Challenges of Effective Capital Inflow Management in the Modern Geopolitical Context (Case Study of the Republic Of Armenia)

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ABSTRACT

In 2022, changes in the geopolitical situation led to a significant influx of labor and capital into the Republic of Armenia from countries of the Eurasian Economic Union (EAEU). However, this influx was rather chaotic, revealing a lack of long-term strategy on the part of Armenia's economic authorities to manage the changes in the country's economic structure brought about by the increase in migrants, business relocations, and the growth of investments through various channels. This article provides a comprehensive analysis of the economic situation and the mechanisms for capital management to maximize the positive effects and minimize potential risks.

The study includes an analysis of various aspects of capital inflows and their impact on Armenia's economic growth, such as foreign direct investment, remittances, and other financial flows. The results indicate that capital inflows have contributed to improving the country's external position, reducing the current account deficit, and increasing international reserves. The strengthening of the Armenian dram created favorable conditions for investments but complicated the situation for exporters. Additionally, there was an increase in economic lending, particularly in the mortgage sector, and an improvement in bank profitability. The analysis, using the SVAR model, allowed for an examination of the impact of structural shocks on economic indicators such as interest rates, exchange rate stability, and the current account balance.

Keywords: capital in flow, economic growth, labor force, external sector, financial sector

INTRODUCTION

In 2022, Armenia experienced a significant influx of migrants, businesses, and capital due to changes in the geopolitical landscape, which redirected trade and financial flows through the country, thereby strengthening its economy. The resulting effects included increased reserves, decreased loan dollarization, and a stronger national currency. Despite regional challenges and complexities, Armenia's economy demonstrated resilience, achieving a real GDP growth of 12.6%, driven by strong consumer activity and external demand.

The high economic performance in 2022 was largely due to the services sector, which accounted for approximately three-quarters of the growth, especially in finance, IT, transport, accommodation, and food services. Industry and construction also grew. Private consumption and a 10% increase in real wages, especially in IT and finance, drove strong demand.

Foreign direct investments more than doubled, mainly from the financial sector and Russian real estate investments. International reserves hit a record $3.7 billion, covering 4.4 months of imports by January 2023. Significant financial inflows and a shift to ruble settlements for gas strengthened the dram by 14% nominally and 34% in real terms against the US dollar.

Tourism from Russia nearly doubled to 800,000 people, accounting for almost half of total arrivals, with per-tourist expenditures significantly increasing. Between March 2022 and February 2023, 2,600 foreign companies and 6,000 foreign individual entrepreneurs, mostly from Russia, registered in Armenia, with 40% of companies and 65% of entrepreneurs in IT. The number of foreign workers and their average wages also doubled.

These events stimulated domestic demand, strengthened the national currency, increased money transfers, and reduced the dominance of the US dollar in credit transactions. However, they also introduced uncertainty to the economic outlook, which will be analyzed in this article.

LITERARY REVIEW

Economic growth theories identify four main components of economic growth: human capital development, population growth, capital accumulation and technology improvement [1]. Many studies such as Jain and Arya [2] have shown that developing countries do not have the capacity to attract the necessary resources needed to improve economic growth, which is largely due to low government revenues, high government spending and low savings. In the 1990s, private capital inflows to developing countries increased significantly, reaching $190 billion in 1996 (four times more than in 1990). These flows can integrate countries into the global financial system, but they are also accompanied by risks such as overheating of the economy, exchange rate volatility and capital outflow. Outflows are usually caused by distrust of domestic politics, economic vulnerability and the "contagion effect". Countercyclical measures, structural reforms and capital controls are used to manage flows, which is successfully practiced in various countries, for example in Chile, Colombia and Malaysia.

The inflow of foreign capital can affect economic growth both positively and negatively. Proponents of the idea of the positive impact of foreign capital on economic growth argue that developing countries, including South Africa, lag technologically behind developed economies. Therefore, such countries can improve their technology and productivity through capital inflows from developed countries, which contributes to increased productivity, employment, output and income [2].

Opponents of increasing foreign capital argue that, without control, this influx can negatively affect economic growth due to weak institutions, unstable macroeconomic policies and less developed financial markets [3]. In particular, they point to an increase in government debts and interest payments due to the constant flow of financial assistance in the form of official development assistance.

Prasad et al. [4] argue that many developing countries have excessive borrowing, and such borrowing can potentially negatively affect economic growth. In addition, significant capital inflows can potentially affect macroeconomic management, in particular, through an increase in the real exchange rate, inflationary pressures, rapid monetary expansion, and an increase in the current account deficit [3]. An interesting aspect of the negative impact of financial injections on economic growth is their instability, as this complicates macroeconomic management.

Empirical studies have shown that the inflow of foreign capital contributes to an increase in domestic savings, investment and economic growth in various countries. Ndambendia and Ndjupouognini [5] studied 38 countries of South Africa from 1980 to 2007, and came to the conclusion that this is an important development factor.

Some studies present mixed results on the impact of financial inflows on economic growth. Fambon [6] investigated this issue in Cameroon between 1980 and 2008, finding that domestic and foreign direct investment have a positive effect on economic growth, whereas foreign aid has only a limited positive impact in both the long and short term.

Studies by Liu et al. [7], Driffield and Chris [8], Yu and Lau [9] and Phiri [10] report on the negative impact of foreign aid on the economic growth of recipient countries. In particular, Yu and Lau [9] analyzed the impact of ODA on economic growth using panel data on 95 developing countries for the period 2005-2013, and concluded that initially ODA has a negative impact on economic growth, but after a while it has a positive impact on economic growth.

In a corresponding study by Phiri [10], using data on 12 least developed countries in Africa for 20 years (1995-2014) and the method of instrumental variables with fixed effects, it was concluded that aid has a negative impact on economic growth. Other studies also claim that help is effective under certain conditions. For example, Burnside and Dollar [11], Chauvet and Guillaumont [12] report that aid can have a positive impact on economic growth only if there are high-quality investments in recipient countries.

Minoyu and Reddy [13] investigated the impact of non-developing and developmental aid on economic growth and concluded that developmental aid has a positive and significant effect on economic growth in the long term. However, the works of Easterly [14] and Kolavole [15] argue that aid has no effect on growth regardless of the quality of institutions.

ECONOMIC GROWTH

Economic growth increased significantly from 5.7% in 2021 to 12.6% in 2022, reaching its highest level since 2008 due to strong demand and investment from Russia. The service sector grew from 6.9% to 17.7%. Transport, information technology and finance have shown steady growth. The real estate, information technology and trade sectors continued to support growth in 2023, while industrial output growth decreased and financial services decreased (fig.1).
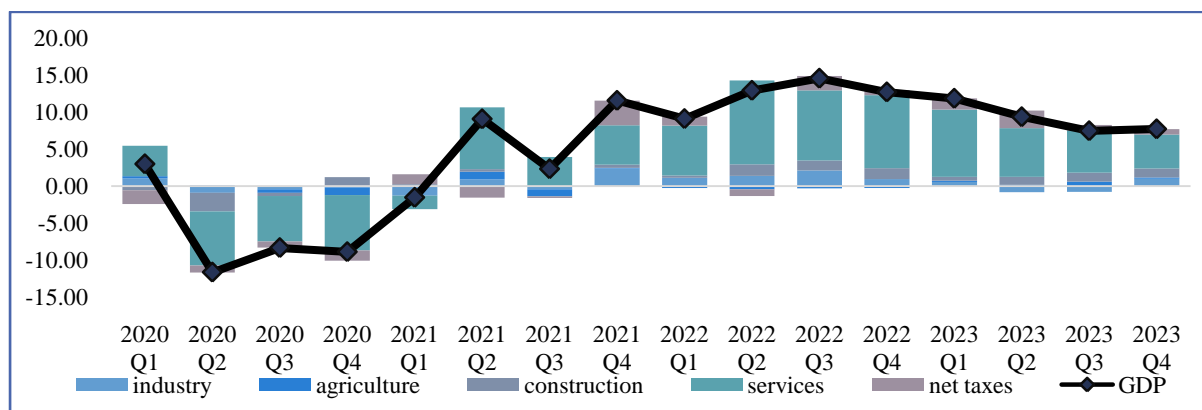
Fig. 1 Decomposition of quarterly GDP growth by production, 2020-2023 Source: Statistical Committee of Armenia

Consumption was the driving force behind the growth, and there was an increase from 3.4% to 8.2%, mainly due to remittances. The foreign trade deficit has decreased, due to which exports exceeded imports (fig. 2).
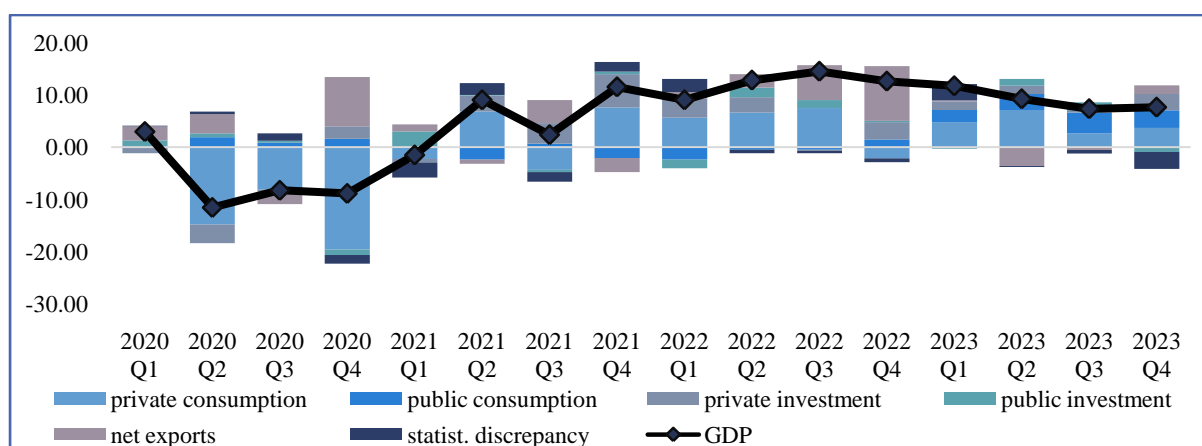

Fig. 1 Decomposition of quarterly GDP growth by consumption, 2020-2023
Source: Statistical Committee of Armenia

Due to the significant inflow of financial resources into the country, including the movement of individuals, money transfers and capital, the Armenian dram has been steadily strengthening against the currencies of trading partners since the beginning of the second quarter of 2022. As a result, the dram strengthened against the dollar by 19.8%, against the euro by 21.7% and against the Russian ruble by 32.4% compared to the beginning of 2022 (fig. 3).
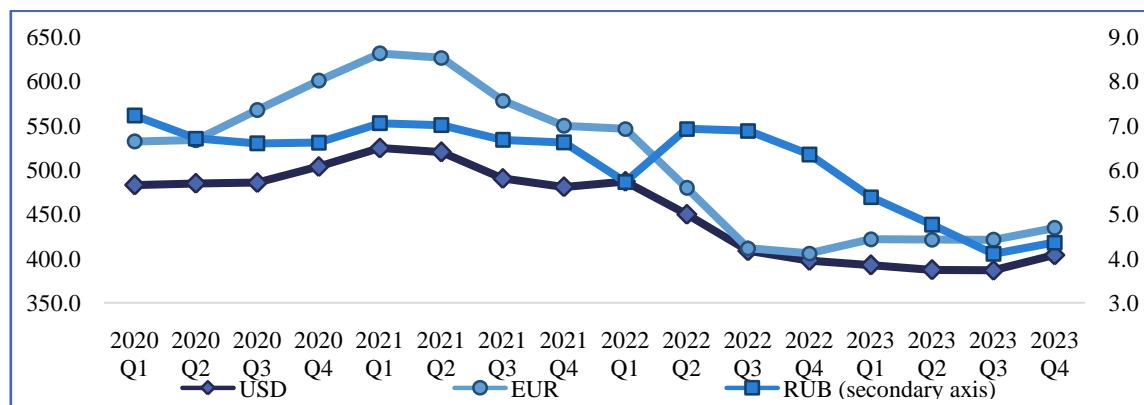

Fig. 2 Dynamics of the average quarterly exchange rate of foreign currencies for Armenian drams, 2020-2023
Source: Database of the Central Bank of Armenia

The real effective dram exchange rate strengthened by 33.6% in 2022 and by 40% by June 2023 relative to the beginning of 2022. The Armenian dram (AMD) remained stable in 2023 (Fig. 4). These currency dynamics have created favorable conditions for investment, but have complicated the situation of Armenian exporters.
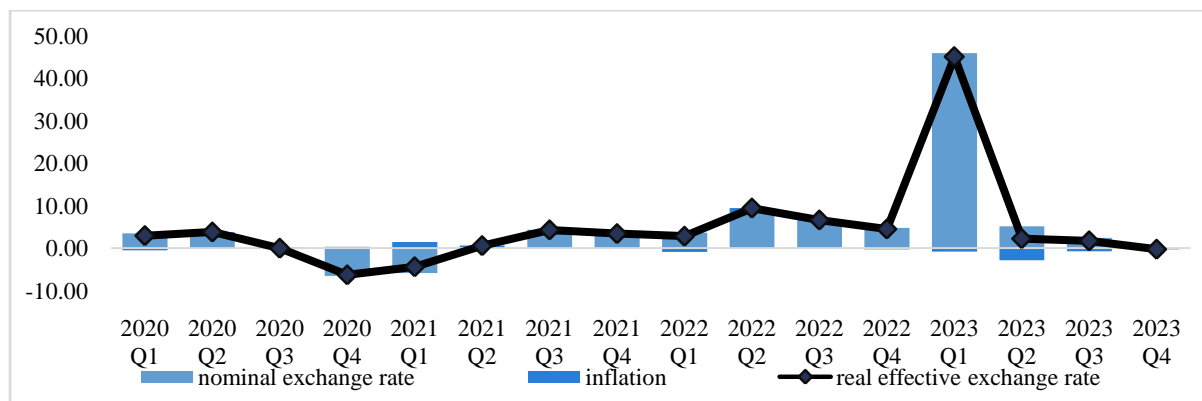

Fig. 3 Decomposition of the quarterly increase in the real effective exchange rate, 2020-2023
Source: Database of the Central Bank of Armenia

The average annual inflation rate in 2022 reached 8.6%, compared with 7.2% in 2021. Food prices increased by 12.5%, for other goods — by 7.0%, and for services — by 5.2%. Annual inflation in December 2022 was 8.3%, which is significantly higher than the upper limit of the target range of the Central Bank of Armenia of 2.5% – 5.5% (fig. 5).
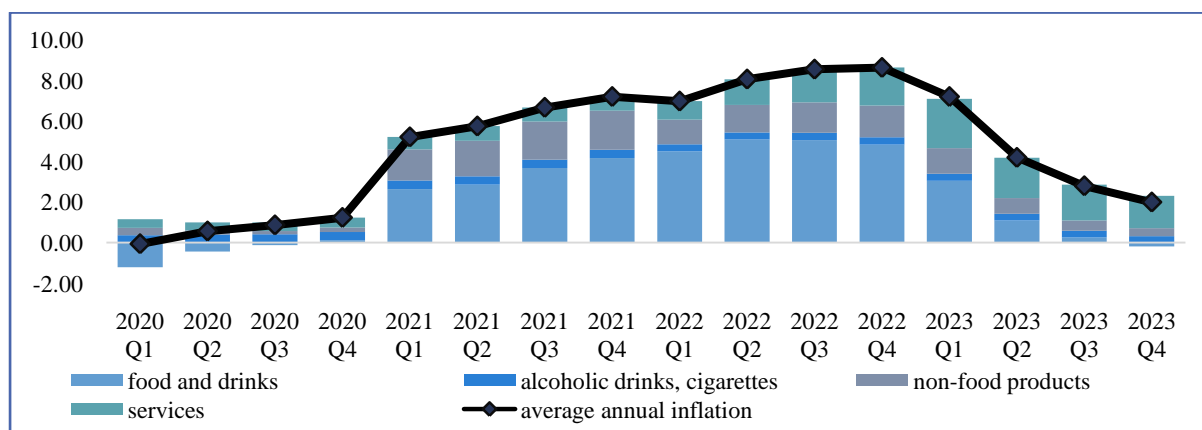

Fig. 4 Decomposition of quarterly inflation, 2020-2023
Source: Database of the Central Bank of Armenia

To contain inflation, the central bank continued to tighten monetary policy for the second year in a row in 2022, raising its benchmark interest rate by a cumulative 300 basis points in six phases to 10.75% by the end of the year (fig. 6). Monetary policy is expected to remain tight for most of 2023 to contain inflation, gradually easing towards the end of 2023 and in 2024 as both domestic and external demand decreases.
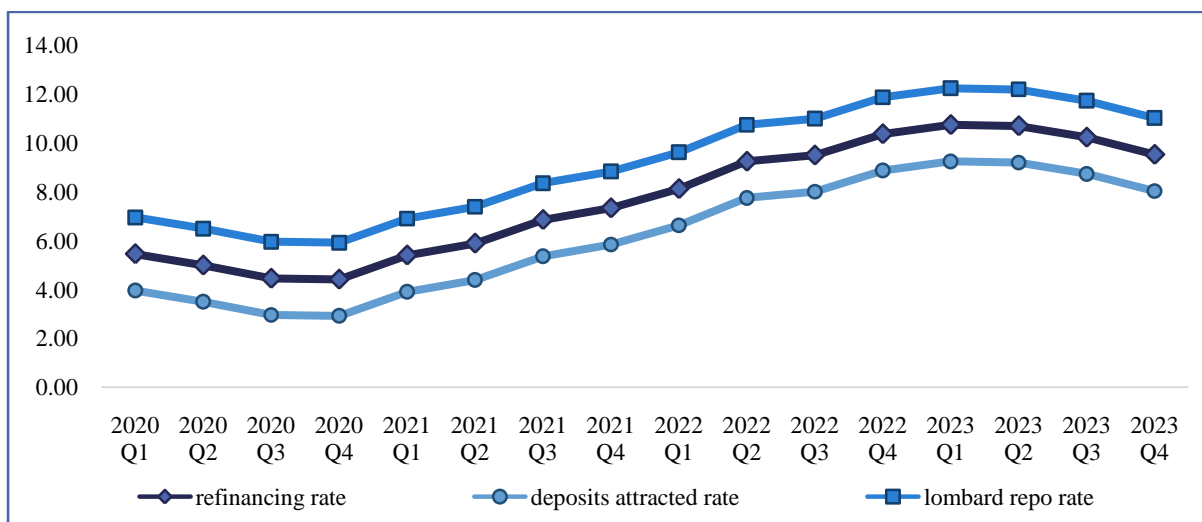
Fig. 5 Dynamics of average quarterly rates of the Central Bank of the Republic of Armenia, 2020-2023
Source: Database of the Central Bank of Armenia

The unemployment rate fell to 11.6% in the third quarter of 2022 from 15.5% at the end of 2021, and this is expected to lead to a significant reduction in poverty in 2022 (fig.7).
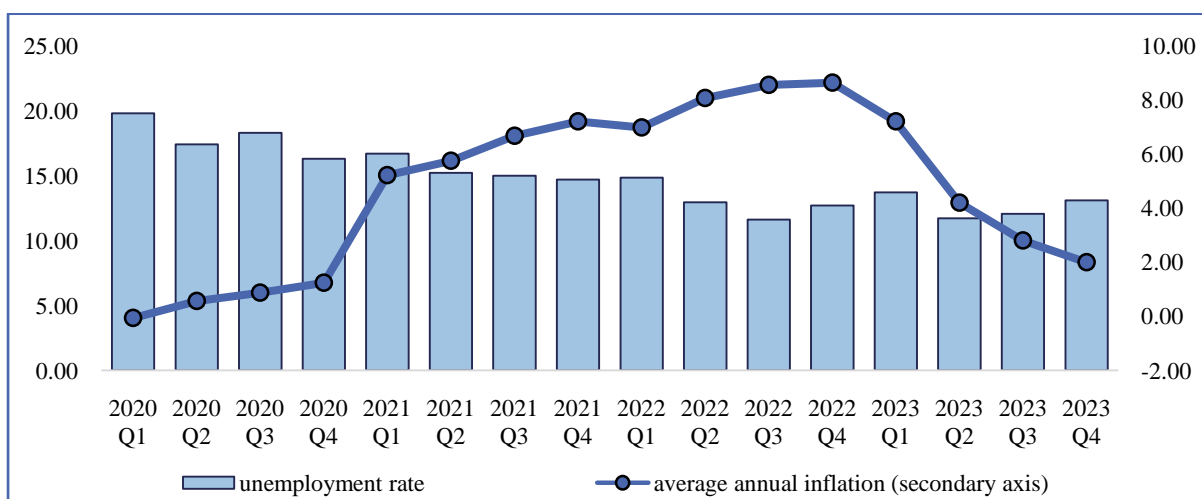

Fig. 6. Dynamics of the unemployment rate and average annual inflation, 2020-2023.
Source: Database of the Central Bank of Armenia

Inflation is projected to gradually decrease to the target level of 4% by 2025. Macroeconomic forecasts suggest that the proportion of the population below the poverty line for countries with lower-than-average income (6.85 USD per day, 2017, PPP) will decrease from 51.7% in 2021 to 41.8% in 2022 and to a projected 38.4% in 2023.

THE EXTERNAL SECTOR
During2022, there was a significant improvement in the external balance, characterized by an unprecedented increase in exports of goods and services. This surge was, in part, due to the re-export of goods to Russia. Both tourism revenues and remittances increased three fold in 2022 compared to the previous year.
This significant increase can largely be attributed to a significant increase in revenue from Russia. Armenia's foreign position has improved due to the surplus in services and the growth of money transfers from Russia. The current account deficit decreased from 3.7% of GDP in 2021 to 2.0% in 2022 (fig. 8).
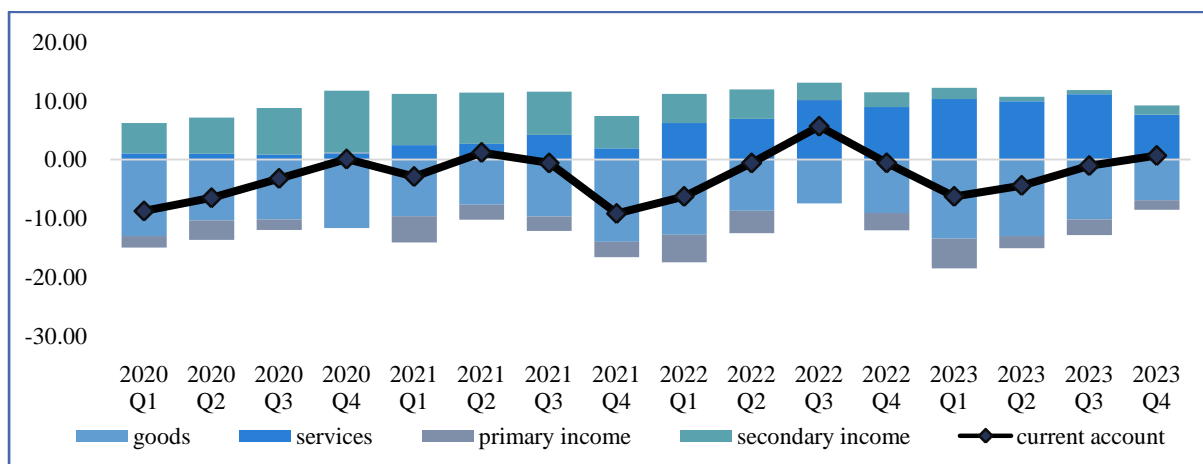
Fig. 7 Dynamics of the ratio of current account components to GDP in percent, 2020-2023
Source: Database of the Central Bank of Armenia

The trade deficit in goods increased from 10.9% to 11.5% of GDP due to the growth of transit trade, which stimulated the growth of exports and imports. Gross international reserves reached a record of $4.1 billion by the end of 2022, providing coverage for 4.6 months of imports of goods and services (fig. 9).
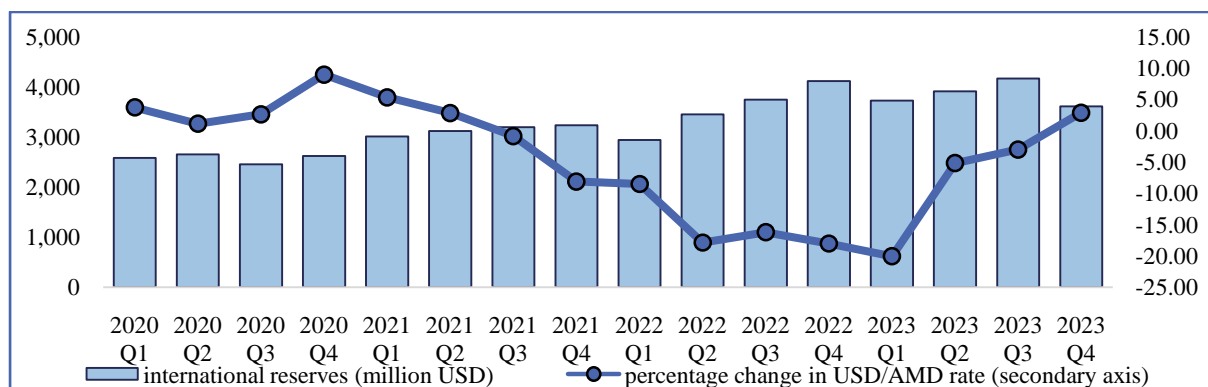

Fig. 8 Dynamics of international reserves and percentage change in the exchange rate between USD and Armenian drams at the end of the period, 2020-2023
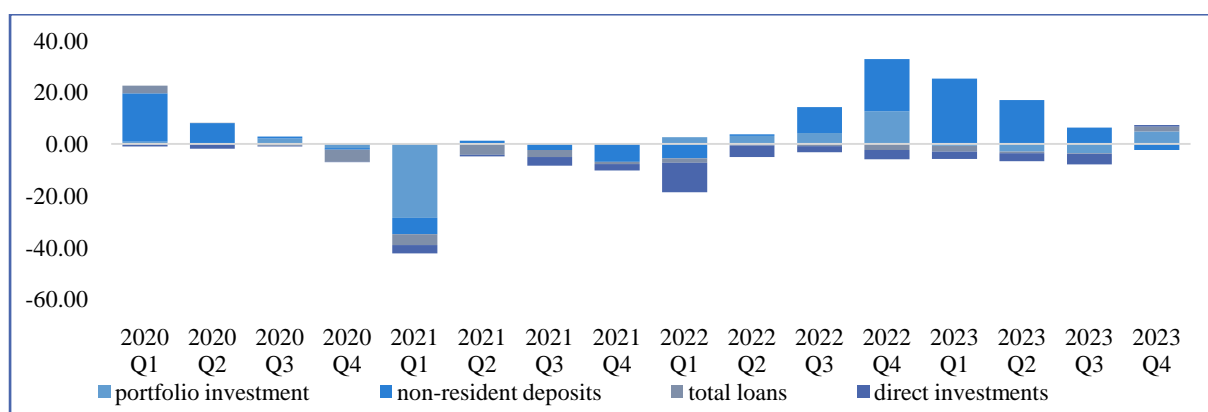Source: Statistical Committee of Armenia

Fig. 9 Dynamics of the ratio of components of capital flows to GDP in percent, 2020-2023
Source: Database of the Central Bank of Armenia

In 2022, trade with Russia boosted GDP by about 4% due to an improved trade balance. Exports rose by two-thirds, imports by a quarter, leading to a 3% GDP adjustment. Service exports, including tourism and immigration, increased to 9% of GDP, narrowing the current account gap by 1.6%. Emigrant remittances added 1% to GDP. These factors, along with trade and tourism changes, strengthened the dram, prompting a 0.86% GDP correction for the current account gap.

Money supply growth accelerated from 13.1% in 2021 to 16.1% in 2022, due to higher economic activity, as well as significant remittances and capital inflows (fig. 11).
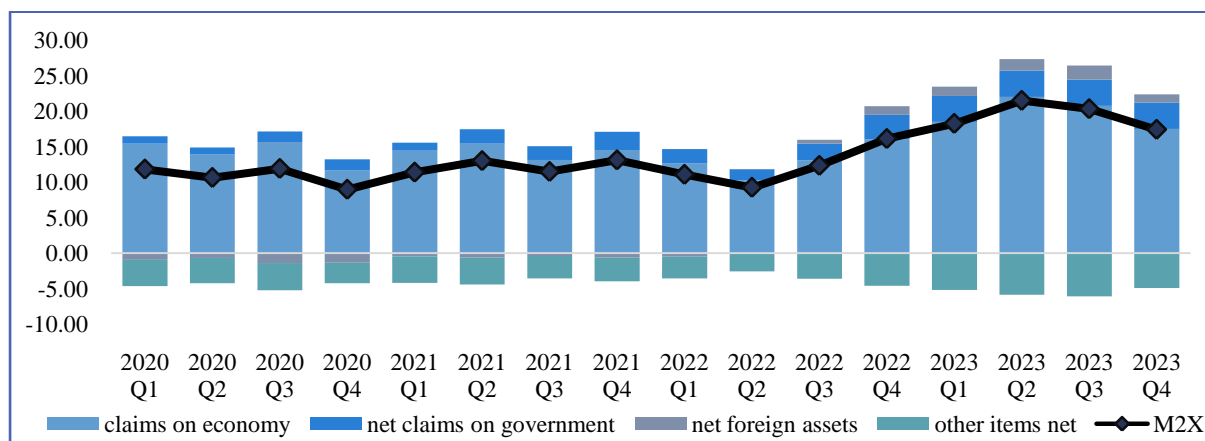

Fig. 10 Decomposition of the quarterly growth of the M2X monetary aggregate and its components, 2020-2023.
Source: Statistical Committee of Armenia

The Central Bank's net foreign assets grew due to an increase of 8.4%,and institutions reduced the negative balance by29.5%. Lending to the economy increased by 4.5%, especially mortgage lending, which increased by 32.5%. Deposits in local currency increased by15.9%,in foreign currency -by21.0%. The profitability of banks has improved due to income from currency transactions. Problem loans have increased, but remainat a low level—2.6% of all loans.

REMITTANCES
Approximately 5.2 billion US dollars in personal money transfers were sent to Armenia in 2022, of which 3.6 billion dollars came from Russia, which is also a record amount (fig. 12).
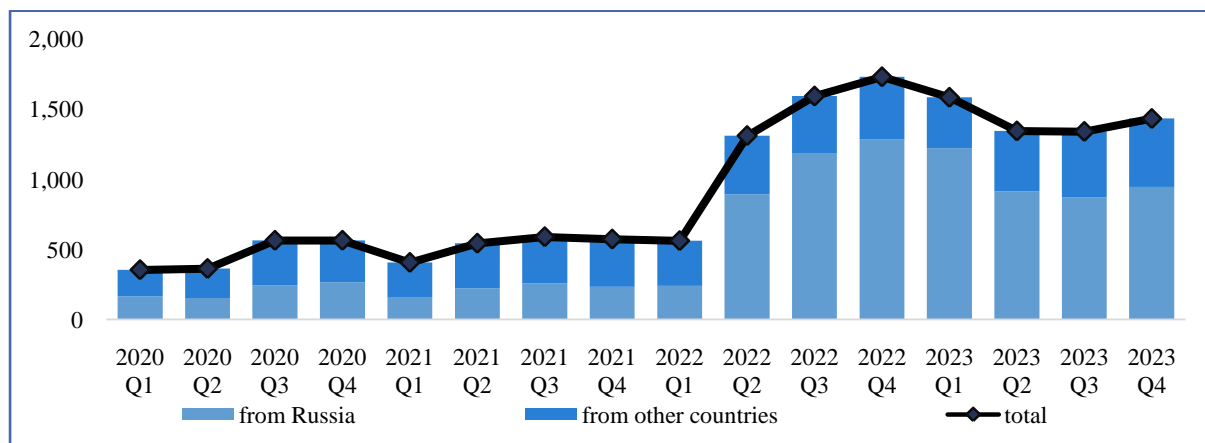

Fig 12. Dynamics of quarterly inflows of remittances in billions of US dollars, 2020-2023. Source: Statistical Committee of Armenia

Following recent events, many Russians migrated to Armenia, bringing along their capital. This influx revitalized the Armenian economy but also drove up local prices. The Central Bank of Armenia categorizes money flowing in and out of the country into commercial and non-commercial transactions. Commercial transfers encompass trade activities, securities investments, loans, and various other financial operations. These funds not only include remittances from Armenians abroad to their families but also cover transactions related to purchasing goods and conducting business activities by individuals.
In 2022, money transfers from Armenia to foreign countries doubled, and individuals sent 2.6 billion US dollars through banks. This amount represents a significant 2.1-fold increase (equivalent to $1.4 billion) compared to 2021 (fig. 13).
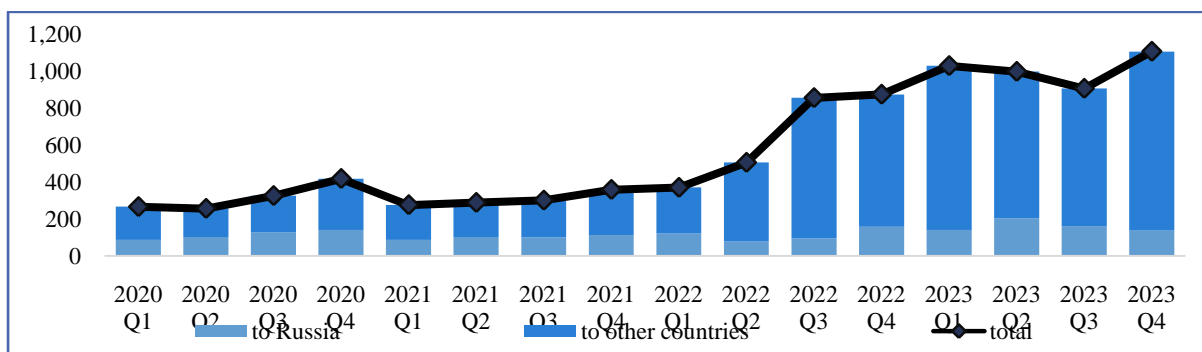
Fig 11. Dynamics of quarterly outflows of remittances in billions of US dollars, 2020-2023
Source: Statistical Committee of Armenia

THE REAL ESTATE MARKET

In 2022, the Armenian real estate market experienced a significant surge in the number of transactions involving foreign citizens in more than 4,900 out of 52,000 purchase and sale transactions (fig. 14). It should be noted that the majority of foreign buyers in 2022 were Russian citizens.
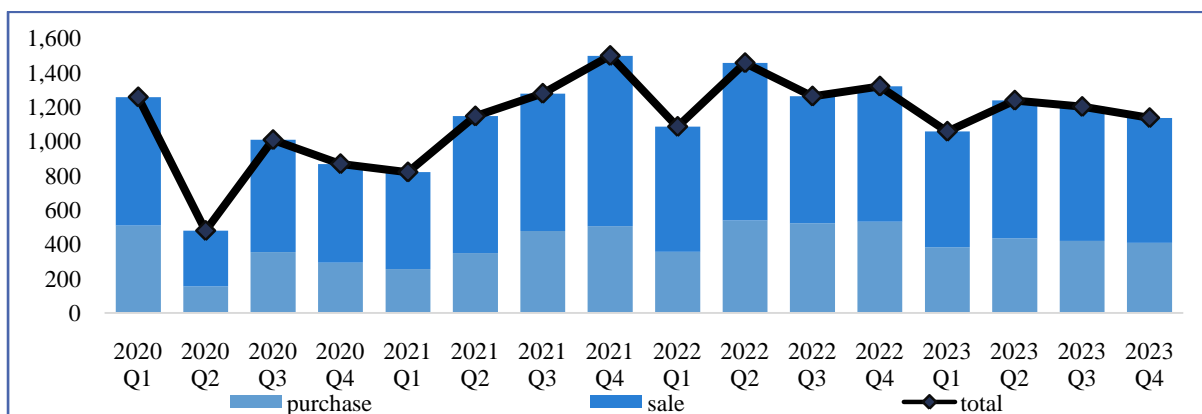

Fig. 12 Dynamics of the quarterly number of purchase and sale transactions for real estate made by foreign citizens, 2020-2023.
Source: Statistical Committee of Armenia

The rental market also experienced an unprecedented level of activity in 2022, especially in Yerevan, where the volume of rental transactions increased by about 10%. One real estate agency even reported an almost 100% spike in rents, although this growth has slowed over the past two months. Data from the State Cadastral Service Committee showed that in 2022 the total number of real estate transactions in Armenia amounted to 204,910 transactions, which means an increase of 1.7% compared to 2021, when 201,563 transactions were conducted (fig. 15).
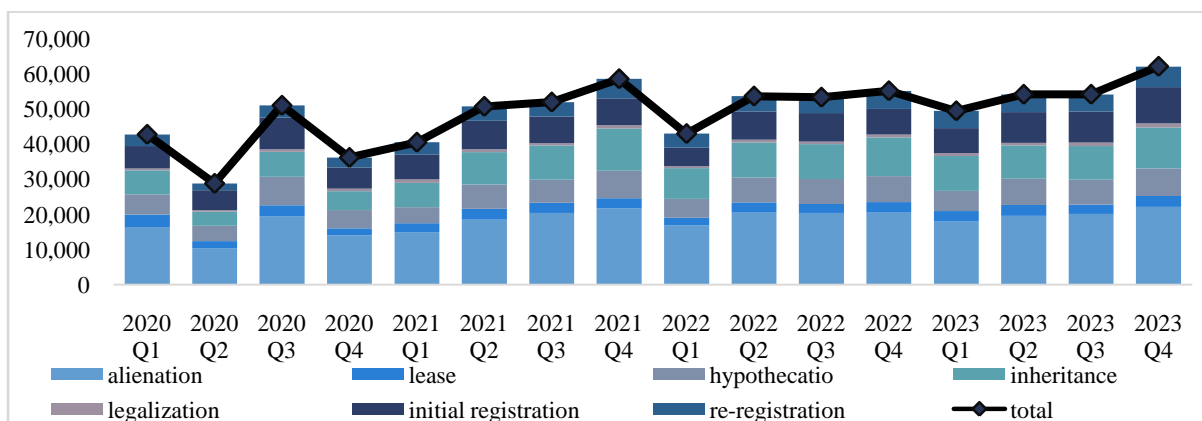

Fig 13. Dynamics of the quarterly number of transactions carried out in relation to real estate by type of transaction, 2020-2023.

Source: Statistical Committee of Armenia

In 2022, there was an increase in rental transactions and housing prices in Yerevan. The cost of renting a 1-room apartment in the center of the capital decreased from 1200 to 800 US dollars (Fig. 16), after previously being around 500 US dollars. Currently, rental prices are declining due to an increase in supply, although home sales prices remain high. The price per square meter in the center of Yerevan ranges from 2000 to 3000 US dollars and reaches 5000 US dollars in new buildings, while in old buildings it is about 1700-1800 US dollars.
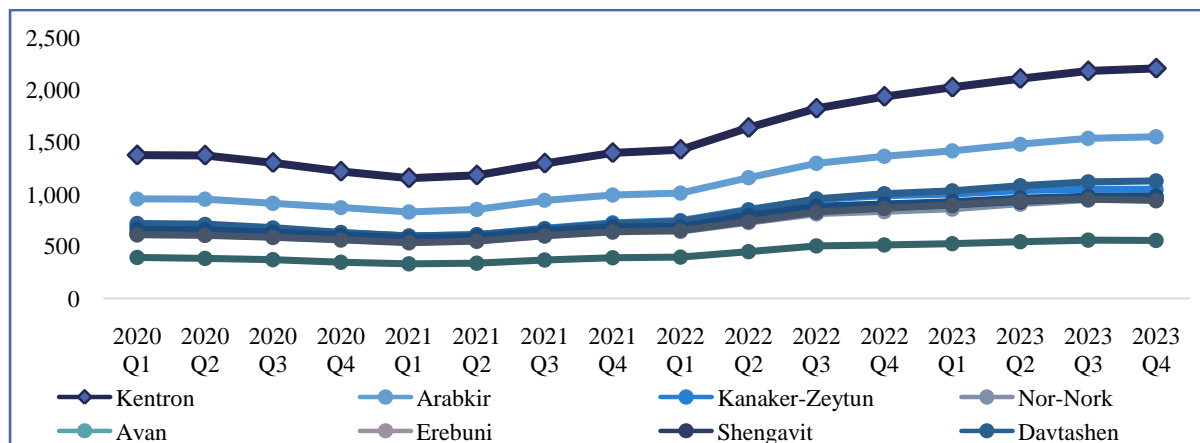

Fig 14. Dynamics of market average quarterly prices for apartments in multi-apartment buildings by administrative districts and zones of Yerevan in US dollars, 2020-2023.
Source: Statistical Committee of Armenia

The real estate market is extremely sensitive, with properties that are often purchased for investment purposes rather than for living. Fluctuations in the political and economic landscape, especially those related to Russia, can have a significant impact on the market. Due to exposure to external factors, it is difficult to make forecasts for this market.

In general, the financial system is currently stable, but there are growing risks that should be taken into account. Following the double-digit growth in mortgage and construction lending, banks have become more vulnerable to real estate risks.

In 2022, there was a sharp increase in net non-resident deposits (9.0% of GDP), which differs from 2021, when there were outflows (0.9% of GDP). However, this increase was offset by outflows of portfolio investments (7.0% of GDP), reflecting significant acquisitions of financial assets. Investments by foreign direct investors have increased significantly due to the situation in Ukraine. The net inflow of foreign direct investment in 2022 amounted to 4.9% of GDP, as opposed to 2.5% of GDP in 2021, which is significantly higher than the historical average of 1.5% of GDP.

RESEARCH METHODOLOGY

In order to assess the current situation, a model of structural vector autoregression was used. The structural autoregression model has the form:

$$AY_t = \left(\sum_{i=1}^{p} B_i Y_{t-i} \right) + e_t \# \tag{1}$$

where AY_t – vector of endogenous variables; p – the duration of the lag; A – matrix of impulse responses coefficients; B – matrix of lag impact coefficients; et – standard errors of the covariance matrix.

Our sample includes quarterly data for the period from 2007 to 2023. We select this period in order to cover the global financial crisis (2008-2010), the regional crisis (2014-2016), COVID-19 (2020-2021), the Second Artsakh War (2020), a special military operation (2022- 2023) and resettlement from Artsakh (2023). The variable models are presented in table 1.

Table 1. Description of model variables

Name	Description of the variable
FDI	Real share of FDI in flows in GDP, index $$\frac{\frac{fdi_{inflow}}{cpi_{arm}} \cdot 100 \cdot forex_{\frac{usd}{amd}}}{real\ GDP_{arm}} + 100 \#(2)$$

MR	Real money market interest rates, percentage $$\text{money \ market \ rate} - \text{cpi}_{\text{arm}} - 100 \#(3)$$
ERS	Exchange rate stability index, index $$\frac{0.01}{0.01 + \text{st. dev}\left(\Delta\left(\log\log\left(\text{forex}_{\frac{\text{usd}}{\text{amd}}}\right)\right)\right)} \#(4)$$
CA	the real share of the current account in GDP ,index $$\frac{\frac{\text{current \ account}}{\text{cpi}_{\text{arm}}} \cdot 100 \cdot \text{forex}_{\frac{\text{usd}}{\text{amd}}}}{\text{real GDP}_{\text{arm}}} + 100 \#(5)$$

Source: compiled by the authors

To assess the SVAR model, it is crucial to outline the simultaneous interactions among macroeconomic variables. Statistically, this approach results in uncorrelated shocks, which, from an economic standpoint, are regarded as structural and thus carry economic meaning. By specifying the $Au_t = Be_t$ ratio, especially the A matrix, it becomes evident that a particular macroeconomic shock induces simultaneous responses across different economic indicators.

There are several ways to determine impulse responses. In accordance with economic theory and expert opinion, based on a statistical procedure consisting in the construction of an oriented acyclic graph

At the first stage, the matrix of VAR residuals is calculated, and then used to build a graph of correlations and relationships between variables. Another approach involved testing the constraints of the Cholesky scheme and removing insignificant variables to avoid inappropriate reactions to shocks. The variables were ordered according to the degree of endogeneity. The constraint matrix (A), identified by Cholesky.

Each of the restrictions introduced in this way could be tested for statisticalsignificance, and then the insignificant ones could be removed. Due to the fact that the presented structural vector autoregression is over-identified, the imposed restrictions on simultaneous ones were tested. According to the results of the LR test, the chosen identification scheme is not rejected at the 5% significance level [18]. At the same time, all the estimated elements of the matrix of short-term simultaneous connections are statistically significant. It should also be noted that the established simultaneous links of macroeconomic indicators do not contradict economic theory and the specifics of the Armenian economy

RESULTS AND DISCUSSIONS

The specification of the SVAR model is approximated to the national economy by identifying simultaneous connections of macro variables, which makes the considered responses of economic indicators to shocks interpreted from an economic point of view.

Table 2 presents the results of the vector regression assessment.

Table 2. VAR estimation results

	MR	ERS	CA	FDI
MR	0.814958	0.003377	0.55606	-0.37568
	-0.07384	-0.0032	-0.19203	-0.08781
	[11.0365]	[1.05672]	[2.89574]	[-4.27843]
ERS	0	0.724399	-0.8121	-6.88239
	---	-0.08246	-4.86756	-2.31145
	---	[8.78484]	[-0.16684]	[-2.97752]
CA	0	0.000534	0.434175	-0.12634
	---	-0.00171	-0.10103	-0.05095
	---	[0.31223]	[4.29768]	[-2.47988]
FDI	0	0	0	-0.1027
	---	---	---	-0.12
	---	---	---	[-0.85578]
C	0.752436	0.094142	-5.59015	7.175747
	-0.38176	(0.037 63)	-2.22906	-1.20959
	[1.97094]	[2.50171]	[-2.50786]	[5.93239]
R-squared	0.645133	0.55347	0.325796	0.392342
Sum sq. resids	398.1462	0.701469	2538.178	476.2545

| Mean dependent | 3.388514 | 0.355572 | -7.47694 | 4.091887 |
| S.D. dependent | 4.123032 | 0.154279 | 7.552545 | 3.446021 |

Source / Источник: compiled by the authors / составленоавторами

The evaluation of the SVAR model based on empirical data from the Republic of Armenia, in which restrictions on simultaneous connections are imposed according to the Kholetsky methodology, allowed us to obtain functions of impulse responses to structural shocks (table 3).

We have obtained the function of the impulse response of the share of FDI inflows in GDP to the shock of interest rates in the money market, the index of exchange rate stability, the share of the current account in GDP (for other functions of the impulse response, see the appendix for more details).

As can be seen from the results obtained, an increase in interest rates in the money market leads to a decrease in the share of FDI in GDP.

If we consider the impulse response function of the exchange rate stability index, we note that with an increase in the index, the share of FDI in GDP decreases. This is based on the fact that a higher index value indicates a greater degree of stability of the exchange rate, and, as a result, the strengthening of the dram against the dollar, which negatively affects FDI inflows.

As for the share of the current account in GDP, when it grows, according to the function obtained, the share of FDI in GDP increases.

Table 3. Impulse response function of the share of FDI inflows in GDP
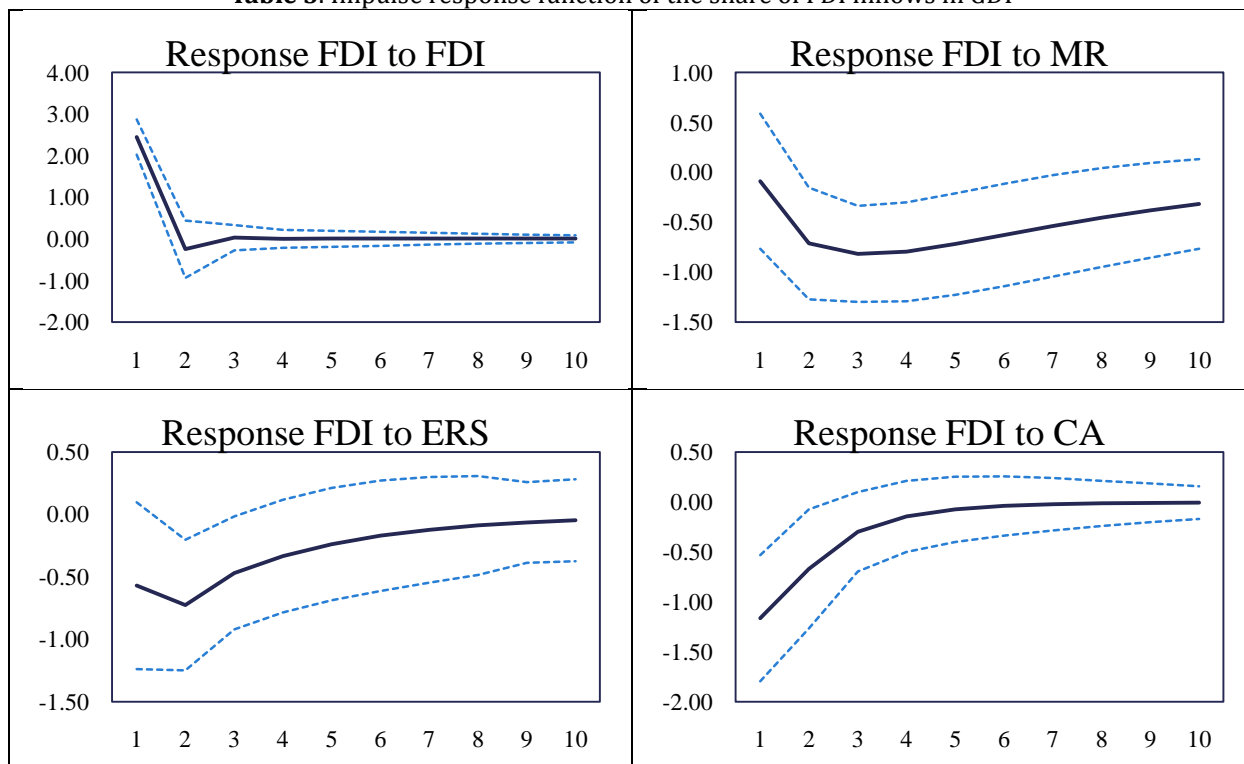
Source: compiled by the authors

Below, we present how the share of FDI inflows in GDP responds to a 1% change in the dependent variables over different lag periods (table 4).

Table 4. Variance decomposition of the share of FDI inflows in GDP

	FDI	MR	ERS	CA
1	78	0.11	4.25	17.65
2	65.59	5.61	9.26	19.54
3	59.31	11.63	10.53	18.53
4	55.16	16.61	10.81	17.42
5	52.39	20.27	10.75	16.59
6	50.53	22.85	10.61	16.01
7	49.27	24.64	10.47	15.62

8	48.43	25.87	10.35	15.35
9	47.85	26.72	10.26	15.17
10	47.46	27.3	10.19	15.05

Source: compiled by the authors

Thus, based on the assessment results, we can say that the amount of FDI in Armenia is influenced by interest rates on the money market, the exchange rate stability index and the current account.

CONCLUSION

Thus, the analysis shows that capital flows play a key role in shaping the country's economic landscape. In recent years, the Armenian economy has been under the constant influence of external exogenous events. All the crises led to noticeable changes in the economic development of the country.

The year 2022 brought significant changes to the country's economic landscape. An influx of skilled professionals, entrepreneurs, and capital contributed to increased economic activity and strengthened financial stability. GDP growth accelerated, particularly after the global financial crisis of 2008. The service sector, including finance, IT, and transport, emerged as a key driver of economic expansion. Financial stability indicators, such as the ratio of non-performing loans to the total loan portfolio, showed improvement. The profitability of assets, equity, operating efficiency, and income of banks, along with their net profits, are closely linked to the positive developments observed in 2022.

In conclusion, I would like to note that the Armenian economy has demonstrated impressive resilience and adaptability in 2022, despite the fact that it has faced difficulties, but these problems continue to worsen, especially those related to the difficult geopoliticalsituation in the country. Monitoring these trends and implementing appropriate policy measures will be crucial for Armenia's economic prospects in the future.

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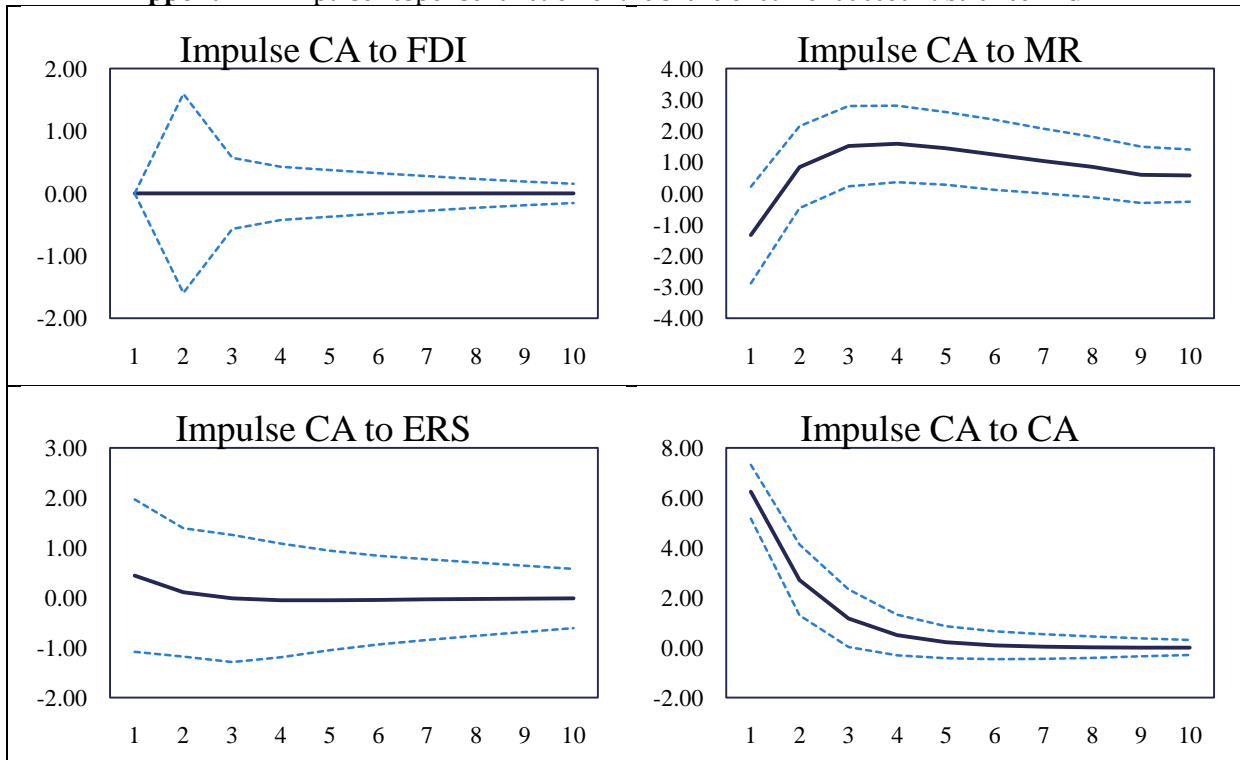**Appendix 1.** Impulse response function of the money market rate
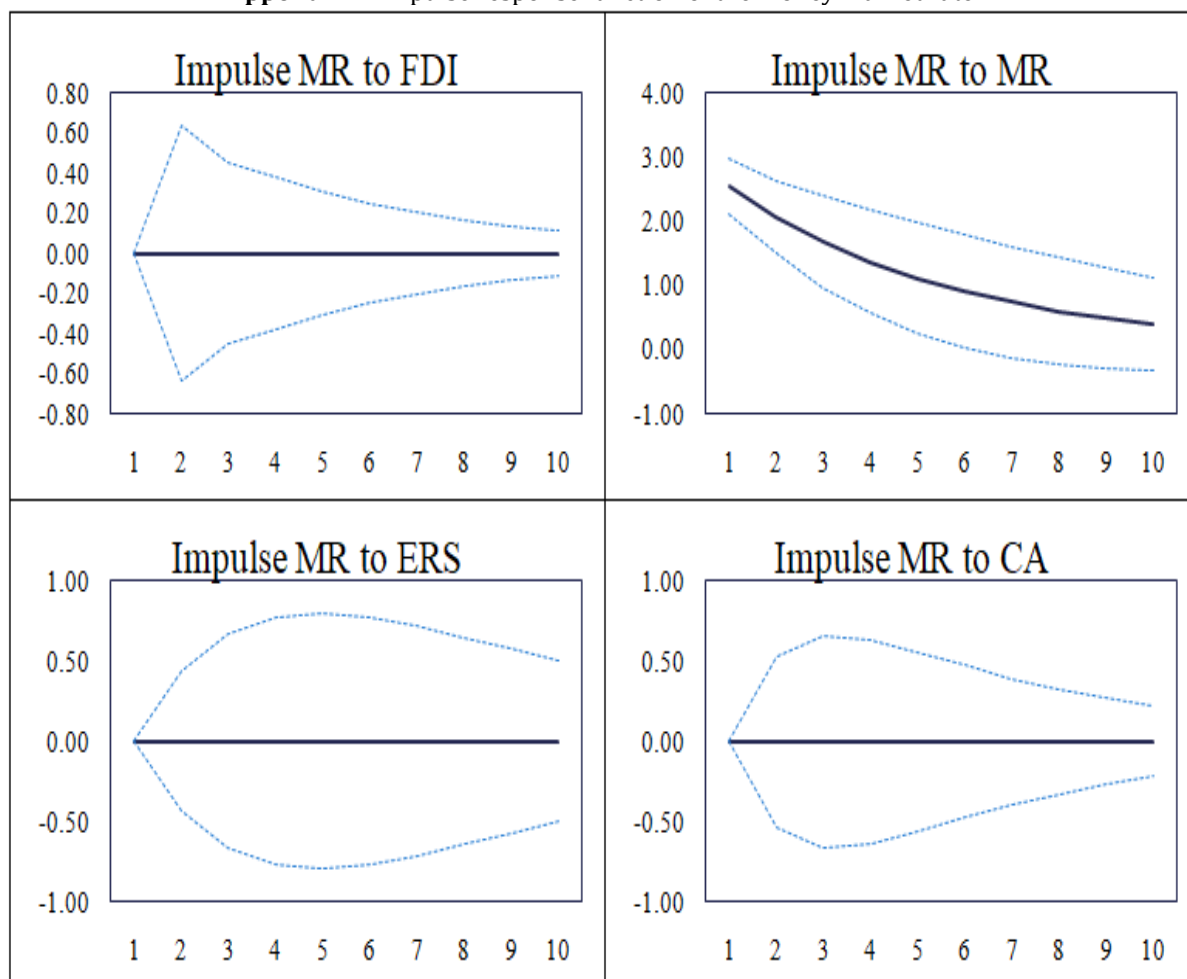
Source: compiled by the authors

Appendix 1. Impulse response function of the exchange rate stability index
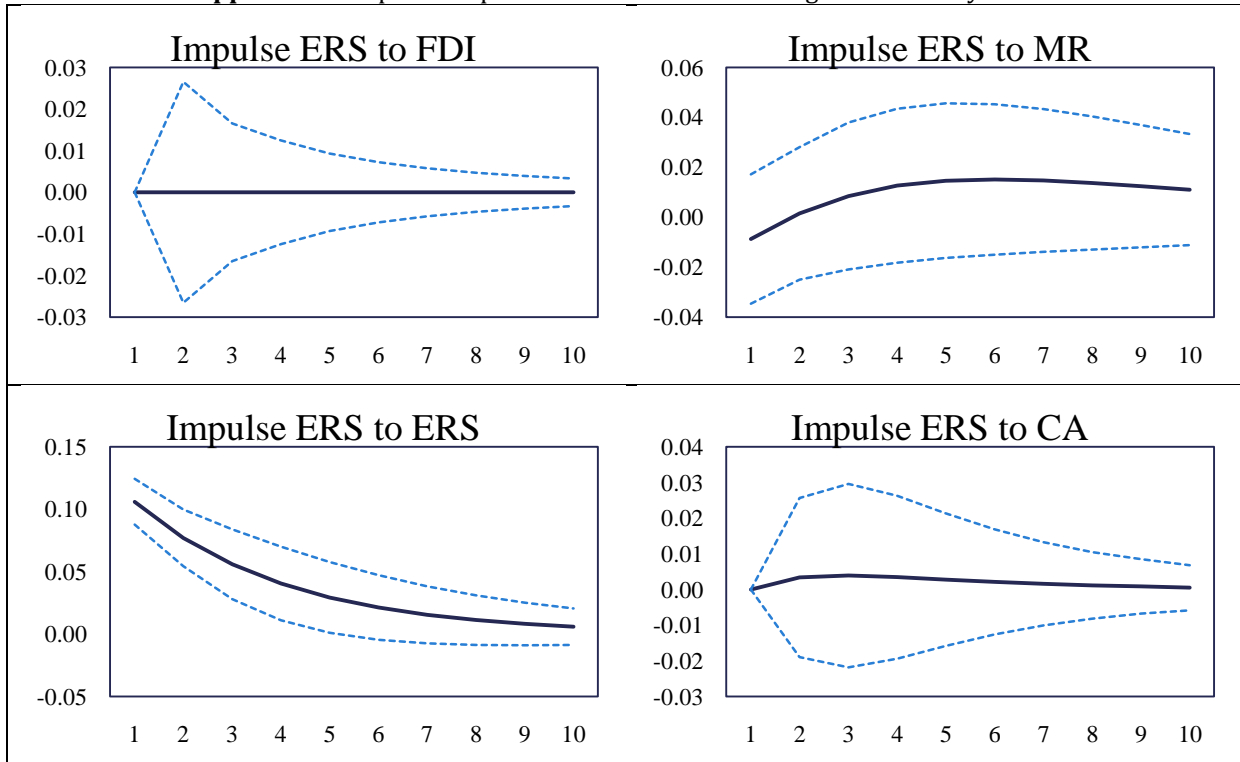
Source: compiled by the authors

Appendix 2. Impulse response function of the share of current account balance in GDP

Source: compiled by the authors