REPUBLIC OF AZERBAIJAN

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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

ASSESSING THE IMPACT OF MONETARY POLICY ON AZERBAIJAN'S SECURITIES MARKET

Speciality: 5308.01 – "General Economics"

Field of science: Economic sciences

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GENERAL CHARACTERISTICS OF THE WORK

Relevance of the topic. Assessing the relationship between monetary policy and the securities market is important for price stability, liquidity and market development. In Azerbaijan, this relationship is examined with reference to monetary indicators and the institutional characteristics of the domestic market.

The Central Bank implements monetary policy through interest rates, open market operations, refinancing and foreign exchange interventions. Government securities, repo and reverse repo operations, and Central Bank notes are associated with liquidity management in the money market.

The deepening of Azerbaijan's securities market, the widening range of instruments and increasing investor participation make it important to examine the relationship between monetary instruments and the market. Order No. 1616 of the President of the Republic of Azerbaijan, dated 28 November 2019, abolished the Financial Markets Supervisory Authority and transferred its powers to regulate and supervise financial markets to the Central Bank.

Securities market development and improvements in monetary policy are reflected in the Strategic Roadmap for the Development of Financial Services and the Azerbaijan 2030 National Priorities. The Law on the Securities Market forms a further part of the legal framework.[1]

The two devaluations of the Azerbaijani manat against the US dollar on 21 February and 21 December 2015 demonstrated the importance of the exchange rate for the financial and credit system. This experience gives practical significance to assessing the relationship between monetary conditions and the securities market, as well as the scope for protecting investors against risks.

[1]Azerbaijan 2030: National Priorities for Socio-Economic Development. Approved by the Order of the President of the Republic of Azerbaijan dated 2 February 2021. Strategic Roadmap for the Development of Financial Services in the Republic of Azerbaijan. Approved by the Decree of the President of the Republic of Azerbaijan dated 6 December 2016. Law of the Republic of Azerbaijan on the Securities Market. Baku, 15 May 2015, No. 1284-IVQ.

Bringing state-owned enterprises into the securities market is relevant to improving its liquidity and depth. Differences between the protection mechanisms available to bank depositors and securities investors provide one of the grounds for proposing an investor protection fund.[2]

Previous research on the topic. Monetary policy, financial markets and their relationship with economic processes have been examined in the works of B. Kh. Atashov, Z. F. Mammadov, M. M. Baghirov and other Azerbaijani researchers.

The theoretical foundations of the research draw on the propositions of the Keynesian, monetarist and neoclassical schools, as well as the works of J. M. Keynes, O. S. Demchenko and other authors.

The empirical part of this dissertation focuses on estimating the relationship between excess demand at primary government bond auctions and selected monetary indicators over the period 2017–2025.

The object of the research is Azerbaijan's securities market and the other economic agents, institutions, enterprises and organizations operating in connection with it.

The subject of the research is the assessment of the impact of monetary policy on Azerbaijan's securities market, the improvement of the related mechanisms, and the identification of priority areas of action and prospects for the development of the securities market.

Research aim and objectives. The aim of the dissertation is to assess the impact of monetary policy on Azerbaijan's securities market and to formulate substantiated proposals on this basis.

The research pursues the following objectives:

- To examine systematically the theoretical and conceptual foundations of the formation and development of monetary policy in the contemporary period;
- To analyze the development and institutional structure of the securities market in the context of global financial transformation, systematize methodological approaches to

[2]Azerbaijan Deposit Insurance Fund. Insured Deposit. [Online]. URL: https://adif.gov.az/az/insured-deposit (accessed: 21.09.2026).

measuring the impact of monetary policy on the market, and establish a working analytical framework;

- To examine international experience concerning the effectiveness of monetary policy and synthesize leading approaches to identifying its impact on the securities market;
- To identify the principal characteristics of the country's monetary policy with reference to its transmission mechanisms;
- To quantify the impact of current monetary policy on the securities market and provide an impartial assessment of the findings;
- To analyze the directions of monetary policy implemented in Azerbaijan and explain their scientific foundations in the context of contemporary economic conditions;
- To investigate the interrelationships between government and corporate securities and monetary policy instruments within the financial services market;
- To examine existing risks and the mechanisms through which inflation affects Azerbaijan's securities market, and to propose a system of financial instruments providing investors with protection against inflation;
- To synthesize and assess the factors through which monetary policy affects the securities market under emerging economic challenges, and to explore opportunities for developing more effective operating mechanisms.

Research methods. Analysis, synthesis, comparison and generalization are combined with econometric analysis of time series. Stationarity was examined using the augmented Dickey–Fuller (ADF) test, and long-run relationships were tested using the Engle–Granger, Johansen and autoregressive distributed lag (ARDL) approaches. Relationships were estimated by ordinary least squares (OLS), while short-run changes and adjustment were estimated using an error correction model (ECM). Diagnostic tests were conducted for the models. All econometric calculations were performed in EViews 14, using official data from the Central Bank and the Ministry of Finance.

The main propositions submitted for defense are as follows:

1. The institutional role of the Central Bank, the quality of market infrastructure and the multifunctional structure of the securities market are closely interrelated. Improving them simultaneously is a necessary condition for the intensive development of the securities market;
2. Assessing the relationship between monetary indicators and excess demand at government bond auctions with regard to long-run equilibrium and short-run changes provides a fuller explanation of its nature. Complementing the Johansen and Engle–Granger cointegration tests with the ARDL bounds test and applying an error correction model provide methodological support for the findings;
3. International experience shows that the transmission of monetary policy to financial markets varies with the structure of a country's financial system and the level of market development. The institutional characteristics of the domestic market must therefore be taken into account when assessing the interest rate and credit channels in Azerbaijan;
4. Monthly data for 2017–2025 establish a positive statistical relationship between excess demand at government bond auctions and the monetary base, outstanding Central Bank notes and the volume of refinancing. The findings indicate that this relationship is of a long-run nature;
5. According to the estimated error correction model, deviations from long-run equilibrium between monetary indicators and excess demand at government bond auctions decrease by approximately 75% in the following month. This indicates that excess demand at auctions adjusts rapidly towards long-run equilibrium;
6. The phased introduction of a three-tier architecture of financial instruments providing protection against inflation in Azerbaijan's securities market over five years, together with improvements in state regulation, is a necessary institutional measure for market development and greater monetary policy effectiveness.

The scientific novelty of the research consists of the following:

- The relationship between excess demand at government bond auctions and the monetary base, outstanding Central Bank notes and the volume of refinancing has been quantified using monthly data for 2017–2025. The levels regression establishes a positive statistical relationship with each of the three indicators. To facilitate comparison, the coefficients have been standardized and elasticities calculated at the mean values of the indicators (2.3);
- The long-run relationship between excess demand at government bond auctions in Azerbaijan and monetary indicators has been assessed by comparing the results of the Johansen, Engle–Granger and ARDL tests. Within the ARDL framework, the previous month's level of excess demand and the group of monetary indicators in levels lagged by one month were tested separately. The findings support a long-run relationship. The error correction model has been used to estimate relationships between short-run changes and the speed at which deviations from long-run equilibrium diminish (2.3);
- Analysis of the indicators and institutional framework of Azerbaijan's securities market has provided grounds for developing the corporate debt segment, improving secondary market liquidity and strengthening investor protection mechanisms. The characteristics of the interrelationships between monetary policy instruments and the government and corporate debt segments have been explained (2.2; 3.1; 3.3);
- A three-tier architecture for a system of financial instruments providing protection against inflation has been proposed, taking account of the characteristics of inflation in Azerbaijan, and a five-year phased implementation procedure has been substantiated. The system comprises the following instruments proposed for introduction in the Azerbaijani market: inflation-linked government bonds; corporate bonds with inflation-linked coupons; corporate bonds linked to a foreign currency basket, intended to reduce inflation risks associated with exchange rate

movements; tax-advantaged, inflation-sensitive investment accounts; inflation-linked insurance products; and an exchange platform for inflation-linked derivatives, including swaps and futures (3.2);

- A conceptual framework for improving the system of state regulation of Azerbaijan's securities market has been substantiated, with a focus on addressing institutional shortcomings. Its principal elements, regulatory mechanisms and instruments have been defined comprehensively (3.3).

Theoretical and practical significance. The research contributes to the study of relationships between monetary indicators and auction demand. Its findings may be used in the joint analysis of auction demand and bank liquidity and in providing an analytical basis for monetary decisions. The proposed conceptual framework and system of instruments support market development and investor protection. The research materials may also be used in teaching monetary policy and financial markets.

Dissemination and application of the research. The dissertation topic was discussed in accordance with the research directions of Azerbaijan State Oil and Industry University and approved by the University's Academic Council.

The applicant has published 13 scientific works on the dissertation topic: 7 in academic journals and 6 in conference proceedings. Of these, 1 journal article and 4 papers in conference proceedings were published abroad.

Institution where the dissertation was completed. The work was performed at the Department of Industrial Economics of Azerbaijan State Oil and Industry University.

Total length of the dissertation in characters, including the length of each structural section. The main text comprises 216,494 characters: Introduction, 23,775; Chapter I, 67,553; Chapter II, 58,668; Chapter III, 57,181; and Conclusions, 9,317. The count excludes spaces, tables, figures, graphs, their captions and source notes, the bibliography and the list of abbreviations.

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MAIN CONTENT OF THE DISSERTATION

The Introduction presents the relevance of the topic, the research aim and objectives, methods, propositions submitted for defense, scientific novelty, theoretical and practical significance, dissemination of the research and the structure of the dissertation.

Chapter I examines the theoretical foundations of monetary policy, the structure of the securities market and the methodological principles underlying their interrelationship.

Monetary policy objectives are classified as ultimate, intermediate, and tactical (operational). The theoretical analysis explains how changes in interest rates and liquidity conditions are transmitted to demand for securities and their yields.[3]

The role of the securities market in mobilizing and allocating financial resources is analyzed in relation to the institutional environment, market infrastructure and the protection of investors' rights.

The study examines the mechanisms through which monetary policy instruments affect banking system liquidity, the financing costs of economic agents, and demand and yields in the securities market. Interest rates, open market operations, reserve requirements, refinancing and foreign exchange interventions perform different functions in this respect.

The interest rates applied by the Central Bank to its own operations affect the terms on which banks obtain funding. Open market operations and Central Bank notes serve to regulate liquidity, refinancing meets banks' funding needs, and reserve requirements help determine the conditions governing the use of bank resources.

[3]Khan, M. S. Current Issues in the Design and Conduct of Monetary Policy. International Monetary Fund, 30 January 2003. [Online]. URL: https://www.imf.org/en/news/articles/2015/09/28/04/53/sp013003 (accessed: 18.09.2026). Sattarov, F. R. Analysis of the current state of monetary policy in Azerbaijan // Scientific Bulletin of Western Caspian University. Baku, 2023. No. 01, pp. 123–128. (In Azerbaijani).

Foreign exchange operations are considered in relation to the exchange rate and liquidity conditions in manat.[4]

The connection between these instruments and the securities market arises when banks and other investors allocate their funds among different financial instruments. Changes in interest rates and liquidity conditions may be transmitted to government bond yields, auction demand and corporate financing conditions. The choice and use of instruments are therefore assessed together with policy objectives, market structure and transmission mechanisms. Financial market supervision is considered a regulatory function distinct from these monetary instruments.

The transmission of monetary decisions to the economy is explained through the interest rate, credit, exchange rate and expectations channels. The interest rate channel concerns changes in borrowing costs and the returns required on investments. The credit channel operates through banks' supply of credit and borrowers' financial positions. The exchange rate channel affects import prices and net exports, while the expectations channel influences current decisions through views about future inflation and interest rates. The conditions under which these channels operate are determined by the structure of the financial system and the level of market development.

In the securities market, these relationships enter into investors' choices between bonds, shares and other financial instruments. Alongside returns, investors assess the investment horizon, the risk of an instrument and the possibility of selling it. The relationship between monetary policy and the securities market is therefore explained by considering changes in interest rates, access to financial resources and market participants' expectations together.

By the economic nature of the instruments, the securities market is divided into equity and debt markets; by maturity, it is divided into

[4]Law of the Republic of Azerbaijan on the Central Bank of the Republic of Azerbaijan. Baku, 10 December 2004. [Online]. URL: https://uploads.cbar.az/assets/ca6c6c4dec6b4fb9d25bc9191.pdf (accessed: 18.09.2026). Sattarov, F. R. Analysis of the current state of monetary policy in Azerbaijan // Scientific Bulletin of Western Caspian University. Baku, 2023. No. 01, pp. 123–128. (In Azerbaijani).

segments for short-term and long-term instruments. These classification criteria should be distinguished from one another.

The structure of the securities market is explained in terms of the instruments traded, market participants and the infrastructure supporting transactions.

The principles of monetary policy organization, the functions of the securities market and regulatory methods are systematized in Figure 1.[5]

International experience has been compared in terms of the use of monetary instruments and the institutional organization of markets. The relationship between open market operations, short-term interest rates and bank liquidity has been examined in the United States and the euro area. The transmission of these instruments to the securities market has been considered together with market depth, investor composition and the characteristics of trading infrastructure.

The roles and responsibilities of state regulators and self-regulatory institutions differ across countries. Information disclosure, protection of investors' rights and clear rules for market participants are important aspects of securities market organization.

The scope for applying this experience in Azerbaijan is assessed in light of the national monetary regime, the investor base and existing infrastructure. The dissertation synthesizes international experience with regard to improving market transparency, informing participants and expanding opportunities to raise financial resources.

[5]Sattarov, F. R. Theoretical and methodological aspects of assessing the impact of monetary policy on the securities market // Geostrategy. Baku, 2023. No. 06, pp. 115–119. (In Azerbaijani). Law of the Republic of Azerbaijan on the Securities Market. Baku, 15 May 2015, No. 1284-IVQ.

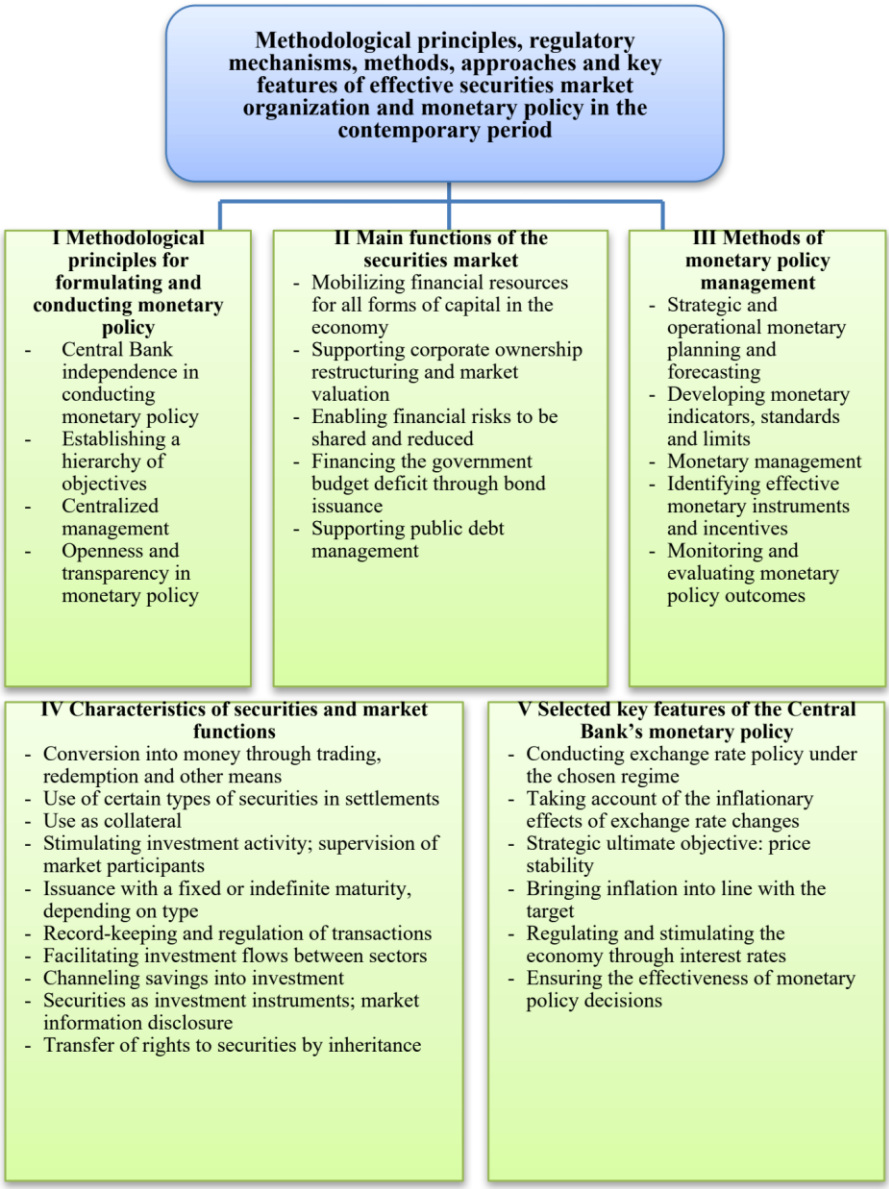


Figure 1. Block diagram of the methodological principles, regulatory mechanisms, methods, procedures and principal characteristics of the effective organization of the securities market and monetary policy in the contemporary period (developed by the author on the basis of theoretical and regulatory sources).

Chapter II analyzes monetary indicators and securities market developments over 2010–2025 and provides an econometric assessment of government bond auctions based on monthly data for 2017–2025.

Table 1 presents developments in the monetary survey over 2010–2025.

Table 1

Monetary survey of the Republic of Azerbaijan, 2010–2025, AZN million (end of period)

Year	Net foreign assets	Net domestic assets	Claims on the economy	Broad money	Broad money in manat
2010	4638.3	5889.2	9388.1	10527.5	8297.5
2011	7849.9	6053.3	11814.2	13903.2	10997.2
2012	8283.1	8492.2	15603.1	16775.3	13806.4
2013	9975.5	9313.9	16582.1	19289.4	16434.8
2014	10477.6	11088.7	20041.9	21566.4	17435.8
2015	10680.6	10606.3	24627.2	21286.9	8678.3
2016	7591.6	13298.0	17661.8	20889.6	11546.3
2017	15051.3	7720.8	11363.2	22772.1	12466.4
2018	14951.3	9109.1	13057.8	24060.4	14643.6
2019	16923.4	11942.9	15036.4	28866.3	18238.6
2020	18435.9	10749.9	14933.9	29185.8	20305.5
2021	20171.0	14475.6	17432.9	34646.6	23874.9
2022	25030.8	17794.1	20472.8	42824.9	29565.6
2023	25216.5	19856.9	23505.8	45073.5	35371.8
2024	26603.8	19891.1	27234.3	46494.8	36652.0
2025	25844.2	24016.1	29592.5	49860.3	40393.7

Source: compiled by the author using Central Bank data.[6]

According to Table 1, net foreign assets rose from AZN 4.64 billion to AZN 25.84 billion between 2010 and 2025, while net domestic assets increased from AZN 5.89 billion to AZN 24.02 billion. The corresponding increases were approximately 5.57-fold and 4.08-fold.

[6]Central Bank of the Republic of Azerbaijan. Statistical Bulletin, 12(309), December 2025. [Online]. URL: https://uploads.cbar.az/assets/5b2844a15d4529a6127f5a8a0.pdf Central Bank of the Republic of Azerbaijan. Monetary Statistics. [Online]. URL: https://www.cbar.az/page-42/monetary-indicators (accessed: 20.09.2026).

Claims on the economy increased from AZN 9.39 billion in 2010 to AZN 29.59 billion in 2025, while broad money in manat rose 4.87-fold. These changes indicate an expansion in the monetary resources available in the economy.

Table 2 presents the structure of lending to the economy by type of credit institution.

Table 2

Structure of lending to the economy by type of credit institution (end of period)

Year	Total lending	State-owned banks		Private banks		Non-bank credit institutions	
		AZN million	Share, %	AZN million	Share, %	AZN million	Share, %
2010	9163.4	3901.9	42.6	5069.9	55.3	191.6	2.1
2011	9850.3	3300.0	33.5	6298.8	63.9	251.5	2.6
2012	12243.7	4137.1	33.8	7785.5	63.6	321.1	2.6
2013	15422.9	5300.4	34.4	9689.4	62.8	433.1	2.8
2014	18542.6	6143.8	33.1	11873.6	64.0	525.2	2.8
2015	21730.4	7289.3	33.6	13875.2	63.8	566.0	2.6
2016	16444.6	5749.2	35.0	10222.0	62.2	473.4	2.9
2017	11757.8	1916.2	16.3	9421.4	80.1	420.2	3.6
2018	13020.3	2098.4	16.1	10529.8	80.9	392.0	3.0
2019	15298.2	2561.5	16.7	12339.4	80.7	397.2	2.6
2020	14530.4	2776.5	19.1	11380.5	78.3	373.4	2.6
2021	17119.8	3333.0	19.5	13326.1	77.8	460.7	2.7
2022	20184.0	3852.3	19.1	15742.1	78.0	589.6	2.9
2023	23979.1	5496.2	22.9	17686.8	73.8	796.2	3.3
2024	29288.2	7150.7	24.4	20327.0	69.4	1810.6	6.2
2025	31946.7	7867.3	24.6	22195.7	69.5	1883.7	5.9

Source: compiled by the author using Central Bank data.[7]

Lending increased 3.49-fold over 2010–2025, reaching approximately AZN 32 billion. In 2025, private banks accounted for 69.5% of lending, state-owned banks for 24.6%, and non-bank credit institutions for 5.9%. This structure shows that credit is channeled into the economy predominantly through the banking sector.

[7]Central Bank of the Republic of Azerbaijan. Statistical Bulletin, 12(309), December 2025. [Online]. URL: https://uploads.cbar.az/assets/5b2844a15d4529a6127f5a8a0.pdf

A comparison of lending across years shows that its volume did not increase continuously throughout the period. Lending declined in 2016–2017 and subsequently increased, apart from the decline in 2020. Changes in the distribution of lending among state-owned banks, private banks and non-bank credit institutions provide a further dimension to the overall trend. This breakdown supports taking account of both the aggregate volume and the participants contributing to it when analyzing monetary and credit indicators.

Table 3 presents the year-end nominal amount and composition of outstanding government bonds and Central Bank notes.

Table 3

Year-end nominal amount and composition of outstanding government bonds and Central Bank notes, 2010–2025

Year	Nominal amount outstanding (AZN million)			Share of total, %	
	Total	Government bonds	Central Bank notes	Government bonds	Central Bank notes
2010	309.7	269.7	40.0	87.1	12.9
2011	250.6	159.4	91.2	63.6	36.4
2012	324.6	204.6	120.0	63.0	37.0
2013	181.4	161.4	20.0	89.0	11.0
2014	227.3	200.3	27.0	88.1	11.9
2015	122.6	122.6	0.0	100.0	0.0
2016	387.1	277.4	109.6	71.7	28.3
2017	1665.4	739.8	925.6	44.4	55.6
2018	1989.2	980.9	1008.3	49.3	50.7
2019	1841.3	1141.3	700.0	62.0	38.0
2020	2362.2	1712.2	650.0	72.5	27.5
2021	2700.2	2500.2	200.0	92.6	7.4
2022	5500.1	4161.5	1338.6	75.7	24.3
2023	7697.5	6377.4	1320.1	82.8	17.2
2024	9561.4	9353.2	208.2	97.8	2.2
2025	9346.1	8975.3	370.8	96.0	4.0

Source: compiled by the author using Central Bank data.[8]

[8]Central Bank of the Republic of Azerbaijan. Key Securities Market Indicators. Table 3.5. Electronic statistical series, updated on 26.08.2026; period used: 2010–2025. [Online]. URL: https://uploads.cbar.az/assets/deeaa533f7ad48ce249b1ef8f.xlsx (accessed:

The nominal amount of outstanding government bonds and Central Bank notes rose from AZN 309.7 million in 2010 to AZN 9,346.1 million in 2025, an increase of 30.18-fold. Of the latter amount, government bonds accounted for AZN 8,975.3 million (96.0%) and Central Bank notes for AZN 370.8 million (4.0%).

The relationship between the outstanding stock of Central Bank notes and excess demand at government bond auctions is estimated in the econometric part of the research.

The amounts of government bonds and Central Bank notes outstanding arise from different purposes. Government bonds serve public borrowing needs, whereas notes are used to regulate liquidity within monetary policy. A decline in the outstanding stock of notes does not mean that this instrument has ceased to perform its monetary policy function; the scale of its use is assessed together with liquidity conditions. Growth in the outstanding amount of government bonds is important because it broadens the basis for observing yields across maturities and comparing them with those on other debt instruments.

Table 4 shows the number and value of transactions in the securities market.[9] These transaction measures differ from the year-end nominal amounts outstanding presented in Table 3.

21.09.2026). Central Bank of the Republic of Azerbaijan. Statistical Bulletin, 12(309), December 2025. [Online]. URL: https://uploads.cbar.az/assets/5b2844a15d4529a6127f5a8a0.pdf

[9]Central Bank of the Republic of Azerbaijan. Securities Market Overview Indicators: Annual Tables for January–December, 2020–2025. [Online]. URL: https://www.cbar.az/page-190/capital-market (accessed: 21.09.2026).

Table 4

Key indicators of Azerbaijan's securities market, 2020–2025

A. Number of transactions

Market segments	2020	2021	2022	2023	2024	2025
Corporate securities, of which:	3237	6076	4400	3961	61058	22801
Primary market	330	1277	566	488	50381	3834
Secondary market	2907	4799	3834	3473	10677	18967
Government securities, of which:	1737	2206	2506	2807	2725	1242
Primary market	1161	1425	1590	1804	1381	489
Secondary market	576	781	916	1003	1344	753
Repo/reverse repo	1322	4284	4112	6777	8489	6873
Securities market, of which:	6296	12566	11018	13545	72272	30916
Primary market	1491	2702	2156	2292	51762	4323
Secondary market	4805	9864	8862	11253	20510	26593

Table 4 (continued).

B. Value (AZN million)

Market segments	2020	2021	2022	2023	2024	2025
Corporate securities, of which:	3356.5	2395.1	2189.7	2279.1	3686.7	3133.2
Primary market	1435.6	2164.4	1007.9	1326.9	2193.9	1864.5
Secondary market	1920.9	230.7	1181.9	952.2	1492.7	1268.7
Government securities, of which:	8622.9	7287.8	8312.8	8405.6	7864.4	10682.1
Primary market	7610.5	6188.6	7304.0	6900.4	6457.1	6172.4
Secondary market	1012.3	1099.3	1008.8	1505.2	1407.3	4509.7
Repo/reverse repo	2150.2	7196.3	5060.5	17384.5	60922.2	50633.1
Securities market, of which:	14129.5	16879.3	15563.0	28069.2	72473.3	64448.4
Primary market	9046.1	8353.0	8311.9	8227.4	8651	8036.9
Secondary market	5083.4	8526.3	7251.2	19841.8	63822.3	56411.5

Source: compiled by the author using Central Bank data.

Total market turnover increased 4.56-fold and the number of transactions 4.91-fold over 2020–2025. In 2025, turnover declined by 11.1% compared with the previous year. The initial public offering (IPO) of the International Bank of Azerbaijan (ABB) in 2024 provides an example of broader investor participation. Table 4 presents the Central Bank's statistics for the overall market; their coverage differs from the trading statistics of the Baku Stock Exchange.[10]

A comparison across market segments shows that transaction numbers and values can move in different directions. In the government securities segment, the number of transactions declined in 2025 while their value increased. This difference shows the role of larger transactions in total turnover. In the primary equity market, the number and value of transactions also vary sharply across years. Market activity has therefore been assessed by considering transaction numbers, values and the instruments concerned together.

Repo and reverse repo operations accounted for 78.6% of total market turnover in 2025. Given this structure, it is important to examine primary and secondary market indicators for government and corporate securities separately, alongside overall turnover. Primary placements represent funds raised by issuers, while secondary market transactions represent subsequent trading in securities already issued. The high share of repo operations and the variation in corporate transactions across years support identifying development measures for individual market segments.

The relationship between monetary indicators and excess demand at government bond auctions was estimated using monthly data from February 2017 to December 2025. This period comprises 107 calendar months. As observations of excess demand are unavailable for January–August 2025, the levels regression uses 99 observations and the main ECM uses 97. Lags were calculated over consecutive calendar months, and missing values were not replaced with zeros.

[10]ABB. Sustainability Report 2024. [Online]. URL: https://abb-bank.az/storage/uploads/files/1746680054_ABB%20Dayan%C4%B1ql%C4%B1%20%C4%B0nki%C5%9Faf%20Hesabat%C4%B1%202024.pdf (accessed: 21.09.2026).

Excess demand was calculated as the difference between the total value of bids at government bond auctions and the announced supply. A positive value means that bids exceed supply, while a negative value means that the value of bids is below the announced supply. The indicator thus expresses the amount by which auction bids exceed or fall short of the announced supply.

The monetary base is included in the model to account for liquidity conditions in the banking system. This indicator comprises currency in circulation and banks' reserves held at the Central Bank. Analyzing the monetary base together with excess demand at auctions serves to assess the relationship between liquidity conditions and demand for government bonds.

Outstanding Central Bank notes represent the stock of a monetary instrument in which banks can invest funds. Notes are used in liquidity regulation and can also be held alongside government bonds in banks' securities portfolios. Refinancing outstanding, in turn, relates to funds obtained by banks from the Central Bank. Considering these three indicators within the same model relates auction demand to different aspects of bank liquidity and operations with the Central Bank.

The econometric assessment began with tests of the stationarity of the time series. These tests help determine how the levels of the indicators or their changes should be used in the model. Since a common trend over time may cause two indicators to increase together, the assessment of their relationship in levels was supplemented with cointegration tests. Findings on the long-run relationship were then analyzed together with short-run changes and the response to the previous period's deviation. This sequence allows the economic interpretation of the coefficients to be considered in light of the properties of the time series.

Excess demand and the three monetary indicators in the model are expressed in millions of manat. In the levels regression, the coefficients on the monetary base, Central Bank notes and refinancing were 0.019038, 0.296389 and 0.411009, respectively. All three positive coefficients indicate that, holding the other indicators constant, a higher monetary indicator is associated with higher excess

demand. The model explains approximately 40.5% of the variation in excess demand.

The largest standardized coefficient was obtained for Central Bank notes (0.513), whereas the highest elasticity calculated at the mean values was obtained for refinancing (1.392). Standardized coefficients allow the indicators to be compared on a common measurement scale. Elasticities show the percentage change in excess demand associated with a 1% change in a monetary indicator at the mean values.

Impulse dummy variables for November 2017 and November 2022 were included in the ARDL and ECM specifications. Each variable takes the value 1 in the corresponding month and 0 in all other months. These months were selected because large deviations were observed in the residuals of the initial levels regression.

Since the results of the Johansen and Engle–Granger tests were sensitive to the choice of lag length, the long-run relationship was also examined using the ARDL approach. The ARDL(1,1,1,1) model yielded $F=16.7541$, $t=-8.1447$ and $F_x=7.9021$. The F_x test examines the joint statistical significance of the previous month's levels of the monetary base, Central Bank notes and refinancing in the model. In the alternative ARDL(2,1,1,1) specification, all three tests also supported a long-run relationship at the 5% level. In both models, the long-run coefficients on the three indicators are positive and statistically significant at the 1% level. The positive relationship therefore holds under two different lag structures.[11]

Estimating the long-run relationship and short-run changes separately clarifies the economic interpretation of the findings. The short-run model estimates monthly changes and the subsequent response to a deviation arising in the preceding period.

[11]Engle, R. F., Granger, C. W. J. Co-integration and Error Correction: Representation, Estimation, and Testing // Econometrica. 1987. Vol. 55, No. 2, pp. 251–276. Pesaran, M. H., Shin, Y., Smith, R. J. Bounds testing approaches to the analysis of level relationships // Journal of Applied Econometrics. 2001. Vol. 16, No. 3, pp. 289–326. DOI: 10.1002/jae.616. Sam, C. Y., McNown, R., Goh, S. K. An augmented autoregressive distributed lag bounds test for cointegration // Economic Modelling. 2019. Vol. 80, pp. 130–141. DOI: 10.1016/j.econmod.2018.11.001.

In the main ECM, the coefficient on the previous month's residual was −0.753041. Given a long-run relationship, the model indicates a reduction of approximately 75.3% in the preceding month's deviation during the following month. The negative coefficient expresses the movement of excess demand back toward its model-implied long-run level after a departure from that level.

Since the coefficients on contemporaneous changes in the monetary indicators were not statistically significant at the 5% level, the principal short-run finding is the reduction in the preceding deviation. In practical terms, this finding supports considering the conditions established in the preceding period alongside the levels of monetary indicators when assessing auction demand.

For the main ECM, the Breusch–Godfrey tests at two and 24 lags did not indicate residual autocorrelation, while the White test did not indicate heteroskedasticity. The RESET test found no statistical evidence of misspecification of the selected functional form. Since the Jarque–Bera test rejected normality, the statistical findings were assessed together with the other diagnostic results. The CUSUM of Squares statistic remained within the 5% bounds from December 2022 to December 2025. Because the model includes an impulse dummy for November 2022, the recursive residual series used in the CUSUM of Squares test begins in December 2022.

In these tests, the model's residuals represent the differences between observed values and values estimated by the model. Dependence between residuals in successive months may indicate that dynamics not captured by the equation remain. The results of the Breusch–Godfrey tests were assessed specifically with regard to this dependence. The White test examines whether residual variance is constant, while RESET tests the adequacy of the selected functional form. The diagnostic analysis thus allows the economic findings to be assessed together with the properties of the component not explained by the model.

Given the finding that the residuals are not normally distributed, the statistical significance of the coefficients has been interpreted together with their economic meaning and the results of the alternative model. The CUSUM of Squares test complements the assessment over

the period it covers. The economic findings rest on the positive relationships that persist across different lag structures and on the reduction in the preceding deviation during the following month.

The findings relate to primary auctions; their interpretation takes account of lag selection, the calendar gap and the standard assumptions of the ARDL tests. The estimated relationships support monitoring auction demand together with the monetary base, Central Bank notes and refinancing.

Chapter III examines ways of improving monetary policy and prospects for securities market development on the basis of the empirical findings and institutional analysis.

The relationship between government and corporate securities has been analyzed in terms of yield formation, the allocation of financial resources and investor choice. The yield on government bonds issued in the same currency and with comparable maturities provides a benchmark for assessing corporate bond yields. The difference between a corporate bond's yield and this benchmark is considered in relation to the issuer's credit risk, the instrument's liquidity and the terms of the issue.

The influence of monetary policy on interest rates and liquidity conditions is also relevant to corporate issuers. When the yield required by the market rises, the prices of previously issued fixed-coupon bonds may decline, while financing costs for new issues may increase. In the equity market, this relationship operates through enterprises' financing costs, expected earnings and investors' choices among alternative financial instruments.

Analysis of market indicators identifies continuity in corporate debt issuance, active secondary market trading and protection of investors' rights as principal areas for development. Assessment in these areas considers not only placement volumes but also the regularity of transactions, investor composition and the scope for subsequent trading in securities.

The study proposes assessing the scope for introducing floating-rate bonds linked to AZIR (the Azerbaijan Interbank Rate) for suitable issuers. Such issues should specify in advance the reference interest rate, the spread added to it and the coupon reset period. When AZIR rises, coupon payments and the issuer's debt servicing costs increase; when it falls, the opposite occurs. The scope for introducing these

instruments is therefore assessed in relation to issuers' cash flows and their ability to meet payments under changing interest rates.

Alongside bond issuance by state-owned companies, the study proposes examining the scope for public offerings of a proportion of the shares of suitable companies. Information disclosure, corporate governance and protection of minority shareholders' rights should be considered together for this purpose. These proposals are presented in relation to the target in the Financial Sector Development Strategy for 2024–2026 to increase the ratio of capital markets to non-oil GDP from 10% to 14%.[12]

The institutional analysis provides the basis for a proposed three-tier protection system covering the government, corporate and investor levels (Figure 2). In his speech of 19 November 2025, Central Bank Governor Taleh Kazimov stated that more than 70% of inflation at that time was associated with supply-side factors, particularly external supply factors.[13] These conditions increase the importance of examining financial instruments that protect the purchasing power of investors' income.

Protection of investors against inflation risk has been examined through the distinction between nominal and real returns. The purchasing power of a bond's coupon and principal payments depends on changes in the price level. Assessment of investment outcomes should therefore consider not only the amount of income but also payment timing, the investment horizon and inflation.

At the first level, the proposal envisages manat-denominated government bonds whose principal or coupon payments are linked to the consumer price index. Indexation of principal is intended to protect the purchasing power of the amount repaid at maturity, while coupon indexation is intended to protect periodic interest income. The terms of each issue should accordingly specify clearly how the index is applied and payments are calculated.

[12]Central Bank of the Republic of Azerbaijan. Financial Sector Development Strategy for 2024–2026. [Online]. URL: https://cbar.az/pages/strategy.

13Milli Majlis of the Republic of Azerbaijan. Transcript of the sitting of 19 November 2025. Speech by Taleh Kazimov. [Online]. URL: https://meclis.gov.az/documents/47-ci%20cild.pdf (accessed: 30.09.2026).

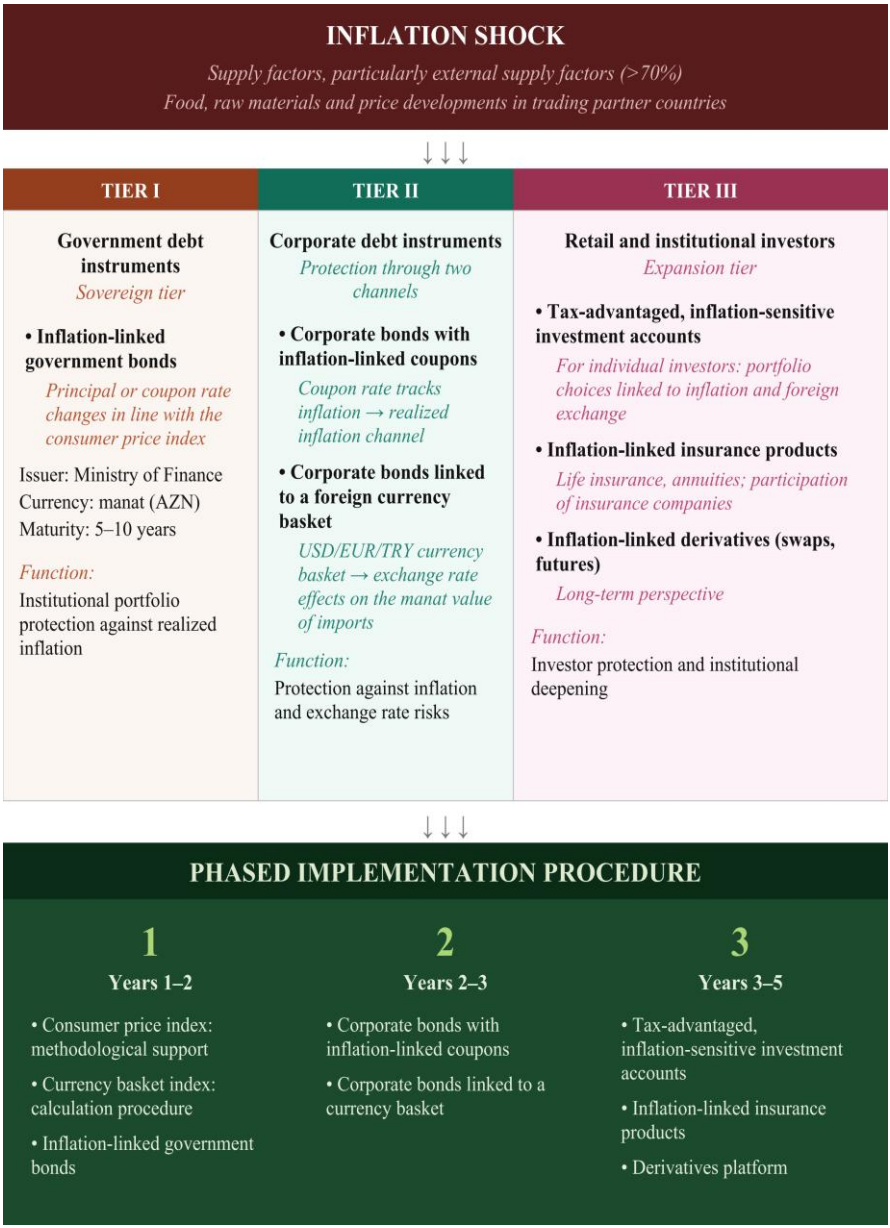


Figure 2. Three-tier architecture of a system of financial instruments providing protection against inflation in Azerbaijan's securities market (developed by the author).

At the second level, the study considers inflation-linked coupons on corporate bonds and instruments based on a foreign currency basket. Payments linked to the consumer price index take account of domestic price changes, whereas payments linked to a currency basket take account of exchange rate movements. The use of currency-basket-linked issues is considered in relation to the matching of the issuer's foreign currency revenues and liabilities.

The third level comprises inflation-sensitive investment accounts, insurance and annuity products for individual and institutional investors and, in the longer term, derivative financial instruments such as swaps and futures. These instruments are intended to broaden investors' opportunities to allocate funds among products with different maturities and risk characteristics.

Implementation is planned over five years: methodologies and pilot issues for government instruments in years 1–2, corporate instruments in years 2–3, and the development of products at the investor level in years 3–5. At each stage, indexation rules, debt servicing costs, investor demand and payment capacity are assessed. This phased approach allows subsequent steps to be refined on the basis of the results of pilot implementation.

The proposed conceptual framework for state regulation links measures for the institutional development of the market with the assessment of their results (Figure 3).

To assess the relationship between monetary policy and the securities market, policy decisions, changes in the money market and securities market outcomes have been examined in sequence. This approach traces how interest rates and liquidity conditions are reflected in government bond yields and auction demand, and subsequently in corporate financing conditions.

Implementation of the framework calls for monitoring excess demand at auctions, auction yields on comparable issues, individual investor participation and corporate bond yield spreads. Excess demand is analyzed together with bid and supply volumes, while yields are compared for instruments in the same currency and with comparable maturities. Individual investors' participation can be measured as the value of securities they acquire relative to total

placements. Corporate yield spreads are determined by comparison with yields on corresponding government bonds.



Figure 3. Principal elements of the conceptual framework for improving state regulation of the securities market (developed by the author).

Data published by the Central Bank and other relevant institutions are to be brought together in a single analytical table. For each indicator, the table should identify the source, measurement unit, currency and reference period, with outstanding amounts and transaction volumes during the period presented separately. Consolidating monthly data and preparing a quarterly analytical review would support systematic monitoring of policy decisions and market developments.

The results of development measures should be assessed using indicators appropriate to their objectives. Reductions in listing costs are analyzed in relation to the number of new issuers and issues, market makers' activity in relation to bid-ask spreads and continuity of trading, and the expansion of the investor base in relation to participation indicators.

Common rules for presenting information and stronger links between existing platforms would give market participants access to comparable information. Presenting issuers' reports, issue terms and information on corporate events in an integrated manner would provide a clearer information environment for investment decisions.

The proposed investor protection fund is intended to provide compensation when an intermediary is unable to return an investor's money or securities. Its funding sources, compensation limit and procedures for considering claims should be determined when the fund is established. The proposal thus supports the protection of market participants' rights and stronger confidence in intermediary services.

Simplifying issuance and listing procedures, reducing the related costs and preparing issuers to meet disclosure requirements are presented as complementary measures for expanding the corporate securities market. Methodological support for pilot corporate and municipal bond issues is intended to clarify issue terms, financial statements and the capacity to service debt. Alongside facilitating market access for new issuers, these measures should improve the quality of the information available to investors for comparing issues.

The dissertation's findings and principal proposals are set out below.

Findings:

1. Monetary policy is related to the securities market through interest rates, bank liquidity and investor expectations. Assessing this relationship requires consideration of the market's institutional structure and the interaction of monetary, fiscal and exchange rate policies.

2. Transaction value and the number of transactions in Azerbaijan's securities market increased over 2020–2025, with uneven growth across years and market segments. This finding demonstrates the importance of developing the corporate debt market, secondary market liquidity and investor participation together.

3. The levels regression establishes a positive statistical relationship between excess demand and the monetary base, Central Bank notes and refinancing. Both ARDL models support a long-run relationship, with positive and statistically significant long-run coefficients on all three indicators.

4. In the ECM, the coefficient on the previous month's residual is −0.753. Assuming a long-run relationship, this indicates that deviations decrease by approximately 75% in the following month. The absence of statistically significant coefficients on contemporaneous monthly changes requires a distinction between short-run and long-run findings.

5. Institutional analysis of the market provides grounds for expanding investor protection and opportunities to hedge inflation risk. The three-tier system of instruments and the proposed framework for improving state regulation bring these proposals together.

Proposals and recommendations:

1. Monitor excess demand regularly alongside the monetary base, Central Bank notes and refinancing indicators, taking account of the values of bids and amounts offered, as well as bond maturities and yields.

2. Assess the scope for planning the schedule of Central Bank note and refinancing operations in coordination with government bond auctions, taking borrowing requirements, bank liquidity and the price stability objective into account together.

3. Assess opportunities to support investment in the bonds of state-owned companies such as SOCAR, ASCO and AZAL on the basis of issuers' credit quality and risks; explore public offerings of a proportion of the shares of suitable companies within the framework of the state's ownership decisions.

4. Consider tax incentives for issuers, subsidies for listing fees and simplified IPO procedures; deepen the corporate debt market and provide methodological support for applying the existing requirements governing municipal bonds and for pilot issues.

5. Develop an integrated data environment based on the Central Bank's Electronic Disclosure System (EDS, known as MEAS in Azerbaijani) and other sources to facilitate comparison of reports and automated data processing.

6. Establish an investor protection fund covering cases in which an investment company is unable to return clients' money or securities. Ordinary losses arising from market price movements are excluded from the fund's compensation coverage.

7. Introduce the three-tier system of financial instruments providing protection against inflation in stages over five years: inflation-linked bonds at the government tier; inflation-linked coupons and currency-basket-linked bonds for issuers with foreign currency revenues at the corporate tier; and tax-advantaged accounts, insurance products and a derivatives platform at the investor tier.

8. Implement the proposed framework for improving the system of state regulation of the securities market.

The dissertation's principal propositions, findings and proposals are reflected in the author's following academic articles and conference papers:

1. Monetary policy as an instrument for ensuring Azerbaijan's economic security // Construction Economics and Management. – 2022. – No. 2 (19). – pp. 214–219. (In Russian).

2. Analysis of the current state of monetary policy in Azerbaijan // Scientific Bulletin of Western Caspian University. – Baku, 2023. – No. 1. – pp. 123–128. (In Azerbaijani).

3. Analysis and prospects for the development of Azerbaijan's corporate securities market // Cooperation. – Baku, 2023. – No. 1. – pp. 24–30. (In Russian).

4. Prospects for securities market development in Azerbaijan // Journal of Labor and Social Relations. – 2023. – No. 1. – pp. 188–197. (In Russian).

5. Assessing the impact of monetary policy on Azerbaijan's securities market under contemporary conditions // Modern Research: Theory, Practice, Results: Proceedings of the International Scientific and Practical Conference. – Moscow, 16 November 2023. – pp. 285–293. (In Russian).

6. Theoretical and methodological aspects of assessing the impact of monetary policy on the securities market // Geostrategy. – Baku, 2023. – No. 6. – pp. 115–119. (In Azerbaijani).

7. Main directions for improving the securities market in Azerbaijan // Financial Economics. – Moscow, 2024. – No. 1. – pp. 163–167. (In Russian).

8. International experience in the effective organization of the securities market in the context of monetary policy // Scientific Bulletin of Western Caspian University. – Baku, 2024. – No. 1. – pp. 70–77 (co-authored with G. A. Safarov). (In Azerbaijani).

9. Important aspects of monetary policy in Azerbaijan in the context of securities market development // Sustainable Development of Society: New Scientific Approaches and Research: Proceedings of the IV International Scientific and Practical Conference. – Moscow, 11 March 2024. – pp. 74–82. (In Russian).

10. Ways of developing Azerbaijan's securities market // Proceedings of the VII National Scientific Conference of Young Researchers. – Baku: Azerbaijan University, 15 March 2024. – pp. 419–421. (In Azerbaijani).

11. Assessing the impact of inflation and risks on the securities market // Proceedings of the National Scientific Conference of Doctoral Students and Young Researchers dedicated to the 101st anniversary of National Leader Heydar Aliyev's birth, within the Year of Solidarity for a Green World and COP29. – Baku: ASOIU, 6–7 May 2024. – pp. 282–285. (In Azerbaijani).

12. Current issues in Azerbaijan's monetary policy and ways of improving it // Globalization of the World: Fundamental and Applied Aspects: Proceedings of the International Scientific and Practical Conference. – Moscow, 30 January 2025. – pp. 220–229. (In Russian).

13. The impact of oil revenue volatility on monetary policy and Azerbaijan's government bond market // Current Issues in Economic Sciences and Modern Management: Proceedings of the CIX International Scientific and Practical Conference, 5 August 2026. – Novosibirsk: SibAK, 2026. – No. 8(92). – pp. 13–22. URL: https://sibac.info/conf/economy/cix/428668. (In Russian).



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The dissertation is available in the library of the Institute of Economics of the Ministry of Science and Education of the Republic of Azerbaijan.

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