2015, with banks taking on higher risks, and that the sector's fragility increased in 2016, 2017, and 2020.



Graph 2. Trends in HHI in the Azerbaijani Banking Sector, 2018-2022

Source: Compiled based on the results of calculations conducted by the author.

Our calculations based on the Herfindahl-Hirschman Index (HHI) indicate an increase in concentration in the Azerbaijani banking sector in recent years. Our findings show that by the end of 2022, concentration in the banking sector was at a moderate level for assets and deposits (1584 and 1819, respectively) and at a low level for the loan portfolio (982).

The analysis shows that the phased transition to Basel III standards has already begun in Azerbaijan, and the current indicators in the banking sector, while not fully meeting the qualitative requirements, do align with the quantitative aspects of Basel III.

Based on the disclosed bank data on Tier 1 capital adequacy ratio and total capital adequacy ratio since 2016, our analysis conducted in the following manner indicates that under the current implementation of Basel III standards, 13% of banks do not meet the Tier 1 capital adequacy ratio, and 16% of banks do not meet the total capital adequacy ratio standards.

Compliance Rate = Number of Banks Below Basel III Standards / Total Number of Banks in the Dataset

Table 1. Comparative Analysis of Azerbaijani Banking Legislation, Actual Indicators, and Basel III

Name of the bank/Date	Prudential Requirement According to Basel III Standards	Requirement in Azerbaijani Legislation	Actual Average Indicators
Tier 1 Minimum Capital Adequacy Ratio	6.0%	For systemically important banks - 6% For other banks - 5%	Sector Average: 22,5%
Minimum Total Capital Adequacy Ratio	8.0%	For systemically important banks - 12% For other banks - 10%	Sector Average: 28,3%
Countercyclical Buffer	0-2.5%	0-2,5%	-
Liquidity Coverage Ratio (LCR)	Since 2019: 100%	Since 2025: 100%	-
Leverage Ratio	Minimum 3% Special calculation method for globally systemically important banks	Minimum 5% for systemically important banks. Minimum 4% for other banks	Sector Average: 13,7%
The minimum equity capital ratio, the capital conservation buffer, the sum of the minimum equity capital ratio and the capital conservation buffer, the sum of the minimum total capital and the conservation buffer, and the net stable funding ratio are not applied in Azerbaijani legislation.			

Source: Compiled by the author.

Statistical analysis based on 31 data points of the banking sector's Tier 1 and total capital adequacy ratios since 2016 indicates that the average sector indicators are 26.4% and 31.4%, respectively. The highest recorded values for Tier 1 and total capital adequacy ratios were 212.5% and 321.3%, respectively, while the lowest recorded values were 1.7% and 0%. The deviation from the average for both ratios is 24.7% and

34.3%, respectively. This indicates a significant disparity in financial stability among banks, with some being well-capitalized while others are capitalized below the average. The fact that the "skewness" for both indicators is greater than 1 (3.4 and 4.5, respectively) further confirms this. The right-skewed "skewness" (mean higher than the median) suggests that a few banks with very high capital adequacy ratios are pulling up the sector's average, while most banks have lower adequacy ratios.

If we perform calculations using the Cooke ratio based on the two indicators that form the total capital adequacy ratio in Basel III under the following two scenarios, it appears that the five mentioned banks would need an additional total capital of 44 million AZN or a reduction of risk-weighted assets by 339 million AZN, or 8.7%, to meet the total capital requirements.⁶

**Table 2. Initial Costs of the Transition to Basel III
for the Banking Sector**

Indicators	Accesbank	Bank Respublika	Rabita Bank	UniBank	Total
Current Total Capital Adequacy Ratio	11.8%	11.9%	12.1%	11.7%	-
Scenario 1 (Increasing Total Capital)	9,868,810	11,699,300	8,185,250	14,418,470	44,171,830
Scenario 2 (Reducing Risk-Weighted Assets)	75,913,923	89,994,615	62,963,462	110,911,308	339,783,308

Source: Compiled by the author based on data disclosed by banks.

$$W_{2013} = \frac{K_{\text{tier1}} + K_{\text{tier2}} - K_{\text{deduction}}}{R_{\text{cred}}}$$

Here, W_{2013} -represents the capital adequacy ratio, " $K_{\text{tier1}}+K_{\text{tier2}}-K_{\text{deduction}}$ "-represents the total capital after deductions, and R_{cred} -represents the risk-weighted assets.

⁶*Biolas, M. A.Solek. Evolution of capital adequacy ratio / M.Biolas, A.Solek // Recent issues in economic development, Economics & Sociology, - Volume 3, - Issue №2, - 2010, - p. 48-57.*

- Scenario 1. Increasing total capital to achieve a 13% ratio:
Required $(K_{tier1} + K_{tier2} - K_{deduction}) = R_{cred} \times 13\% - \text{current}$
 $(K_{tier1} + K_{tier2} - K_{deduction})$

- Scenario 2. Reducing risk-weighted assets to achieve a 13% ratio:
Required $R_{cred} = \text{Current } R_{cred} - (K_{tier1} + K_{tier2} - K_{deduction}) / 13\%$

The required total capital represents 1% of the total capital of the banking sector and 0.03% of GDP.

In summary, Basel III standards in Azerbaijan have the potential to impact economic development through several channels.

Table 3. Channels of Impact of Basel III Standards on Economic Development in Azerbaijan

Bazel III criteria	Positive Impact Channels on Economic Development	Negative Impact Channels on Economic Development	Ways to Mitigate Negative Impacts
Increased capital requirements	Promotes the banking sector and, consequently, economic stability	Slows down economic development due to limited credit availability	Gradual implementation and adaptation of the standards to local conditions Enhancing the potential and capabilities of the local banking sector Raising the culture of risk management Strengthening monitoring, evaluation, and accountability Reducing dependency on financing and credit sources and supporting the development of capital markets as an alternative financing source Expanding cooperation with international financial institutions and regulatory authorities of other countries Increasing public and banking sector awareness of changes in standards, their essence and benefits, and conducting transparent communication
High-Quality Liquid Asset Holding Requirements		Negative impact on credit accessibility and economic development	
Leverage Ratio (Limiting Bank Leverage)	Limits risk-taking	Restricts credit supply and negatively impacts investment and economic growth	
Counter-Cyclical Capital Buffers	Higher capital requirements during periods of high credit growth moderate credit booms		
General Risk Management Requirements	Strengthened risk management practices enhance the resilience of the banking sector and support sustainable economic development by preventing crises		

General Impact of Other Standards	<p>Increased trust in the banking sector</p> <p>Increased transparency in the banking sector</p> <p>Formation of global standards</p> <p>Creates better conditions for the active participation of national banks in international markets</p> <p>Improved corporate governance in the banking sector</p> <p>Increased financial literacy in the sector through training and education</p> <p>Creates conditions for the development of innovations</p>	<p>Increase in the cost of banking services</p> <p>Potential growth of shadow banking</p> <p>Negative impact on the competitiveness of small banks or banks in less developed countries due to difficulties in accessing resources to meet regulatory requirements</p> <p>The application of universal standards without considering regional differences and the institutional conditions of countries may cause limitations in certain banking segments</p>	<p>about their potential impacts</p> <p>Keeping the development of non-bank segments and risk regulation under consideration</p> <p>Continuous review and adaptation measures</p>
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Source: Compiled by the author.

Thus, the analysis, evaluation, and research on the impacts of Basel III standards on economic development have allowed for the following conclusions and final recommendations:

1. Statistical analyses indicate that the banking sector has not been able to sufficiently support economic development. The financial depth indicators, which reflect the role of the banking sector in the economy, are below potential and do not align with the development indicators across economic sectors.

2. The economic impacts of the transition to Basel III depend on how these standards are implemented and the preparedness of the banking sector. Some prudential norms applied in Azerbaijan's banking sector are, in some cases, quantitatively stricter than Basel III standards. However, in terms of requirements related to the quality of assets and capital, local banking standards lag behind international standards.

3. The conclusions regarding the impact of Basel III on economic development are not straightforward. However, when considering both the negative and positive effects of all components, the implementation of these standards may have a slightly contractionary effect on economic

growth. Our research based on the VAR model suggests that the transition to these standards will not have a significant negative impact on the economic growth parameter of economic development.

4. The higher capital and liquidity requirements under Basel III could lead to an increase in borrowing costs for banks in the country, reducing the accessibility of credit, which, in turn, may slightly weaken economic growth by limiting investment and consumption. To prevent potential credit constraints in the financing of the real sector during the transition to Basel III, it would be advisable to implement measures such as tax reliefs, the expansion of low-interest loans and government guarantees for the real sector, the formation of a dedicated fund to finance the real sector, the promotion of Islamic banking, alternative financing (leasing, factoring, platform-based financial services), and other similar stimulating initiatives.

5. In the long term, Basel III standards have the potential to support economic development, especially if they are applied in an optimal manner that aligns with the specific needs and characteristics of the local banking sector and economy. For Azerbaijan, Basel III is particularly important for ensuring economic development, which encompasses a broader scope than mere economic growth. Its progressive principles and criteria, such as risk management, increased transparency, and strengthened corporate governance, are vital. The implementation of these standards, especially with the recent introduction of the capital conservation buffer and cyclical buffers, helps prevent the financial sector from amplifying and spreading economic shocks. Moreover, addressing existing challenges and risks in the banking sector's infrastructure and institutional framework before fully transitioning to Basel III is of critical importance.

6. Basel III contributes to the unification of banking standards (such as eliminating various bureaucratic and legislative differences in capital movement and investment attraction) and leads to a more stable banking system. As a result, it can enhance the participation of Azerbaijani banks in foreign markets, increase confidence in the banking sector, and attract more foreign investors to Azerbaijan's financial markets.

7. To analyze and forecast any systemic risks that the transition to Basel III might pose to the banking sector, it is advisable to implement stress-testing and simulation models, develop early warning systems for

bank risks, and apply the relevant principles of market discipline and regulation under Basel III. This requires continuously strengthening the technical capacity of the financial market supervisory authority, particularly enhancing the professional knowledge and skills of human capital, using risk-based prudential regulation methods, reinforcing institutional strength, increasing transparency and corporate governance levels in the banking sector, and encouraging banks to adopt innovative solutions and new technologies.

8. Continuously improving the readiness of the banking system for the transition to Basel III standards and enhancing the potential for strengthening corporate governance in the banking system (including conducting training to develop human resources, enhancing experience and information exchange with international peer institutions, and learning best practices in collaboration with the Basel Committee) is essential for the future development of the banking sector and its supportive impact on economic growth. It is crucial to increase awareness about Basel III standards within the banking sector (through specialized training and workshops for the banking sector) through coordinated efforts of government agencies, commercial and non-commercial organizations. Overall, organizing coordinated activities for the transition to Basel III standards, involving the Central Bank, the Azerbaijan Banks Association (ABA), and other financial market representatives, is critically important. It is necessary to ensure that ABA's expert groups conduct continuous discussions and joint research on the impacts of Basel III standards on the national economy and banking sector, and to involve international experts in the training and education processes related to Basel III standards.

9. Establishing a monitoring and accountability mechanism that enables regular monitoring and evaluation of the phased transition processes to Basel III, implementing phased and comprehensive approaches to transition from the Central Bank's existing compliance-based prudential supervision systems to risk-based supervision, and conducting evaluations using the ex-ante (pre-assessment) method within the Regulatory Consistency Assessment Programme (RCAP) framework in collaboration with the Basel Committee, focusing on the application of standards in the Azerbaijani banking sector, would be beneficial for forecasting sectoral risks and better assessing economic impacts.

10. A longer-term transition to Basel III standards helps reduce the potential negative impacts of these standards. In this regard, it would be desirable to set specific transition dates for the relevant criteria of the standards in Azerbaijan. Implementing a phased approach at the state level that is tailored to the characteristics of the local banking system and economy, including adaptations within the legislative framework for the transition to Basel III standards, and taking into account the capital and liquidity indicators of the banking sector, is crucial. Establishing a specific Roadmap with concrete implementation schedules, objectives, and targets for the transition to Basel III standards is of significant importance.

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1. **A.R.Museyibov**, “Bank sektorunda strateji inkişaf trendləri” / “İqtisadi İslahatlar” elmi-analitik jurnal // - İqtisadi İslahatların Təhlili və Kommunikasiya Mərkəzi, Bakı, Azərbaycan, -2021, №1, ISSN №2790-2188, -s.41-48. URL: <https://ereforms.gov.az/az/publication/4>
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