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CONTENT

OVERCOMING HYPERINFLATION AND MACROECONOMIC STABILIZATION IN GEORGIA: PRECONDITIONS FOR INTRODUCING THE LARI AS A FULL-FLEDGED NATIONAL CURRENCY

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Abstract

This article discusses how overcoming hyperinflation and ensuring macroeconomic stabilization in Georgia were essential prerequisites for the successful introduction of the Lari as a full-fledged national currency. The paper analyzes the macroeconomic and institutional challenges that characterized the early 1990s, with particular attention placed on issues related to fiscal dominance and the limited institutional independence of the National Bank of Georgia. It also explores the reasons behind the failure of the Coupon as a temporary monetary unit. The study highlights the role of fiscal consolidation and tight monetary policy in the macroeconomic stabilization process, as well as the importance of the International Monetary Fund's involvement. The analysis reveals that restoring price stability and successfully introducing the Lari as a full-fledged national currency were only made possible under conditions of institutional strengthening, rational fiscal policy, and independent monetary policy.

Keywords: Lari, Coupon, hyperinflation, National Bank of Georgia, International Monetary Fund, monetary policy, fiscal deficit.

Introduction

The development of Georgia's economy in the post-Soviet period can be divided into four major stages: the first spans the years 1991-1995; the second, 1995-2003; the third, 2003-2012; and the fourth covers the period from 2013 to the present. Notably, each of these stages culminated in the maturation of a new phase in Georgia's monetary policy transformation. The focus of this paper is the first stage (1991-1995), which culminated in the introduction the Lari as a full-fledged national currency – a pivotal milestone for Georgia's monetary sovereignty.

Following the restoration of independence in 1992, Georgia was engulfed in a severe political and economic crisis. Armed conflicts and the collapse of state institutions, coupled with the disruption of economic and financial ties with former Soviet republics, led the national economy to the brink of complete collapse. The disintegration of the unified trade and payments system of the former Soviet Union resulted in a sharp decline in foreign trade and triggered a rapid rise in prices. The situation was made particularly complicated by the cessa-

tion of financial transfers and capital flows from the central authorities of the former Soviet Union. Georgia's economic potential, which was one of the highest in the former Soviet space, declined significantly. The country was unable to utilize the industrial capacities it inherited from the Soviet era: amid the crisis, industrial activity and, consequently, capital consumption virtually ceased, and a significant part of the country's intellectual elite and professional workforce emigrated against the backdrop of sharply deteriorating prospects (Wang, 1999). As a result, Georgia experienced a stagflationary shock. According to World Bank (2025) data, between 1991 and 1994, the country's economy contracted by approximately 26.4% (see Figure 1), while the average

annual inflation rate reached 4,178% (GeoStat, 2025).

Under the impact of destabilizing shocks, which were associated with the externally driven economic crisis, political chaos, internal conflicts, and the breakdown of public order, the National Bank of Georgia (NBG), which had been restored in 1991, came under intense pressure from the executive branch. Amid institutional fragility, the NBG was unable to maintain its independence and resorted to monetary expansion, which became manifested in the financing of government expenditures, and the provision of emission-based credit resources to commercial banks. As expected, this process significantly intensified inflationary pressures and contributed to the escalation of hyperinflation (Kakulia, 2008).

Figure 1. Annual Growth of Real GDP in Georgia
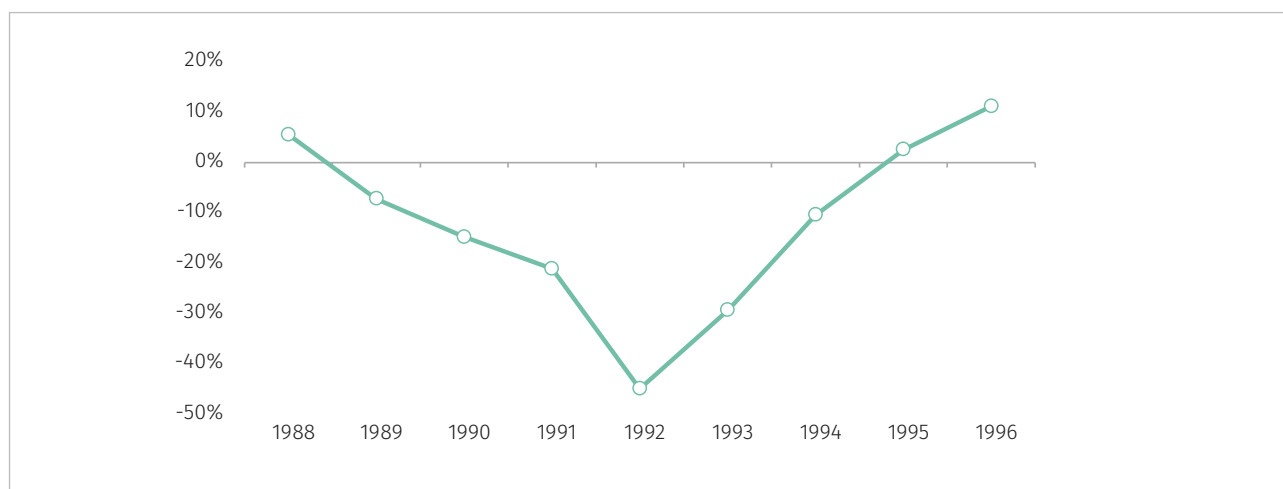
Source: World Bank.

After the Central Bank of the Russian Federation stopped supplying Georgia with currency banknotes in April 1993, the Georgian authorities were compelled to introduce a temporary monetary unit, the Coupon (kuponi). However, in order to finance the growing budget deficit, the government continued to borrow actively from the NBG, both directly and indirectly. As a result, against the backdrop of declining economic output, expanding state credit, and a sharp increase in the volume of cash in circulation, monthly inflation in 1993 averaged 49%, while the annual rate compared to the previous

year reached 8,949%. In 1994, the corresponding figures were 54% and 6,472%, respectively (GeoStat, 2025). The Coupon rapidly depreciated against all major foreign currencies, which, amid the Georgia's high dependence on consumer imports, further reinforced the hyperinflationary cycle.

As domestic production sharply declined, the population's basic needs were increasingly met through imported goods, leading to a significant external trade imbalance. Under these conditions, the depreciation of the national currency had a direct

impact on consumer prices, which intensified inflationary expectations and accelerated the hyperinflationary spiral. Georgia's strong dependence on imports substantially weakened the effectiveness of monetary policy, as fluctuations in the exchange rate were immediately reflected in domestic prices, while the NBG lacked sufficient instruments to counteract these dynamics (International Monetary Fund, 1995a; Wang, 1999).

Figure 2. Monthly Inflation
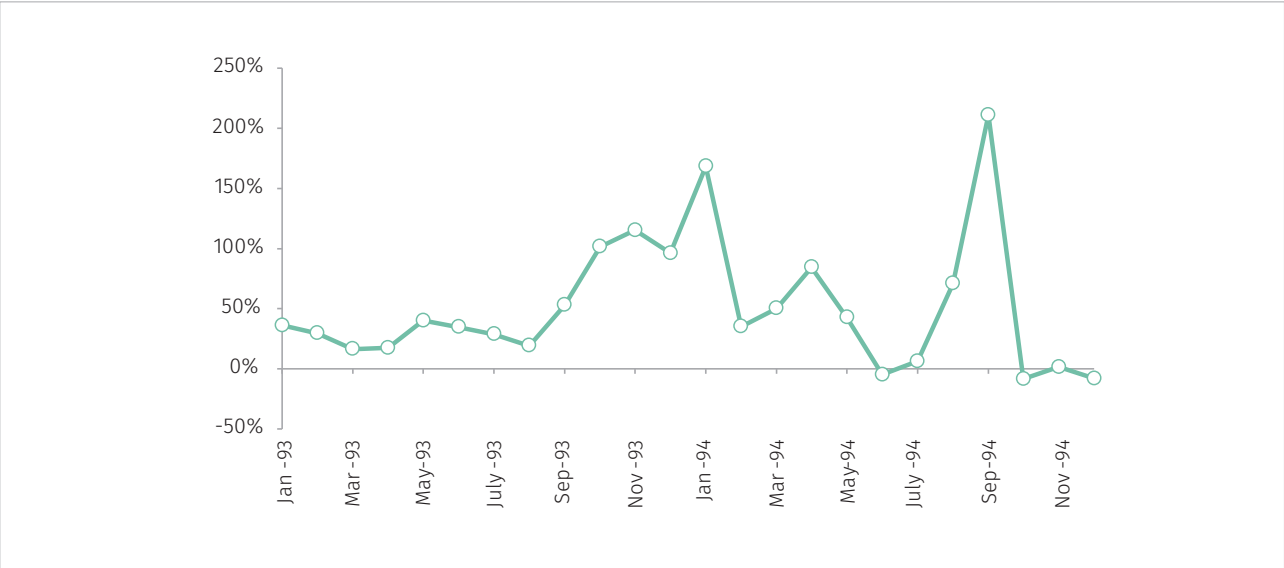
Sources: GeoStat and authors' calculations.

Accordingly, the government was faced with an urgent need to implement fundamental fiscal, monetary, and financial reforms. This paper aims to analyze the underlying causes of hyperinflation and to assess the economic, institutional, and socio-political factors that Georgia faced in the early years following the restoration of national independence. In parallel, it examines the dynamics of the stabilization process that ultimately enabled the introduction of the Lari as a full-fledged national currency. This analysis is significant not only for understanding Georgia's recent economic history but also holds relevance for other developing countries undertaking monetary stabilization programs under similar conditions.

Literature Review

Gurgenidze, Lobzhanidze and Onoprishvili (1994) provide a detailed account of Georgia's economic transformation from the Soviet system to a state of uncontrolled hyperinflation. According to their assessment, Georgia's economy in the early 1990s was institutionally unprepared for the introduction of market mechanisms, as evidenced by severe fiscal imbalances and the near absence of coherent monetary policy. The authors identify the monetization of fiscal deficits, administrative price controls on strategically important goods, and the lack of central bank independence as the principal drivers of hyperinflation. The introduction of the Coupon in 1993, a currency not backed by reserves or protective mechanisms, further accelerated depreciation and triggered uncontrolled monetary expansion. As a result, a "dual economy" emerged: the Coupon was used primarily for government transactions, while foreign currency dominated in the private sector. In the authors' view, the stabilization process hinged on making comprehensive fiscal reforms, including expenditure restraint, the elimination of subsidies, and the restoration of monetary control.

The study concludes that the success of a stabilization program would not be achieved through technical measures alone; it would require both the strengthening of institutional frameworks and the assurance of sustained international support.

Papava (1996; 2011; 2013) offers a comprehensive analysis of the first generation of economic reforms in Georgia and their historical context. He argues that Georgia's post-communist economic transformation did not begin with the collapse of the Soviet Union, but rather commenced in 1989 when the idea of national independence gained broad public support and Georgian economists began conceptualizing economic sovereignty. Papava identifies several distinct stages of reform: the "naïve conceptualization stage" (1989), the "stagnation stage" (after autumn 1990), during which enacted reforms were not effectively implemented, and the "populist reform stage" (from 1992 onward), which was characterized by government efforts to gain public support by transferring land and housing to citizens without compensation. According to the author, such policies, particularly land privatization and the destruction of the infrastructural base, inflicted substantial damage on the agricultural sector and significantly reduced the potential for efficient land use.

During this period, the formal implementation of so-called "shock therapy" also began, which in practice was characterized by an unsystematic and institutionally unprepared imitation of the Russian reform model[1]. Papava (2015) highlights the institutional and political obstacles that prevented the full realization of the shock therapy framework in Georgia. The absence of a functioning monetary system, weak fiscal institutions, and the collapse of the budget undermined the feasibility of deploying the core mechanisms associated with this model. The reforms undertaken between 1991 and 1994 were fragmented and accompanied by high social costs, contributing to the acceleration of hyperinflation and the deepening of fiscal imbalances. Papava further distinguishes between countries that inherited functioning state capacity at the outset of the reforms, such as Poland, and those like Georgia, which faced the dual challenge of building institutional state structures while simultaneously pursuing economic transformation. In Georgia's case, the lack of administrative capacity, weak legal institutions, and the absence of a national currency systematically precluded the implementation of the classical mechanisms outlined in the shock therapy blueprint.

Papava (2015) notes that the quality of reforms in Georgia only began to improve from the second half of 1994, largely due to strong support from international financial institutions, particularly the International Monetary Fund (IMF). It was during this period that the process of macroeconomic stabilization was initiated. According to his assessment, the severity of the prevailing crisis created the conditions for radical change and enabled the relatively successful implementation of shock therapy. However, this was made possible only in parallel with the strengthening of institutional foundations and the consolidation of political will.

Wang (1999) provides a detailed examination of the hyperinflationary episode and subsequent macroeconomic stabilization processes in Georgia during the early 1990s. Among the key drivers of hyperinflation, he highlights fiscal imbalances, the monetization of budget deficits, and the structural breakdown of trade and production networks following the collapse of the Soviet Union. The author emphasizes how inflationary pressures were exacerbated by weak institutional capacity, widespread subsidies, and heavy reliance on imported energy

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1. "Shock therapy" refers to the reform package developed by Polish economist Leszek Balcerowicz, aimed at the rapid and large-scale transformation of the economic system in a transitional economy. This approach encompassed price and trade liberalization, the swift elimination of budgetary subsidies, tight monetary and fiscal policies, and the mass privatization of state-owned enterprises. Its overarching objective was to shift from a centrally planned economy to market-based mechanisms within a short timeframe (Balcerowicz, 1995).

resources. The study also offers a comprehensive account of the 1994-1995 stabilization program, which included fiscal consolidation, tighter monetary policy, subsidy reduction, and price liberalization. These measures ultimately led to the successful introduction of the Lari as a full-fledged national currency in 1995 and paved the way for the restoration of macroeconomic stability.

Kakulia (2008) focuses on the role of the NBG in the country's macroeconomic stabilization, while also noting that in the early years of independence the NBG failed to ensure effective monetary management. He observes that the issuance of the Coupon as a temporary currency was rushed, taking place amid a sharp collapse in production, a large budget deficit, and widespread financial disorder. The monetization of the fiscal deficit and the NBG's accelerated credit emissions, which aimed at financing the import of critically needed material resources and consumer goods, were compounded by a severe shortage of foreign exchange reserves and led to a further deterioration of the financial situation. As a result, inflationary pressures intensified. The policies implemented during this period clearly underscored the importance of institutional resilience and monetary independence in the broader stabilization process.

The same study underscores the emergency measures undertaken by the NBG in late 1993 to curb credit emissions and contain inflationary pressures. The NBG attempted to restrict lending to the government, which led to the accumulation of substantial arrears in social payments, including wages and pensions. Under mounting pressure from both the government and parliament, the central bank was ultimately compelled to resume direct monetization of the fiscal deficit. As a result, between October 1993 and April 1994, the Coupon's exchange rate depreciated thirtyfold, while average monthly inflation during the first three quarters of 1994 exceeded 70% (Kakulia, 2008).

From the second half of 1994 onward, a stabilization program launched with support from the IMF, alongside the NBG's implementation of a tight monetary policy, laid the foundations for curbing inflation and restoring financial stability. The introduction of the Lari in 1995, replacing the Coupon, which had lost its functional relevance, further reinforced monetary stability and significantly reduced the circulation of foreign currencies – primarily the Russian ruble and the U.S. dollar. The central bank's policy played a decisive role in building confidence in the Lari and in ending the era of fiscal dominance (Kakulia and Gigineishvili, 2001).

Global experience demonstrates that crises of this nature are typically characterized by similar institutional configurations and macroeconomic conditions. Within economic theory, there is broad consensus that effective inflation management is unattainable without fiscal reform and the existence of an independent central bank. This position is supported by both classical scholarship (Sargent, 1982) and modern empirical research. For instance, Athanasopoulos, Masciandaro, and Romelli (2025) show that institutional independence of the central bank significantly reduces inflation persistence and enhances the effectiveness of monetary policy, particularly in emerging market economies. Garriga (2025) further emphasizes that, over the past decade, the strengthening of central bank independence, especially in terms of the autonomous use of monetary policy instruments and restrictions on government financing, is directly associated with reductions in both inflation and the risk of fiscal crises. Additionally, Baumann, Rossi, and Schomaker (2021) argue that central bank independence exerts a structural influence on inflation dynamics. Their analysis demonstrates that the quality of the institutional framework governing monetary policy determines not only short-term reductions in inflation but also its long-term stability. These findings reinforce the broader argument that effective inflation control requires more than the application of monetary instruments alone; it necessitates the institutional strengthening of the fiscal-monetary policy framework.

Historical episodes of hyperinflation further reinforce this perspective. The cases of Germany in the 1920s, Bolivia in the 1980s, the former Yugoslavia in the 1990s, and Zimbabwe in the 2000s all demonstrate that fiscal dominance and central banks' involvement in the monetization of budget deficits were among the primary drivers of crises. This experience underscores the critical importance of institutional independence and coordination between fiscal and monetary authorities in ensuring price stability. Accordingly, in countries where fiscal discipline was restored and the institutional capacity of monetary authorities was strengthened, hyperinflation was successfully contained and monetary sovereignty preserved. In each of these cases, stabilization was achieved through budgetary correction, tight control of government expenditures, support from international financial institutions, and, most notably, the separation of central banks from direct government financing.

A more recent example of this is Argentina, where President Javier Milei, elected in 2023, sharply criticized the central bank for accommodating the government's fiscal pressures. Although Milei proposed abolishing the central bank during his election campaign, the reforms implemented after he took office took a markedly different direction. Specifically, the Argentine government initiated a series of measures aimed at strengthening fiscal discipline – a strategy that proved far more effective in curbing inflation than dismantling or weakening the central bank's institutional role (Kleinheyer and Schnabl, 2025). Upon taking office in December 2023, Milei reduced public expenditures by approximately 30%, which included the consolidation or closure of government agencies, the elimination of subsidies, and the rationalization of administrative costs. During the same period, the Central Bank of Argentina ceased monetizing the fiscal deficit, which was a fundamental step toward stabilizing both fiscal and monetary policy. As a result, month-on-month inflation declined from 25% in December 2023 to 2.7% by December 2024. By June 2025, this figure had further dropped to 1.6%, although annual inflation

remained elevated. This reform trajectory is increasingly cited as a case study in how a combination of fiscal discipline, institutional strengthening of the central bank, and transparency in monetary policy can effectively contribute to overcoming hyperinflation (Kleinheyer and Schnabl, 2025).

The Vulnerability of Georgia's Economy in the Early Years of Independence

Following the restoration of independence, Georgia's economy proved to be particularly vulnerable to both external and internal shocks. This vulnerability was driven by its structural characteristics, institutional weaknesses, and a high degree of integration with other former Soviet republics. As noted by Wang (1999) and Gurgenidze et al. (1994), the country's industrial and energy systems were closely linked to those of the former Soviet Union, especially Russia, resulting in a high import dependence on energy. In 1990, the share of imported energy in Georgia's total energy resources exceeded 80%, and during 1991-1992, this figure increased even further amid declining domestic production.

Under such structural conditions, the volume of external trade and its ratio to GDP, of approximately 40%, clearly reflected the open and vulnerable nature of Georgia's economy. Since 1991, the disruption of inter-republic supply chains, the dismantling of payment mechanisms, and the cessation of transfers from the central government of the former Soviet Union led to a substantial decline in Georgia's external trade. Simultaneously, a sharp increase in energy import prices – with natural gas prices rising fourfold and petroleum products increasing twenty-one times (Wang, 1999) – led to a further deterioration of the terms of trade and weakened the external balance. The macroeconomic imbalance was further exacerbated by capital outflows. This constituted a classic terms-of-trade shock, in which a small, open economy that is also an energy importer experiences a direct transmission of rising energy prices and sharp currency depreciation into consumer prices. In parallel, a reduction in import volumes and energy shortages constrained both

production capacity and overall economic activity. The simultaneous operation of these two effects created a stagflationary environment.

In addition to its pronounced external vulnerability, Georgia's economy in the early post-independence period was characterized by critical domestic weaknesses. Institutional frameworks were underdeveloped and fragile, while mechanisms for economic governance, particularly in fiscal and monetary terms, were largely absent (Papava, 2013). Against this backdrop, internal political crises, the degradation of legal institutions, and armed conflicts in the Tskhinvali region and Abkhazia further deepened economic imbalances. Infrastructure was damaged, a large wave of internally displaced persons emerged, emigration intensified, and Georgia's only direct railway connection with Russia was disrupted. These developments undermined production capacity, worsened social conditions, and further constrained the country's trade potential. As a result, between 1991 and 1993, total output declined by nearly 70% (International Monetary Fund, 1995b).

Registered industrial output, which had already fallen by 56% during 1991-1992, dropped by an additional 25% in 1993. The sharp contraction in economic activity was also reflected in energy consumption data, including natural gas and electricity. Gurgenidze et al. (1994) note that the collapse of the economy was driven not only by declining production, but also by the paralysis of payment systems, which, in turn, impeded the timely fulfillment of budgetary obligations. Under conditions of cash flow shortages and institutional fragility, the economy shifted toward barter-based, inefficient exchange mechanisms. This transition disrupted the standard fiscal cycle and significantly weakened the effectiveness of tax administration.

In the early 1990s, Georgia's economy operated within an extremely unstable and institutionally fragile environment, characterized by fiscal imbalances, the collapse of payment systems, a shortage of foreign exchange reserves, and the absence of an institutional framework for monetary policy. Under these conditions, the implementation of macroeconomic policy lacked both technical capacity and legal safeguards. Although consumer price inflation was already high, hyperinflationary dynamics only emerged in 1993, following the introduction of a temporary monetary unit, the Coupon. According to Wang (1999), the Coupon was introduced in a fundamentally vulnerable macroeconomic environment: foreign exchange reserves were insufficient, convertibility was not ensured, and institutional mechanisms to support its stability were absent. In this context, the Coupon quickly became a channel for monetary expansion, through which the fiscal deficit was monetized. Consequently, uncontrolled growth in the money supply and the depreciation of the national currency sharply worsened inflationary expectations and deepened the hyperinflationary spiral.

Economic vulnerability during this period was not solely the result of external shocks, but also reflected internal institutional weaknesses, political and fiscal instability, and the absence of coherent economic policy. Under such conditions, economic stabilization required not only the correction of macroeconomic parameters, but also the implementation of systemic reforms, a process that unfolded in subsequent years (Papava, 2013; 2015).

The Institutional Profile of the National Bank of Georgia

The institutional formation of the NBG began in 1991; however, its initial legal and functional framework was characterized by significant shortcomings. The legislation adopted at the end of that year defined the NBG's core objectives as controlling inflation and promoting economic growth – two goals that were inherently contradictory in the context of Georgia's fragile macroeconomic environment. Moreover, the absence of real independence exposed the central bank to considerable political influence.

At this early stage, the NBG operated within an underdeveloped institutional framework. Specifically, there were no clearly defined mechanisms through which the central bank could safeguard its autonomy. In addition, the instruments necessary for conducting monetary policy were lacking. The bank's core functions remained vague, which complicated its ability to fulfill its mandate for ensuring both price and financial stability (Kakulia, 2008).

In addition to the challenges outlined above, Georgia's monetary system remained dependent on the ruble zone until 1993, when the Russian Federation ceased supplying currency banknotes. This development necessitated the introduction of a temporary national means of payment, the Coupon, which was intended to serve a transitional function prior to the issuance of a full-fledged national currency. However, the Coupon was introduced under extremely vulnerable macroeconomic conditions. As previously noted, the NBG's monetary and supervisory policies at the time were characterized by weak regulatory frameworks and limited control mechanisms. Under these circumstances, the pace of lending by commercial banks accelerated rapidly, often in the absence of minimum capital requirements and operational standards. This, in turn, contributed to uncontrolled growth in the money supply, a sharp depreciation of the Coupon's value, and a deterioration in inflationary expectations (International Monetary Fund, 1995b).

During this period, the NBG was unable to conduct effective foreign exchange interventions due to insufficient international reserves. The mandatory sale of a portion of export revenues to the central bank, initially set at 10% and later increased to 32%, failed to generate the necessary volume of reserves. This further constrained the scope of monetary policy and undermined public confidence in the Coupon. As a result, the Coupon failed to function as a stable means of payment and instead became one of the channels through which monetary imbalances deepened (International Monetary Fund, 1995b).

Accordingly, the central bank's intended role as a guarantor of stability was not fulfilled in practice, as it lacked the necessary instruments, legal foundations, and political will to operate effectively as an independent institution. While the financial sector expanded in quantitative terms, its qualitative development remained limited. Weak regulation and inadequate supervisory capacity created a volatile and unpredictable environment, in which the money supply grew uncontrollably and trust in the national currency deteriorated.

Against this backdrop, our assessment suggests that the NBG functioned more as a technical operator than as a macroeconomic policymaker. Its actions were often reactive to crisis conditions rather than strategically planned, which further exacerbated economic imbalances. The goals and instruments of monetary policy were misaligned and, in the absence of external support, domestic institutional resources alone proved insufficient to contain the crisis.

Fiscal Expansion During the Coupon Period

As previously noted, by 1993, following the restriction of the supply of the Russian ruble, Georgia faced a severe shortage of currency in circulation. In response, the government and the NBG decided to introduce the Coupon as a temporary monetary unit. Simultaneously, the government began implementing an expansionary fiscal policy, which ultimately led to a sharp depreciation of the Coupon and the onset of hyperinflation.

Under conditions of economic crisis, fiscal revenues experienced a sharp decline. Specifically, the share of tax revenues relative to GDP fell dramatically from 22% in 1991 to just 2% in 1993 (International Monetary Fund, 1995b). These figures reflect both a contraction in the tax base and significant disruptions in the tax collection process. On the expenditure side, the ratio of total government spending to GDP remained relatively stable during 1992-1993, which ultimately led to a substantial increase in the

consolidated budget deficit: from 3.4% of GDP in 1991 to 26.2% in 1993. The expansion of the fiscal deficit was primarily driven by the provision of universal subsidies, including those for gas, electricity, and public transportation. In 1993, approximately 20% of the deficit was financed by the NBG, while the remainder was covered through external borrowing and international grants (International Monetary Fund, 1995b).

Despite substantial assistance received from international organizations, the economic crisis re-mained acute (see Table 1). By the end of 1994, the Coupon's exchange rate had deteriorated significantly, with the value of one U.S. dollar reaching 2.5 million Coupons. At the same time, unofficial exchange rate spreads widened considerably[2]. During 1993-1994, average monthly inflation fluctuated between 50% and 70%. Coupon usage was largely restricted to regulated sectors such as bread and public utilities, while the ruble continued to dominate other transactions (International Monetary Fund, 1995b).

Table 1. Key Macroeconomic Indicators

	1991	**1992**	**1993**	**1994**	**1995**	**1996**
Real GDP (% change)	-21.1	-44.9	-29.3	-10.4	2.6	11.2
Inflation (% change)[3]	51.4	1239.4	8949.7	6472.8	57.4	13.8
Registered unemployment (Number of persons)[4]	5902	136402	225886	75714	...	...

Sources: GeoStat, IMF, World Bank.

Amid repeated fiscal shocks, the NBG's attempts to finance the fiscal deficit, primarily through seigniorage, pushed the country into a so-called "closed loop", accelerating the pace of price increases. Halting the hyperinflationary spiral required fundamental changes to both fiscal and monetary policy. Specifically, it necessitated a sharp reduction of the budget deficit and solid control over the central bank's monetary operations, both of which were essential for managing inflationary expectations and restoring economic stability.

Regarding seigniorage, which relates to the real resources a government obtains by expanding the monetary base, it is noteworthy that, according to Wang (1999), the Laffer curve[5] did not exhibit the classical inverted-U shape in Georgia's case. Instead, the relationship between seigniorage and inflation resembled an L-shape, and after November 1993, seigniorage became decoupled from inflation dynamics. This pattern is characteristic of hyperinflationary environments, where a further expansion of the monetary base no longer serves as a viable source of fiscal revenue.

2. Exchange rates formed outside the official foreign exchange market.
3. National Statistics Office of Georgia (GeoStat), end of period.
4. End of period (31 December).
5. The relationship between the monthly change in currency in circulation (in U.S. dollars) and the inflation rate recorded in the corresponding month.

Figure 3. Georgia: Coupon-USD exchange rate
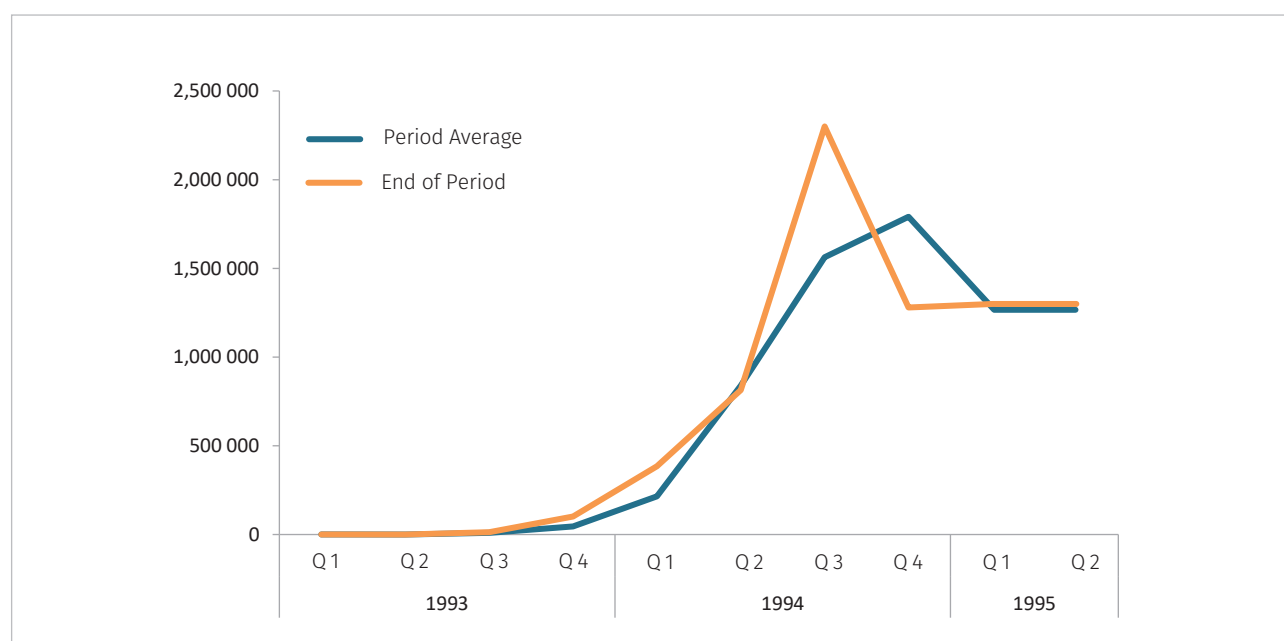
Source: IMF.

The reform process initiated with the support of international financial institutions contributed to an improvement in public and business sector expectations, which was reflected in a modest appreciation of the Coupon's exchange rate (see Figure 3). In 1995, the Parliament of Georgia approved the country's first official budget, with the fiscal deficit to be financed primarily through foreign loans and international grants.

Stabilization Policy

The legislative, fiscal, and monetary reforms implemented during the second half of 1994 and throughout 1995 proved to be a turning point, paving Georgia's path out of the economic crisis. In order to control inflation and stabilize the economy, the government, with support from the IMF, developed a set of tight fiscal and monetary measures. In the initial phase, these included a sharp reduction in the budget deficit, the elimination of state subsidies, and the reform of the tax system (International Monetary Fund, 1995a).

The strategy to combat hyperinflation focused on reinforcing fiscal discipline and optimizing the use of monetary policy instruments. It entailed, on the one hand, a substantial restriction on the NBG's financing of the budget deficit, and on the other, the termination of emission-based lending to commercial banks via automatic overdraft facilities. Both measures were successfully implemented, effectively halting the uncontrolled expansion of the money supply (World Bank, 1996).

In the context of reducing the budget deficit, particular emphasis was placed on the phased elimination of subsidies for bread, electricity, and gas, accompanied by the liberalization of prices in these sectors. Subsidies for state-owned enterprises were also discontinued. In parallel, measures were undertaken to increase budget revenues, both through raising tax rates and improving tax administration (International Monetary Fund, 1995a).

To support the deceleration of the national currency's depreciation, foreign exchange restrictions were lifted, and exchange rate flexibility was increased.

These measures were aimed at reinforcing fiscal discipline and breaking the hyperinflationary spiral – both of which were fundamentally necessary for achieving economic stabilization. As a result, the economy began to stabilize to some extent: inflation was contained within a 50% range, and the Coupon's exchange rate against the U.S. dollar appreciated to approximately 1.3 million Coupons (International Monetary Fund, 1995b).

In November 1995, an IMF mission assessed the progress of ongoing reforms and developed additional recommendations. These focused on strengthening fiscal consolidation through further reductions in government expenditures, the elimination of quasi-fiscal subsidies, and the effective mobilization of revenues. Such measures were viewed as essential prerequisites for restoring fiscal credibility and mitigating the inflationary pressures that had previously undermined monetary stability.

In addition, the IMF placed particular emphasis on strengthening monetary discipline, which entailed minimizing the NBG's credit issuance to the government and enhancing its operational independence. A logical outcome of the stabilization policy was the planned introduction of a full-fledged national currency, the Lari, by the end of 1995. Initially, it was considered appropriate to adopt a managed floating exchange rate regime, whereby the exchange rate would be shaped partly by market forces, with central bank intervention limited to instances of critical necessity. These measures were crucial to reestablishing monetary control and anchoring inflationary expectations.

Ultimately, according to the conclusions of the IMF mission, the success of Georgia's stabilization program depended not only on sound macroeconomic policies and structural reforms – including price liberalization, privatization, and regulatory simplification – but also on the strengthening of institutional frameworks and the continuation of external support, both of which were essential for ensuring the credibility and sustainability of the reforms.

In June 1995, the NBG was granted constitutional authority to conduct monetary policy independently, thereby laying the institutional foundation for the introduction of a new national currency. The Lari subsequently became the sole legal tender in the country on 2 October 1995. The exchange rate regime was officially defined as a managed float, meaning that the rate was shaped in part by market forces, with central bank intervention restricted to instances of critical necessity.

These reforms were not merely technical adjustments but formed part of a broader systemic transformation aimed at transitioning from the Soviet economic model to a market-based economy (Papava, 2013; 2015). The reforms yielded significant results. Although monthly inflation exceeded 200% in September 1994, it stabilized within a range of 3-4% by the second half of 1995. The reduction of the budget deficit and tight control over public expenditures contributed to the achievement of financial stability, while the NBG's interventions in the foreign exchange market ensured the relative stability of the Lari's exchange rate.

Although the stabilization policy laid the groundwork for overcoming the economic crisis, the process was accompanied by significant social difficulties. The reduction of state subsidies and the imposition of tight fiscal constraints placed a considerable burden on the population; nevertheless, these measures were regarded as necessary steps during the transitional period. Ultimately, the reforms implemented in 1994-1995 provided the foundation for Georgia's subsequent economic development and the maintenance of macroeconomic stability.

Conclusion

Georgia's experience during 1991-1995 clearly illustrates the critical importance of effective monetary and fiscal institutions in overcoming hyperinflation and establishing a national currency. In the immediate aftermath of gaining independence, weak state institutions, political instability, and the collapse of the financial system created an exceptionally chal-

lenging environment for the implementation of sound economic policy.

The analysis presented in this paper demonstrates that, in the initial phase of statehood, the NBG was unable to prevent fiscal dominance and was compelled to finance the budget deficit. Combined with the collapse of domestic production, a decline in external trade, and a sharp increase in energy import prices, this became one of the principal drivers of hyperinflation. In the absence of institutional independence, the temporary means of payment introduced by the government – the Coupon – failed to evolve into a viable monetary unit and further exacerbated the economic crisis.

The political will of the Georgian government to engage international financial institutions – notably the International Monetary Fund and the World Bank – played a decisive role in strengthening fiscal discipline and establishing an adequate framework for monetary policy under a more institutionally independent central bank. As a result, price stability was restored, creating the necessary foundation for the introduction of the Lari as a full-fledged national currency. This, in turn, laid the groundwork for overcoming the crisis and initiating the process of economic recovery.

This historical narrative offers valuable insights for developing economies that continue to face macroeconomic instability due to severe political, social, or other structural challenges. The case of Georgia demonstrates that achieving monetary stability and successfully introducing a sovereign currency is only possible when reform efforts are closely linked to institutional strengthening, tight fiscal frameworks, and sustained international support.

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THE ROLE OF FOREIGN EXCHANGE INTERVENTIONS IN A SMALL OPEN ECONOMY: THE CASE OF GEORGIA

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Abstract

In recent years, against the backdrop of increasing global turbulence and intensifying external shocks, volatility in foreign exchange markets has significantly increased. In response, central banks have strengthened their use of foreign exchange interventions as a policy instrument. One such institution is the National Bank of Georgia, which has conducted foreign exchange interventions in response to non-fundamental shocks to counter excessive market volatility. This study examines the episode of pressure created in the foreign exchange market during the second half of 2024, when, despite solid fundamental macroeconomic factors, economic agents' expectations were influenced by local political tensions. In the presence of a shallow foreign exchange market, it is possible that non-fundamental shocks may cause significant and prolonged deviations of the exchange rate from its equilibrium level. In dollarized economies, such exchange rate changes become supply shocks and complicate the tradeoff between inflation and output. Under these conditions, sterilized interventions in the foreign exchange market improve monetary policy choices and economic outcomes. In the case of Georgia, a counterfactual analysis prepared based on the Quantitative Integrated Policy Framework (QIPF) model demonstrates precisely this: as a result of interventions equivalent to 2.1% of GDP, excessive exchange rate volatility was reduced. Inflation decreased by an average of 0.5 percentage points (pp), while the output gap improved by a total of 1.3 pp. However, it is noteworthy that in real-time policy implementation, it is difficult to distinguish between fundamental and non-fundamental shocks. When used in response to fundamental shocks, interventions are ineffective and, despite a sharp reduction in reserves, the desired results cannot be achieved. In contrast, responses to non-fundamental shocks reduce excessive volatility and, other things being equal, improve shock absorption capabilities.

Keywords: foreign exchange market, exchange rate depreciation, interventions, fundamental and non-fundamental shocks, dollarization, counterfactual analysis.

Introduction

Over the past several decades, the number of countries that have adopted inflation targeting regimes to ensure price stability has increased significantly. These include both emerging and developing economies. Under inflation targeting regime, the primary instrument for achieving price stability is the interest rate. However, in small, highly dollarized open economies, structural frictions are common, which necessitate the use of additional instruments when conducting monetary policy. Doing so is particularly relevant during episodes of changes in global financial conditions. For example, during the 2013

"Taper Tantrum" and the 2020 COVID shock period, foreign exchange market interventions were actively implemented on a global scale (Chen et al., 2023). The use of such interventions in emerging and developing countries is driven by policy tradeoffs that reduce the effectiveness of interest rates and require the use of additional instruments to minimize welfare losses. Emerging and developed markets are characterized by shallow foreign exchange markets, increasing the probability and duration of exchange rate deviations from fundamental levels (Adrian et al., 2021). The financial dollarization present in these economies, against the backdrop of currency mismatches on balance sheets, reduces the benefits of exchange rate flexibility. Exchange rate volatility also affects the supply side and creates a dilemma between price stability and output. Furthermore, in the case of emerging markets, the pricing of trade contracts in U.S. dollars limits, in the short term, the possibility of eliminating external imbalances despite exchange rate flexibility (Gopinath et al., 2020).

Foreign exchange market interventions affect the exchange rate through four different channels (The portfolio balance channel, the signaling channel, the coordination channel, and the microstructure channel). It should be noted that market shallowness is a key friction that, under conditions of liquidity scarcity, determines the transmission of foreign exchange interventions to the exchange rate. According to Adler et al. (2015), in the case of interventions equivalent to 1% of nominal GDP, the exchange rate changes by 1.7-2%. However, while there is general consensus that interventions are effective in reducing excessive volatility, there is no solid evidence suggesting that interventions can influence the exchange rate level under a fundamental shock.

The costs associated with foreign exchange interventions should also be highlighted. Beyond fiscal costs, it is important to recognize that interventions, and the resulting reduction in exchange rate volatility, may create a perception of exchange rate risk insurance. As a result, the dollarization of liabilities increases and hinders the development of hedging markets. However, the results of empirical research regarding the latter remains inconclusive (Mehrotra and Gadanecz, 2013).

In the case of Georgia, recent periods have seen a notable increase in the National Bank of Georgia's (NBG) activity in the foreign exchange market, paralleling the intensification of external shocks. In 2020, during the COVID pandemic and the risk-appetite shock toward emerging markets, NBG interventions amounted to 5.7% of GDP. In 2022, amid strong external inflows, the NBG actively replenished its foreign reserves. In 2024, despite solid fundamental factors, domestic turbulence and a rising demand for "safe assets" emerged, which significantly increased pressure on the foreign exchange market. It is noteworthy that under conditions of structural economic frictions, excessive volatility in the foreign exchange market pushes policymakers toward using additional instruments, as shock mitigation through the use of conventional policy alone (in the form of interest rates) is associated with high economic costs.

This article summarizes the factors that should be considered when implementing foreign exchange market interventions. First, the benefits and limitations of exchange rate flexibility are discussed, including the frictions that can reduce the benefits of flexibility. Subsequently, the channels through which interventions affect the exchange rate are summarized. This is followed by a discussion of the costs associated with interventions. Finally, based on the Quantitative Integrated Policy Framework model, a counterfactual analysis of the NBG's interventions implemented in 2024 is presented. The conclusion summarizes the article's main findings regarding the benefits and risks associated with interventions.

Literature Review

Limitations of Exchange Rate Flexibility
The potential advantages of floating exchange rate regimes are widely recognized in the academic lit-

erature and are reflected in central banks' foreign exchange market policies. These advantages are particularly evident in small open economies that are characterized by high vulnerability to external shocks and capital flow volatility (Obstfeld and Rogoff, 1995). In such an environment, the exchange rate is the main mechanism for economic stabilization, ensuring monetary policy autonomy while simultaneously performing a shock-absorption function, particularly when a country experiences negative external demand shocks. The resulting external imbalance must be eliminated through real exchange rate changes (Céspedes et al., 2004). This is possible through two channels: nominal depreciation and price adjustment. The latter is achieved through a reduction in nominal wages, which implies a reduction in real economic activity and tends to be a particularly costly and prolonged process (Gadanecz and Mehrotra, 2013). In contrast, the improvement of the balance of payments resulting from nominal depreciation is ensured by the expenditure switching channel, which improves the economy's shock absorption capacity and reduces the cost of adjustment (Gali and Monacelli, 2005; Obstfeld and Rogoff, 1995).

Under structural frictions – such as financial and real dollarization, high exchange rate pass-through to inflation expectations, and shallow foreign exchange markets – the advantages of a floating exchange rate are somewhat weakened (Basu et al., 2020; Clarida et al., 1999).

One of the main vulnerabilities of Georgia's economy is its level of financial dollarization, under which exchange rate depreciation, amid currency mismatches on balance sheets, significantly increases the debt service cost expressed in the local currency (Jeanne and Korinek, 2010; Mendoza, 2010). This implies elevated costs for consumers and firms. The increase in the debt service burden raises the number of non-performing loans and heightens financial stability risks (Basu et al., 2023). In turn, to compensate for increased costs, firms raise prices and reduce investments in an effort to preserve

their margins, which generates a supply shock in the economy (Berg et al., 2023; Chen et al., 2023). Against this backdrop, the National Bank faces a dilemma and the sacrifice ratio for reducing inflation increases. Moreover, under elevated costs, the purchasing power of consumers declines and, accordingly, aggregate demand also decreases. Although this slightly alleviates inflationary pressure, it further dampens economic growth prospects and negatively influences firms' investment decisions (Clarida et al., 1999).

Furthermore, against the backdrop of insufficient credibility and the limited use of developing countries' currencies at the international level, trade contracts between countries are typically denominated in dominant currencies, usually the U.S. dollar (Gopinath et al., 2020; Goldberg and Tille, 2008). Amidst a global appreciation of the U.S. dollar, and despite the unchanged exchange rate of the local currency against other trading partners' currencies, this would increase import and export prices in the short term and reduce their real volumes (Fanelli and Straub, 2021; Gabaix and Maggiori, 2015). As a result, an aggregate demand shock emerges amid reduced external demand and, consequently, diminished inflows. As a result of higher import prices, imported inflation increases, which translates into a negative supply shock (Lindé, 2024). In other words, the depreciation of the local currency against a trading partner's currency no longer leads to an improvement in the trade balance or to the expenditure switching effect mentioned above (Cavallino, 2019). Moreover, it should be noted that under this friction, the depreciation of the local currency against those of trading partner countries traditionally reduces imports but does not support an improvement in export competitiveness, because export contracts in the destination country are denominated in U.S. dollars and the price expressed in their local currency does not decline. It is also noteworthy that the macroeconomic effects of contracting in a dominant currency are short term and, after price adjustments, which take approximately 6-12 months, exchange rate depreciation will lead to enhanced competitiveness and an improvement in the current account (Amiti et al., 2022).

As mentioned above, under friction, the reduction in external demand and the corresponding exchange rate depreciation translates into a supply shock, which significantly worsens inflation expectations and threatens the stability of long-term inflation expectations (Adrian et al., 2020; Basu and Gopinath, 2024). The impact on long-term inflation expectations is the main concern of monetary policy, because under the aforementioned frictions, including the partial indexation of wages to the U.S. dollar exchange rate, there is a risk that exchange rate depreciation will cause second-round effects and undermine the credibility of the inflation target (Arevadze et al., 2024; Lindé, 2024). Amidst high dollarization and a large share of imported and mixed products in the consumer basket, the exchange rate has relatively high pass-through to inflation, although its transmission to inflation expectations is not statistically validated. In turn, this serves as a confirmation of the commitment demonstrated by the National Bank of Georgia to ensure price stability – a fact evident in the 2025 assessment conducted under Article IV of the International Monetary Fund agreement (International Monetary Fund, 2025).

Another significant vulnerability of the Georgian economy is the shallow foreign exchange market. Despite the fact that the market has been developing rapidly in recent years, it is still small by international standards. In a deep, developed foreign exchange market, large one-time transactions cannot have a significant impact on the exchange rate. Furthermore, in such a market, an exchange rate that deviates from the equilibrium as a result of a non-fundamental, one-off shock will typically return quickly to that equilibrium. This is ensured by market participants who recognize the temporary nature of exchange rate fluctuations and who buy temporarily depreciated assets motivated by arbitrage. Under elevated demand, this causes the rate to return to its equilibrium (fundamental) level. In contrast, in shallow foreign exchange markets, where liquidity, the number of participants, and hedging instruments are limited, the market's self-correction mechanism does not function as well

(Adler et al., 2021). In such cases, a one-time large transaction may have a significant impact on the exchange rate. Moreover, one-off fluctuations, including those driven by expectations, often translate into significant volatility that can delay the return of the exchange rate to its equilibrium level (Fanelli and Straub, 2021).

Thus, in summary, in the absence of dollarization-related friction in the economy, external demand shocks are mitigated through exchange rate adjustments. In such cases, there is "divine coincidence" and, accordingly, even in the short term, achieving price stability also ensures output maximization. However, in the presence of friction, external demand shocks transform into supply shocks through increased inflation, and the central bank faces a tradeoff, as raising interest rates to ensure price stability further suppresses aggregate demand.

According to open economy models, where exchange rate market rigidities are not encountered, the nominal rate is determined by the uncovered interest parity (UIP) condition. According to this, the expected depreciation of the exchange rate is explained by the differential between domestic and foreign interest rates (Clarida et al., 1999). Under these conditions, interventions cannot have an impact on the exchange rate. Any information on the foreign exchange market will immediately prompt participants to adjust their positions, facilitating the return of the exchange rate to its equilibrium.

The situation is opposite in emerging and developing economies, where prolonged deviations of the exchange rate from its equilibrium are observed. According to Gabaix and Maggiori (2015), this phenomenon is linked to the risk aversion of market participants, which discourages them from taking excessive positions in currency assets. This makes the exchange rate highly sensitive to market liquidity. Against this backdrop, the possibility of influencing the exchange rate through interventions emerges. It is therefore important to examine the channels through which such interventions are

transmitted to the exchange rate and contribute to restoring the equilibrium.

Transmission Channels of Foreign Currency Interventions to the Exchange Rate

Under floating exchange rate regimes, medium-term exchange rate dynamics are formed based on supply and demand in the foreign exchange market, as determined by fundamental macroeconomic factors. Consequently, interventions are not the primary policy instrument under such regimes, although they can still be used to attain certain objectives. Existing research suggests that a moderate consensus has been reached regarding the possibility of influencing exchange rate changes beyond fundamental factors through the use of interventions, which implies reducing excessive volatility (BIS, 2013). However, there is insufficient evidence that interventions can change the equilibrium level of the exchange rate beyond short-term effects. To better understand the transmission of interventions to the exchange rate, it is necessary to examine the different transmission channels through which they operate.

The portfolio balance channel is based on the "asset supply/risk premium" mechanism of foreign exchange intervention transmission (Sarno and Taylor, 2001). Specifically, sterilized intervention changes the ratio of (risk-bearing) domestic and foreign assets in the market. Since investors are risk-averse and assets are not perfect substitutes, a risk premium correction is needed so that the private sector voluntarily holds the portfolio with the "new" structure. This correction is ensured by corresponding exchange rate changes in the current period. The foundations for the formal models of the portfolio balance channel were laid in the 1970s (for example, Kouri (1976)). Later, Dominguez and Frankel (1993) showed empirically that sterilized interventions can affect the exchange rate through this channel, particularly when interventions are co-ordinated and publicly known. This finding was later reinforced by the works of Sarno and Taylor (2001) and Menkhoff (2012), which ultimately helped form a consensus on the effectiveness of this channel. In

more recent studies, the concept of financial intermediaries (FX dealers/international financiers) has been introduced into models to describe foreign exchange markets that have limited risk-taking capacity. Accordingly, capital flows and foreign exchange interventions determine the exchange rate so that intermediaries are compensated for the additional risk caused by changes in the foreign exchange positions on their balance sheets (Gabaix and Maggiori, 2015; Montoro and Ortiz, 2023; Cavallino, 2019).

Central bank interventions in the foreign exchange market may also have an impact through the signaling channel. Interventions, even in a sterilized form, change market expectations ("verbal intervention") regarding the future position of monetary policy and/or tolerance toward the exchange rate level and volatility (Sarno and Taylor, 2001). Contemporary studies directly link the strength of such signals and, accordingly, intervention effectiveness to the degree of communication and credibility from the central bank (IMF, 2023; BIS, 2022). Based on daily data, Menkhoff and others (2021) show that the signaling component dominates the portfolio balance channel during an intervention. Moreover, research indicates that foreign exchange interventions are more effective when, along with strong communication, an intervention is of a large scale and consistent with fundamental factors (Fratzscher et al., 2019; BIS, 2022).

The literature often discusses the coordination channel, which is substantively close to the signaling channel. A sterilized foreign exchange intervention through this channel attempts to eliminate coordination failures among market participants oriented towards fundamental factors. Failure occurs when the exchange rate deviates far from the fundamentals, but participants avoid taking individual actions. At this time, public intervention by the central bank may become a strong signal for the foreign exchange market to return the exchange rate to its equilibrium level. This idea was clearly formulated by Sarno and Taylor (2001). Empirical studies (e.g., Vargas et al., 2019) confirm that the coordination

channel is most effective when the exchange rate deviation reaches its maximum, the market is heterogeneous (i.e., the dispersion of market participants' expectations is high), and a national bank's communication is credible and transparent.

Another channel through which sterilized foreign exchange interventions may affect short-term exchange rate volatility is the microstructure channel. According to Evans and Lyons (2002), short-term exchange rate fluctuations are mostly explained by foreign exchange market order flows rather than by fundamental long-term macroeconomic factors. Order flows are defined as the net difference between buy and sell orders placed by buyers and sellers. Central bank interventions have some impact on foreign exchange market order positions and therefore may affect short-term exchange rate volatility through the microstructure channel. As a result, even small-volume sterilized interventions can have a significant short-term impact on the rate (Menkhoff et al., 2021).

Costs and Challenges of Foreign Exchange Interventions

Alongside the positive effects discussed above, interventions are accompanied by direct fiscal costs in the form of sterilization costs related to the interest rate differential and valuation losses caused by exchange rate changes, which may not be insignificant. For instance, Adler and Mano (2016) indicate that even in countries that conduct interventions less frequently, annual costs may range between 0.2-0.7% of GDP.

More significant are the economic losses induced by interventions, which may be related to the delay in balance of payments adjustments resulting from constraints on exchange rate flexibility and liability dollarization. Moreover, market participants perceive frequent interventions as an alternative to risk-hedging mechanisms, consequently impeding the development of derivatives markets and complicating the communication of monetary policy reactions. These costs are examined in more detail below.

An analysis of the fiscal costs of interventions is important for two reasons: first, if the costs of interventions are so substantial that the central bank requires additional capital from the government, this potentially creates the risk of a loss of central bank independence; second, fiscal costs can serve as an indicator of the effectiveness of interventions. Fiscal costs comprise two components. The first relates to interest rate differentials: when purchasing foreign currency, the central bank typically acquires a lower-yielding asset while forgoing a higher-yielding domestic asset; while during sales the reverse is true. The second component relates to exchange rate valuation costs/benefits that accompany interventions. In the event of depreciation pressure, interventions are effective if, following foreign currency sales, the exchange rate begins returning toward the equilibrium through appreciation. In this case, the central bank will have valuation benefits from its reserve management, as it is selling a depreciated asset (foreign currency). Similarly, if interventions occur on the purchase side and the domestic currency depreciates, this operation will also be profitable, as it involves acquiring an asset whose value is increasing. However, losses will occur when, despite initiating foreign currency purchases, the exchange rate continues to appreciate – or conversely, in the case of sales, the exchange rate continues to depreciate. Such outcomes arise when exchange rate changes are driven by fundamental factors and central bank interventions have no long-term impact on exchange rate movements. Accordingly, fiscal costs tend to be associated with episodes in which interventions were directed against fundamental exchange rate changes (Sandri, 2022).

However, when forming an opinion on the effectiveness of interventions, this reasoning has several weaknesses. First, the correct identification of appreciation/depreciation cycles is crucial as it determines the horizon over which a central bank should assess valuation benefits/costs. Second, the reserve management strategy may have other objectives and long-term benefits that exceed the fiscal costs. Specifically, reserve accumulation typically occurs

when positive external inflow shocks are observed. In this case, despite interventions, the exchange rate appreciation is expected to continue, resulting in fiscal costs. However, reserve accumulation will have benefits in terms of creating buffers for coping with future shocks, which also positively impacts the reduction of the country's sovereign risk premium.

Under dollarization, reducing exchange rate volatility may be beneficial from a financial stability perspective. However, there is also a consensus that exchange rate flexibility specifically contributes to reducing dollarization (BIS, 2013). Avoiding sharp depreciation may reduce the exchange rate risk perception and encourage liability dollarization, consequently exacerbating structural vulnerabilities. Various studies, drawing on examples from developing countries, indicate the existence of this effect. For instance, Kim et al. (2020) demonstrate, based on firm-level data, that an excessive use of interventions is associated with increased liability dollarization by firms. Specifically, a one standard deviation increase in interventions is associated with a 2-percentage-point increase in liability dollarization. This indicator is relatively higher for firms that do not engage in exports, amounting to 5-10 percentage points.

For the same reason, a further consequence of interventions may be that they impede the development of the derivatives market. However, it should be noted that exchange rate volatility is not the only factor promoting market development. Along with market infrastructure, market size is also significant, which increases with the growth of external trade and the size of the economy. Therefore, reducing excessive exchange rate volatility may not be a decisive factor impeding derivatives market development. This point is demonstrated, for example, by Mehrotra and Gadanecz (2013), according to whom, in the case of emerging economies, no relationship is observed between exchange rate volatility and derivatives market size.

Under an inflation targeting regime, critical impor-

tance is attached to the communication of intervention policy. Lack of transparency regarding the objectives of an intervention may hinder the clarity of monetary policy goals. In some cases, if interventions are conducted for financial stability purposes when inflationary challenges do not exist, conflicts of interest may arise between policy objectives.

Therefore, amid increasing uncertainty about policy objectives, great importance is attached to implementing the transparent communication of interventions to avoid a loss of credibility. This clearly indicates that the intervention instrument – particularly in cases of exchange rate transmission to inflation and, consequently, to inflation expectations – is only an additional tool for ensuring price stability (the primary instrument remaining changes to the interest rate) (Ghosh et al., 2012). The experience of various countries indicates that rules-based interventions may resolve communication-related difficulties, as increased transparency in the foreign exchange market improves the clarity of policy objectives and reduces speculative activities (Chamon et al., 2019).

Counterfactual Analysis of Foreign Exchange Market Interventions

In recent years, amid rising global turbulence and intensifying external shocks, volatility in foreign exchange markets has increased significantly. In response, central banks have strengthened their use of interventions as a policy instrument. Among them is the National Bank of Georgia, which has conducted foreign exchange interventions to reduce excessive market volatility in response to non-fundamental shocks. In 2024, the National Bank of Georgia's net sales constituted 2.1% of GDP. Therefore, it is important to conduct a quantitative assessment of this policy through counterfactual analysis, which enables us to compare the economic outcomes of the current intervention policy (existing situation) with those of not using foreign exchange interventions.

As noted above, under shallow markets, shocks may cause the exchange rate to deviate from its funda-

mental level for relatively prolonged periods. This, amid existing imperfections in the economy, makes conventional monetary policy instruments less effective, as exchange rate depreciation becomes a supply shock. In this situation, if the use of interventions accelerates the return of the exchange rate toward its fundamental level, the monetary policy tradeoff will be improved and price stability will be achieved at lower economic costs. For a quantitative assessment of this effect, we rely on the Quantitative Integrated Policy Framework (QIPF) model developed by the International Monetary Fund, which is based precisely on the abovementioned imperfections and enables assessment of the synthesis of both conventional and other instrument usage.

Methodology – Quantitative IPF model

This section outlines the key characteristics and fundamental equations of the Quantitative Integrated Policy Framework model, which is a two-country New Keynesian open-economy model. The estimated, linearized QIPF model for Georgia closely fol-

lows the specification described in Chen et al. (2023) and builds on the theoretical underpinnings developed by Basu et al. (2020) and Adrian et al. (2021). The model is formulated as a small open-economy version of the QIPF, in which the domestic economy has no impact on the rest of the world, represented here by the United States. To capture trade in intermediate goods, the model also assumes that for the production of final goods, especially those for export, domestic firms combine domestic and imported intermediate inputs. In addition, behavioral discounting à la Gabaix (2020) and Kolasa et al. (2022) is incorporated to mitigate the forward guidance puzzle. The remainder of this section discusses the key equations of the estimated QIPF model; for a more detailed discussion of the model's features, see Adrian et al. (2021) and Chen et al. (2023).

The aggregate demand block is represented by a dynamic IS equation, derived from the Euler equation, linking consumption demand and the short-term real interest rate:

$$\hat{c}_t = \frac{\delta_c}{1 + \delta_c \widetilde{\varkappa_c}} \widehat{c_{t+1|t}} + \frac{\widetilde{\varkappa_c}}{1 + \delta_c \widetilde{\varkappa_c}} \widehat{c_{t-1}} - \frac{\sigma(1 - \widetilde{\varkappa_c})}{1 + \delta_c \widetilde{\varkappa_c}} \left(i_t + \psi_t - \pi_{c,t+1|t} \right)$$
$$+ \frac{1}{1 + \delta_c \widetilde{\varkappa_c}} \left(v_{c,t} - \delta_c v_{c,t+1|t} \right)$$
$$+ \frac{1}{1 + \delta_c \widetilde{\varkappa_c}} \left(\delta_c \hat{\mu}_{z,t+1|t} - \widetilde{\varkappa_c} \hat{\mu}_{z,t} \right) \tag{1}$$

The equation corresponds to a standard forward-looking IS curve with habit persistence, modeled through a lagged consumption. The parameter δ_c ($0 \le \delta_c \le 1$) represents behavioral discounting, which dampens the effect of future short-term interest rates on current consumption. This also implies that monetary policy decisions in the future exert a weaker effect on present consumption than in conventional DSGE models. In addition, the specification features an inflation-adjusted domestic short-term borrowing rate

$$r_b^t = i_t + \psi_t - \pi_{c,t+1|t},$$

defined as the short-term real interest rate plus an endogenous domestic borrowing spread, due to the inclusion of the banking sector, à la Gertler and Karadi (2011). The domestic spread shock can be interpreted as shifts in demand for safe assets. The equation also includes a permanent technology shock ($\hat{\mu}_{z,t}$) and an exogenous consumption demand shock ($v_{c,t}$), evolving as an AR (1) process.

Aggregate demand, through a resource constraint, is represented by the share-weighted average of private (c_t) and government (g_t) consumptions and the trade balance (the difference between exports (m_t^*) and imports (m_t)):

$$y_t = c_y c_t + g_y g_t + m_Y(m_t^* - m_t) \quad (2)$$

As noted above, exporting firms use both domestically produced and imported goods as intermediate inputs to produce final export goods. Changes in the relative prices of imported and domestic goods alter the composition of these inputs in the production of final goods.

The aggregate supply block captures price and wage setting through a New-Keynesian Phillips Curve. While the specifications for domestic, export, and import prices share the same structure, the latter two additionally account for exchange rate pass-through effects. The New-Keynesian Phillips curve takes the following form:

$$\pi_t - \iota_i \pi_{t-1} = \beta \delta_c E_t(\pi_{t+1} - \iota_i \pi_t) + \kappa_p mc_t + \varepsilon_{\pi,t} \quad (3)$$

It is based on the standard Calvo pricing assumption, where the sensitivity of inflation to marginal cost (κ_p) is inversely related to the duration of price contracts. The specification also incorporates price indexation $\iota_i \ (0 \leq \iota_i \leq 1)$, capturing persistence in inflation dynamics, as non-optimizing firms adjust their prices by indexing them to past inflation and the inflation target. This feature also allows cost-push shocks ($\varepsilon_{\pi,t}$) to generate second-round effects. The marginal cost (mc_t) is defined as the difference

between producer real wage (ζ_t) and the marginal product of labor (mpl_t). As real wages are indexed to the exchange rate, a depreciation increases the relative price of imported goods, inducing households to demand higher wages, and magnifying the exchange rate pass-through to inflation.

Assuming sticky nominal wages, as in Erceg, Henderson, and Levin (2000), wage inflation is also characterized by a New-Keynesian Phillips Curve:

$$\pi_{w,t} - \pi_{w,t-1} = \beta \delta_c E_t(\pi_{w,t+1} - \pi_{w,t}) + \kappa_w(mrs_t - \zeta_{c,t}) + \varepsilon_{\pi,t} \quad (4)$$

Where mrs_t denotes the marginal rate of substitution between consumption and hours worked and $\zeta_{c,t}$ represents the real wage.

The international financial markets block, characterized by incompleteness and segmentation, is represented by a risk-adjusted UIP equation. The model incorporates a moral hazard problem in the FX

market – "agency friction" arising from the limited risk-bearing capacity of FX intermediaries – following Gabaix and Maggiori (2015). This friction is captured by Γ, which can be interpreted as a measure of FX market shallowness (higher values of Γ indicate a shallower market). Consequently, the modified UIP conditions take the following form:

$$q_{p,t} = \delta_c E_t q_{p,t+1} + (i_t^* - E_t \pi_{t+1}^*) - \frac{1+r}{1+r^*}(i_t - E_t \pi_{t+1}) +$$
$$+ \frac{1+r}{1+r^*}\Gamma[b_{F,t} + b_F(i_t - E_t \pi_{t+1})] + \frac{1+r}{1+r^*}\tau_{F,t} \quad (5)$$

where $q_{p,t}$ is the real exchange rate, and $b_{F,t}$ denotes the volume of transactions financed by the financial intermediary in the foreign exchange market.

According to Equation 1.5, the real exchange rate depreciates in response to increases in the foreign real interest rate or the volume of funds intermediated by financiers. The presence of market shallowness (Γ) amplifies the effect of fund intermediation,

making the exchange rate dependent on market liquidity and thus provides a rationale for FX interventions.

Finally, the central bank policy block comprises rules for interest rate and foreign exchange interventions. The conventional interest rate policy follows a standard forward-looking interest rate reaction function of the Taylor-type:

$$i_t = \rho i_{t-1} + (1 - \rho)\big[(1 + \gamma_\pi)\bar{\pi}_{c,t+4|t} + \gamma_y \hat{y}_t\big] + \gamma_{\Delta y}\Delta \hat{y}_t + \gamma_s \Delta s_t + \varepsilon_t^i \tag{6}$$

The reaction function incorporates interest rate smoothing through a lagged interest rate, and implies that monetary policy responds to the expected year-on-year deviation of core CPI inflation from its target ($\bar{\pi}_{c,t+4|t}$), to the output gap ($\hat{y}_t$) and its change, as well as to the exchange rate depreciation. The reaction function also includes a lag of the interest rate to ensure greater inertia in its adjustment.

Finally, the foreign exchange intervention rule takes the following form:

$$fx_t = \rho_{fx,1}fx_{t-1} - \rho_{fx,2}b_{M,t-1} - (1 - \rho_{fx,1})\frac{\gamma_{\Delta s}}{1 - \gamma_{\Delta s}}\Delta s_t + \varepsilon_t^{fx} \tag{7}$$

The rule implies that an exchange rate depreciation triggers the sale of foreign exchange reserves to mitigate depreciation pressures.

The parameter $\frac{\gamma_{\Delta s}}{1 - \gamma_{\Delta s}}$ allows the capture of different FX regimes: lower values correspond to less frequent interventions, while higher values are associated with more active policies. Inclusion of the term $b_{M,t-1}$ accounts for the need to maintain a sufficient reserve buffer, thereby balancing the objectives of dampening depreciation pressures and preserving adequate reserve levels.

Counterfactual Analysis of NBG Interventions Implemented in 2024 Based on the Quantitative Integrated Policy Framework Model

Georgia, as a small open economy, operates under a floating exchange rate regime. As previously noted, under such a regime the exchange rate is formed on the basis of supply and demand on the market and, accordingly, is based on fundamental macroeconomic factors. Under such conditions, foreign exchange interventions are used less frequently compared to the case in other regimes. However, given existing imperfections in the economy, foreign exchange interventions are to a certain extent used as an additional instrument.

In emerging and developing economies, certain imperfections exist that make shock management and achieving the ultimate goal - price stability more costly than in developed countries. In Georgia's case, the following imperfections should be noted:

I. The still-high level of dollarization: One of the main challenges to Georgia's economy is the high level of dollarization (see Figure 1), which creates financial stability risks, increases the exchange rate pass-through to inflation, and limits the effectiveness of monetary policy.

II. The shallow foreign exchange market: The difference between bid and ask offers (spread) in the foreign exchange market indicates the shallowness of the market (see Figure 2). In certain cases, for example during large one-off capital inflows/outflows, this can cause excessive volatility in the foreign exchange market and delay the return of the exchange rate to its equilibrium level.

Under these imperfections, changes in expectations in the foreign exchange market have a significant impact on short-term exchange rate volatility, which may generate additional economic costs. Accordingly, the main objective of the National Bank of Georgia's (NBG) intervention policy, alongside the accumulation of reserves, is to neutralize excessive volatility arising from non-fundamental factors. Since the NBG's monetary policy regime is based on inflation targeting and given the existence of a floating exchange rate, the NBG has no established target level for the exchange rate.

To analyze the economic outcomes of interventions, we conducted an analysis using the above-described QIPF model to compare the state of macroeconomic indicators with and without use of interventions in 2024.

Figure 1. Deposit and Loan Dollarization Indicators
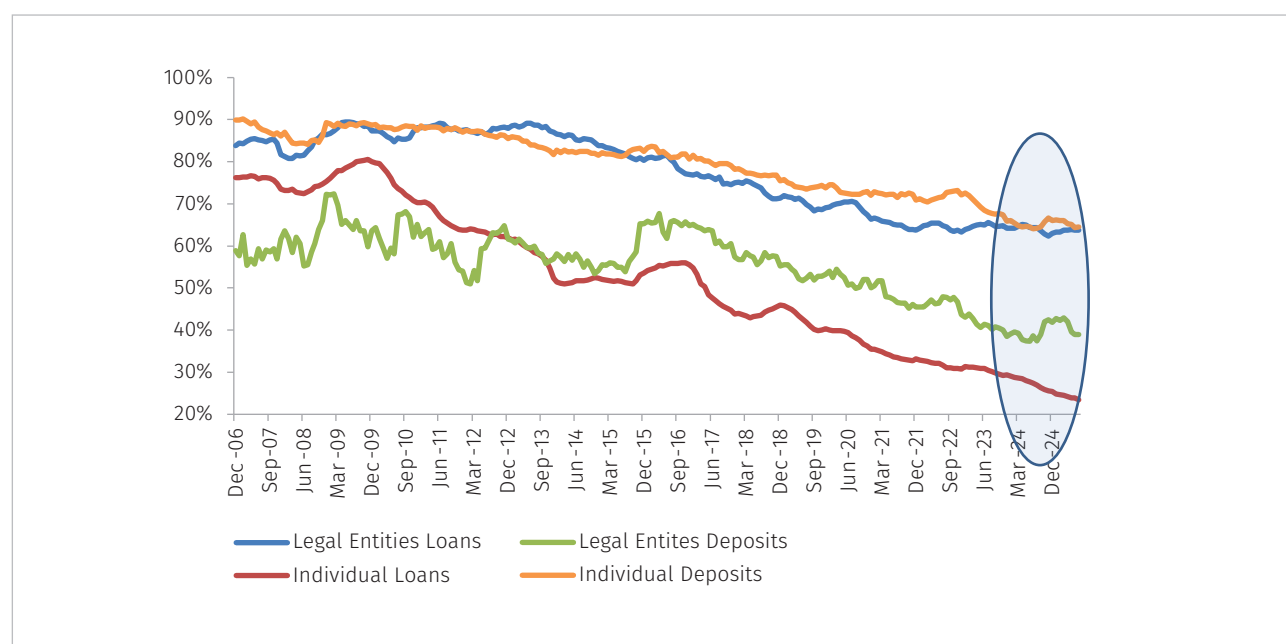
Source: NBG.

Figure 2. Spread Between Bid and Ask Offer Prices (With respect to USD)
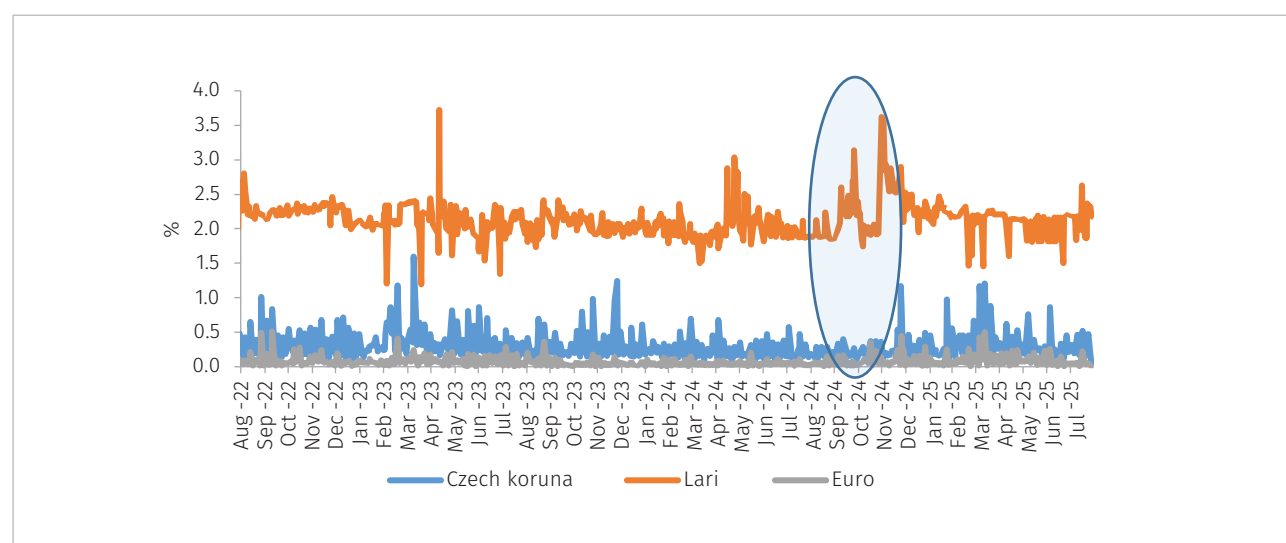
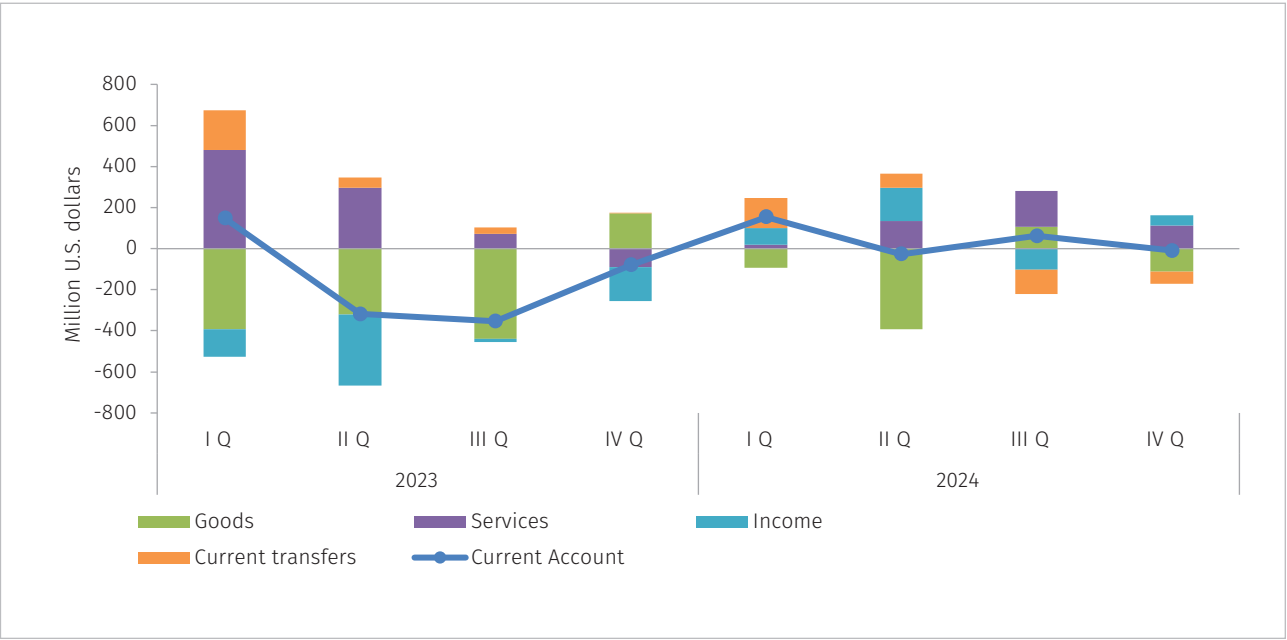*Source: Bloomberg and authors' calculations.*

During 2024, the fundamental macroeconomic factors affecting the exchange rate were strong (see Figure 3). Other things being equal, this should have resulted in a solid position for the equilibrium exchange rate. The current account balance, which summarizes the country's foreign exchange inflows and outflows, was at a historically high level, constituting 4.5% of GDP. This was also close to the equilibrium level of the current account balance. However, despite these positive trends throughout 2024, and especially at the end of the year, the pressure arising from deteriorating expectations in the foreign exchange market intensified. Amid uncertainty, preferences toward "safe assets" increased. This trend is confirmed by the sharp increase observed in deposit dollarization and the reduction of

foreign asset liquidity in the foreign exchange market. Particularly noticeable was the increase in legal entities' deposit dollarization (see Figure 1), which also reflected a trend of the advance accumulation of foreign currency (predominantly USD) for future payments (for example, for import financing), as motivated by risk hedging. This is further evidenced by the increased volume of forward transactions observed during the same period.

**Figure 3. Changes in Current Account Components, 2023-2024**

Source: NBG and authors' calculations.

Ultimately, as a result of deteriorating expectations amid increased demand for USD and supply constraints, alongside conditions exacerbating market shallowness, the risk of the exchange rate deviating from its equilibrium emerged – a development that could be associated with additional economic costs.

Taking these costs into account, the NBG conducted interventions in the foreign exchange market to reduce excessive volatility. In the second half of 2024, during the peak episode (occurring in September and October), net USD sales in the foreign exchange market constituted 2.1% of GDP.

According to a counterfactual analysis of this intervention, in the event that the intervention instrument had not been used in 2024, a temporary depreciation of the exchange rate could have resulted in a deterioration of inflationary expectations and inflation prospects. These developments would ultimately have resulted in a relatively higher monetary policy interest rate trajectory, which would have further increased social losses under the counterfactual scenario (see Figures 4-8).

Figure 4. Foreign Exchange Interventions in respect to GDP
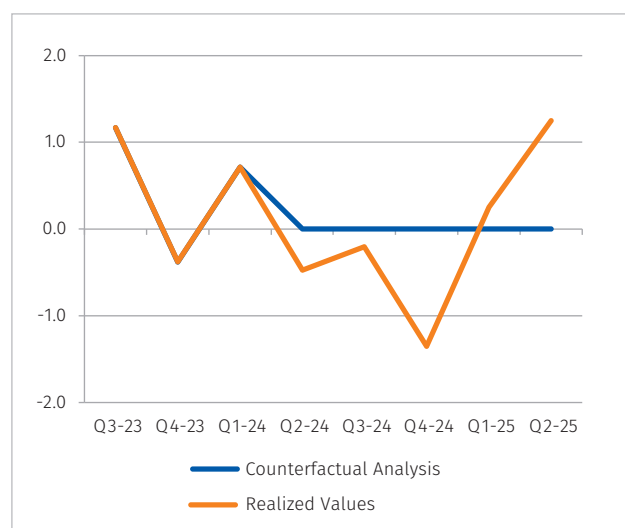
Figure 5. USD/GEL Real Exchange Rate Gaps
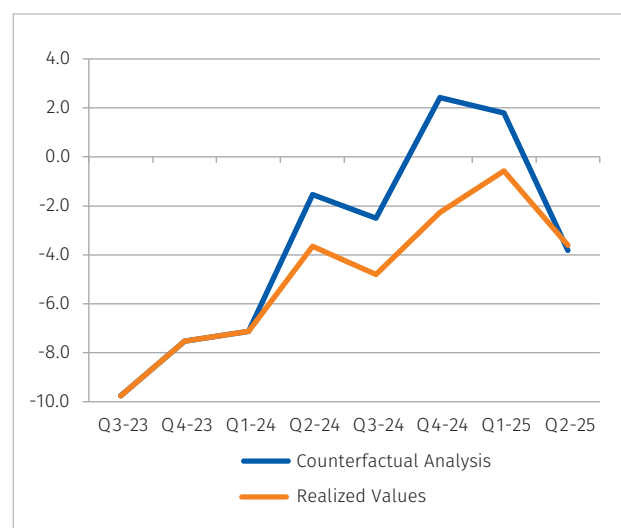
Figure 6. Core Inflation, q/q Annualized
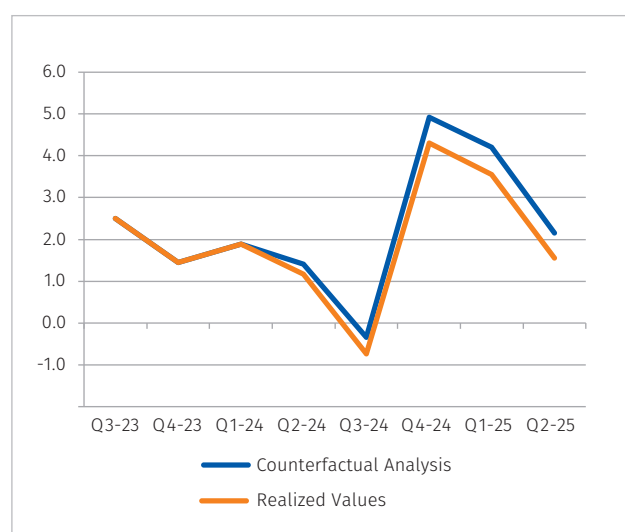
Figure 7. Monetary Policy Rate
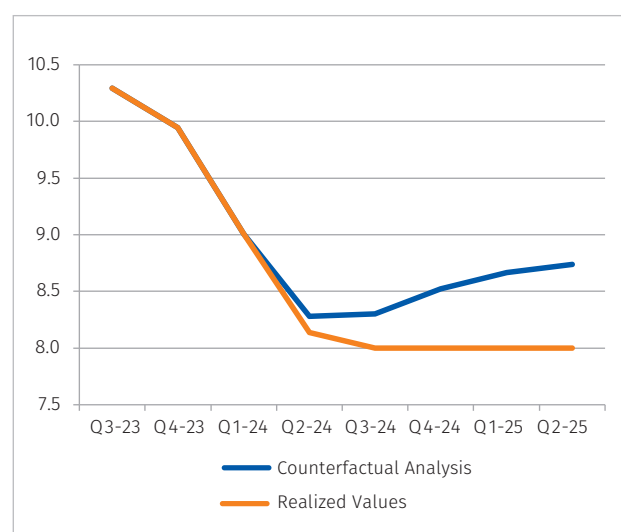
Source: NBG, GeoStat and authors' calculations.

The counterfactual analysis considers a scenario in which interventions were not used from the second quarter of 2024 to the second quarter of 2025 (see Figure 4). Under such conditions, over this horizon, the USD/GEL real exchange rate gap would have depreciated on average by 2.3 percentage points more over the short term (see Figure 5). As a result, quarterly core inflation would have been on average 0.5 percentage points higher (see Figure 6). Moreover, increased inflation would have caused a corresponding tightening of monetary policy, resulting in the policy rate being on average 0.5 percentage points higher (see Figure 7).

Under this scenario, amid increased volatility in the economy, as a result of a tightening of monetary policy and financial conditions, the total loss in the GDP gap would have been 1.3 percentage points (see Figure 8). It is noteworthy that after the exhaustion of the one-off shock to the exchange rate during the period under consideration, the exchange rate dynamics returned to the equilibrium trajectory and the NBG resumed the policy of reserve replenishment. By July 2025, the NBG had purchased $1.3 billion USD through interventions. Meanwhile, from the second quarter of 2024 through the second quarter of 2025, the NBG's purchases amounted to $231 million USD (see Figure 9).

Figure 8. Output Gap
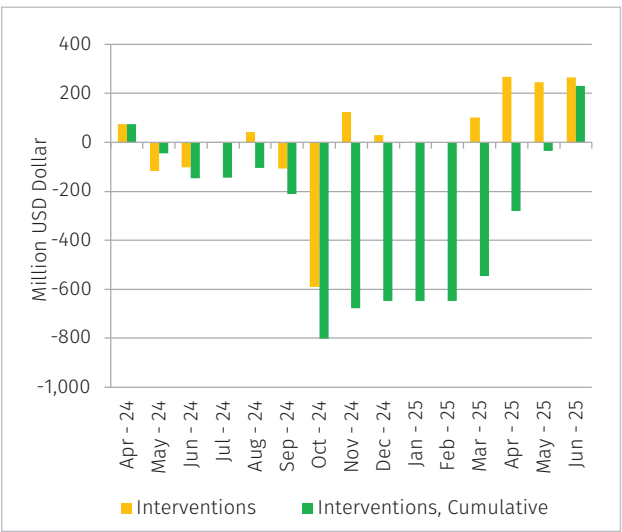

Figure 9. Foreign Exchange Interventions
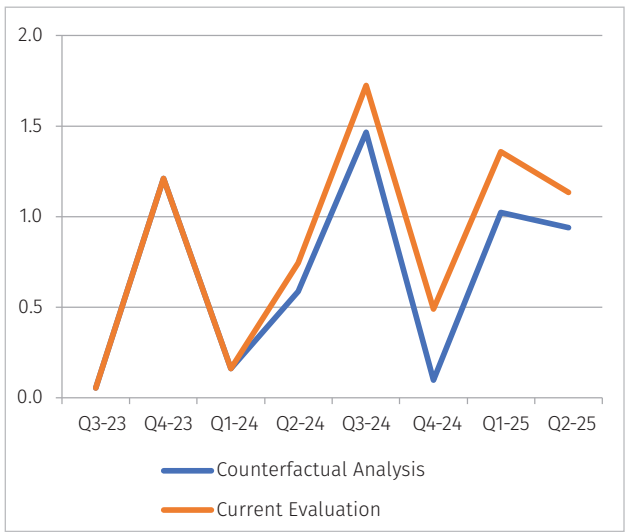
Source: NBG, GeoStat and authors' calculations.

It should be noted that the implementation of interventions is associated with a number of difficulties. The results of the presented analysis and the benefits of interventions significantly depend on market participants' expectations. Expectations in the foreign exchange market may themselves be a reflection of expected changes to fundamental macroeconomic factors. Such types of expectations are rational, since market participants anticipate long-term changes in the exchange rate caused by fundamental factors. Based on these expectations and the market's reaction, the exchange rate is immediately corrected before the macroeconomic factors themselves are realized. As noted above, exchange rate changes caused by fundamental factors cannot ultimately be stopped by any central bank, including the National Bank of Georgia. Under these conditions, the cost of implementing interventions would be greater than the benefit.

However, short-term exchange rate volatility, against the backdrop of uncertainty, can also be formed by inaccurate expectations regarding fundamental factors. As a result, foreign currency purchases/sales conducted in the foreign exchange market can cause excessive volatility in the exchange rate. The exchange rate volatility caused by such expectations is temporary, has only a short-term effect on the exchange rate, and is not reflected in its long-

term trend. To prevent such temporary volatility from growing into additional costs for the economy, it is advisable that it is reduced through interventions. The pressure on the exchange rate in 2024 was caused precisely by this latter factor, which resulted in interventions being of economic benefit.

Conclusion

In emerging and developing economies, the shallowness of the foreign exchange market creates the risk of the exchange rate deviating from fundamental factors. Given the other imperfections found in such economies (financial dollarization, dollar invoicing in trade, etc.), this reduces the benefits of exchange rate flexibility. In this context, to cope with shocks, the central banks of such economies employ additional instruments (along with the conventional interest rate changes instrument), including interventions in the foreign exchange market.

Interventions are transmitted to the exchange rate through various channels and help eliminate deviations of the rate from its fundamental level. In a dollarized economy, the negative effects of supply-side shocks resulting from depreciation can be mitigated by interventions, which are reflected in a reduction of costs in inflation and output. In 2024, against the backdrop of uncertainty, economic agents' expectations deteriorated. As a result, in response to

the pressure created in the foreign exchange market, the National Bank of Georgia conducted some significant interventions. A counterfactual analysis based on the integrated policy framework model indicates that the pressure on the exchange rate was relieved through those interventions. Both inflation and output costs, as well as a deterioration of other macroeconomic indicators, were avoided as a result.

The risks and potential costs associated with interventions are noteworthy. When implementing interventions in real time, there still exists the risk that market pressures are driven by fundamental factors, in which case the interventions may prove ineffective. This is particularly evident during reserve sales operations, since there is a risk of reducing the reserves to a level that would increase the country's sovereign risk premium and, consequently, enhance the country's vulnerability to future shocks.

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THE FORMATION OF INTEREST RATES IN TRANSITION ECONOMIES: THE CASE OF GEORGIA IN THE CONTEXT OF ITS EUROPEAN ASPIRATIONS

LEVAN SURGULADZE

Abstract

The paper examines how lending interest rates are formed in Georgia and compares them with the realities in EU member states and other transition economies. The nominal lending rate is represented as the sum of the short-term nominal risk-free rate and four components – funding spread, credit-risk premium, operating/regulatory costs, and profit margin – tailored to Georgia's institutional environment. Three core findings emerge from this study. First, lending rates depend on the choice of reference benchmark: Georgia exhibits a high spread over the monetary policy rate, while the gap narrows when measured against the short-term funding benchmark and deposit rates. Second, monetary policy pass-through to lending rates is positive but remains incomplete and asymmetric. Third, the four components of the lending rate are largely shaped by the following structural and institutional factors: the timelines and predictability of collateral enforcement, market concentration and the degree of competition, the small size of Lari money markets, and the limited availability and high cost of hedging instruments. Accordingly, the paper sets out measures required to normalize lending rates.

Keywords: interest rates, lending, credit market, credit risk, money markets, transition economies, monetary policy, funding spread, profit margin.

Introduction

The level and structure of interest rates are not determined by monetary policy and inflation expectations alone; they also reflect banks' funding conditions, credit risk, operating/regulatory costs, and the degree of competition. These elements shape the price of credit and the speed and completeness with which monetary policy signals are transmitted – first to banks and then to households and firms.

Over the past two decades, Georgia has built a modern financial system and an independent regulator – the National Bank of Georgia (NBG) – whose mandate is to safeguard price and financial stability. Although the NBG has operated effectively within this mandate, average lending rates – especially for consumer loans and for small- and medium-sized enterprises – remain high relative to those of EU member states, even after accounting for inflation and sovereign risk.

Beyond the monetary impulse, the intermediation (banking) environment materially influences loan pricing. When demand for loans persistently exceeds the supply of deposits, banks' pricing power rises. Under such conditions, the cost of funding increases and the funding spread widens. Where competition is relatively weak and price elasticities are low, profit margins tend to remain elevated – particularly in higher-risk segments.

This paper addresses three questions:
– To what extent are lending rates in Georgia driven by structural and institutional factors rather than by macroeconomic shocks alone?
– How effectively do changes in monetary policy transmit to market lending rates?
– What would reduce the structural components of lending spreads and bring them closer to EU benchmarks?

The analysis builds on research that links the dynamics of interest rates to the quality of the institutional environment, market structure, and transmission mechanisms in transition economies (Fernández and Gulan, 2012; Mirdala, 2014; Rom, 2024; van Leuvensteijn et al., 2013). The aim is to adapt, for Georgia, a framework that maps market-observable aggregates to a component-wise decomposition of final loan pricing and accounts for domestic institutional and market structure specificities.

Theoretical and Institutional Foundations

Determinants of Nominal Lending Rates
In market economies, the price of a loan reflects more than the stance of monetary policy and inflation expectations. Banks price loans starting from the short-term nominal risk-free rate, to which they add four components – funding spread, credit-risk premium, operating/regulatory costs, and profit margin. We present this decomposition below and use it to interpret Georgia's data and to compare outcomes across countries.

Monetary Policy Transmission
The monetary policy transmission mechanism – operating through the interest-rate, expectations, and exchange-rate channels – translates changes in the policy rate into the market lending rates faced by households and firms. In bank-based economies, where money and capital markets are small or inefficient, transmission is typically positive yet incomplete, delayed, and often asymmetric (tightening passes through more quickly, while easing occurs with a lag) (Sander and Kleimeier, 2004; Borio et al., 2018; Beyer et al., 2024). Transmission effectiveness depends on banks' liquidity, the competitive environment, capital buffers, and the quality of enforcement/supervision (Borio et al., 2018). Forward-guidance signals are useful when the policy instrument set is limited, but only if credibility is high (Caballero and Gadanecz, 2023).

According to National Bank of Georgia, since 2019 lending and refinancing rates in Georgia have moved relatively consistently, though not one-for-one and with time lags (see Figure 1) – consistent with incomplete pass-through (Beyer et al., 2024; NBG, 2025c). Two structural features account for this weak linkage:

1. Dollarization and currency mismatches.[1] When a sizable share of loans is priced with respect to foreign-currency benchmarks (e.g., SOFR, EURIBOR) this weakens the link to Lari-denominated instruments and thus reduces the effectiveness of monetary policy transmission[2].
2. Access to short-term Lari liquidity via NBG instruments and interbank channels is broadly accessible but not unconditional. Volumes and pricing depend on collateral, prudential constraints, and market depth, and access can tighten under stress. Both medium- and long-term money-market channels are limited, while long-term

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1. Currency mismatches refer to a situation when the currency of incoming cash flows earmarked for servicing obligations differs from the currency of those obligations. For a borrower, depreciation of the Lari increases credit risk, while for a bank it increases funding risk and the associated premium if the risk is not hedged.
2. Under an inflation-targeting regime, the NBG does not treat M0 as an independent target; Lari liquidity is managed so that short-term market rates lie near the policy rate. Therefore, changes in M0 are not an independent driver of loan pricing; the effects only arise if expectations (the inflation/exchange rate) or the policy rate change, which in turn feeds into the short-term nominal risk-free benchmark, the funding spread, or the credit-risk premium. The funding spread widens when Lari liquidity tightens and short-term Lari benchmarks (e.g., TIBR/repo) rise above the policy rate, or when Lari deposit rates increase (to retain funding/under competitive pressure). The credit-risk premium increases when inflation or Lari depreciation expectations weaken borrowers' repayment capacities, or when collateral/enforcement conditions deteriorate.

Lari-denominated instruments in the capital market are scarce; pricing therefore relies predominantly on the deposit market and, in part, on the internal bank transfer pricing of funds. Short-term benchmarks (interbank rates, repo operations, Treasury bills, and swaps) primarily affect short-term horizons and are less informative for medium- and long-term horizons. This structure is consistent with a partial, delayed, and asymmetric reflection of monetary policy changes in lending rates (Borio et al., 2018; Caballero and Gadanecz, 2023).

Structural and Institutional Constraints

Beyond macro conditions, lending rates and the effectiveness of monetary policy transmission are formed by several additional features:

– Banking market structure and competition: concentrated markets sustain higher margins in retail segments (Rom, 2024; Agapova and McNulty, 2016; van Leuvensteijn et al., 2013). Component – *profit margin.*
– Judicial enforcement and insolvency: protracted recovery processes and uncertainty about recovery values raise expected losses and, in turn, increase the price of credit (Fernández and Gulan, 2012; Mirdala, 2014). Component – *credit-risk premium.*
– Liquidity and funding: high loan-to-deposit ratios and short deposit maturities raise the cost of funding and limit the scope for rapid and sizable reductions in lending rates. Component – *funding spread.*
– Small Lari money/capital markets: low interbank/repo activity and an underdeveloped sovereign yield curve increase the liquidity premium and complicate hedging. Component – *funding spread.*
– Currency risk and dollarization: the price of currency risk is reflected either in a bank's funding spread (if the bank bears the risk) or in the borrower's credit-risk premium (if the borrower bears it). Component – *funding spread or credit-risk premium.*

– Information and conduct: the coverage and quality of credit registries, price transparency, and ease of switching lenders affect both risk assessment and the persistence of price mark-ups (margins). Components – *credit-risk premium and profit margin.*

Bonin et al. (2015) show that in Central and Eastern Europe high spreads on loans and deposits often reflect institutional inefficiencies – including limited competition, limited credit information, and uncertainty in collateral valuation – rather than the "pure" price of risk. In the framework adopted in this paper, such inefficiencies raise the profit margin, whereas higher perceived expected losses raise the credit-risk premium.

Georgia's Institutional Environment

To ensure price stability, the NBG conducts monetary policy under an inflation-targeting regime, with the monetary policy rate serving as the main instrument. In parallel, the NBG employs a number of macroprudential tools, including differentiated reserve requirements by currency; limits on loan-to-value (LTV), payment-to-income (PTI), and debt-service-to-income (DSTI) ratios; and restrictions on lending in foreign currency to unhedged borrowers. Monetary policy transmission operates in a concentrated banking system, over a weakly developed Lari funding market, and under relatively high dollarization.

These features help explain the high lending rates and the slow, incomplete, and asymmetric transmission of monetary policy. These structural challenges are not unique to Georgia. Several Central and Eastern European countries have faced similar constraints; however, gradual EU integration, harmonization, and institutional reforms have steadily helped bring their interest rate dynamics closer to those of the euro area (Mirdala, 2014; Ariefianto et al., 2024).

Macroeconomic and Structural Context

Lending rates in Georgia are formed by the joint influence of macroeconomic volatility, structural

features, and the institutional framework. The NBG sets the monetary policy rate and manages short-term liquidity, which sets the corridor within which short-term money-market rates fluctuate and ultimately feeds through to bank pricing. Alongside the short-term nominal "risk-free" benchmark, loan prices include the funding spread, credit-risk premium, operating/regulatory costs, and profit margin. This section briefly reviews the macro-financial factors – dollarization, currency mismatches, market structure, funding structure, the size of the Lari money and capital markets, and enforcement and information frictions – that explain why lending rates are high relative to the EU and advanced transition-economy benchmarks.

Inflation Targeting, Expectations, and Policy Stance

Since 2009, the NBG has operated under an inflation-targeting framework. Even so, inflation expectations remain less stable than in advanced economies, which raises the short-term nominal risk-free rate that banks use as a benchmark for pricing loans. In transition economies, higher inflation volatility translates into higher real rates because lenders demand an additional premium under such volatility (Fernández and Gulan, 2012).

The NBG tightened its monetary policy in 2022–2023 and thereafter began easing. The spread over the monetary policy rate varies over time (see Table 1) - a differential that reflects both cyclical factors (inflation and the policy stance) and structural components:funding spread, credit-risk premium, operating/regulatory costs, and profit margins.

Two features of the monetary policy transmission mechanism are particularly important. First, when inflation expectations are high or unstable, the short-term nominal risk-free benchmark rate typically rises, lifting the baseline for lending rates. Second, the repricing of deposits and the structure of funding – specifically how quickly and to what extent deposit rates follow changes in the policy rate – tend to preserve high spreads for a period during easing cycles and further widening spreads during tightening cycles.

Dollarization and Currency Risk

A significant share of deposits and loans remains foreign-currency-denominated, which affects both lending rates and the monetary policy transmission mechanism. When foreign-currency benchmark rates are used for funding and loan pricing, the effectiveness of monetary policy transmission declines. Banks manage currency risk in two ways that map directly into our decomposition: if the bank bears the currency risk, the funding spread increases, whereas if the borrower bears it, the credit-risk premium increases. Compliance costs and additional capital requirements raise the operating/regulatory cost component. The NBG has mitigated these risks through imposing restrictions on foreign currency lending to unhedged borrowers, currency-differentiated reserve requirements and setting eligibility thresholds for PTI/DSTI (NBG, 2025a; 2025b).

Banking Sector Structure and Competition

The Georgian market is concentrated, with a few large banks holding dominant shares of both assets and retail deposits. Although such concentration does not automatically imply weak competition, price mark-ups (profit margins) in retail segments – especially for unsecured consumer credit – tend to be elevated and decline with a lag relative to monetary policy easing, as is consistent with international evidence (Rom, 2024; Agapova and McNulty, 2016; van Leuvensteijn et al., 2013).

Borrower porting (switching) to another bank is constrained by material barriers due to high switching costs, including origination and collateral-valuation fees and prepayment penalties, which are especially strict when early repayment is linked to refinancing with another bank. In addition, bundled pricing is common, where the main product is packaged with others (e.g., mandatory life insurance). This complicates comparisons, raises costs, and requires time for borrowers to adequately assess competing of-

fers. Under relatively low price elasticities, these factors dampen the competitive effect. Compounding this is the limited depth of medium- and long-term capital market channels. Under such conditions, competitive pressure remains comparatively weak, particularly in unsecured consumer lending.

The average profit margins of banks in Georgia do not appear to be exceptionally high: the loan–deposit spread measured against the deposit base is ≈ 3.02%, which lies within the range observed in Eastern Europe (Poland: 3.57; Romania: 2.11; Serbia: 2.86; and the euro area: 1.40). The difference is more pronounced in retail lending, especially for unsecured loans. Elevated operating costs are largely structural and are related to operational/regulatory requirements for small retail loans, the cost of capital buffers, and high costs of collateral enforcement. Accordingly, a sizable share of the spread reflects specific factors and does not directly imply bank inefficiency. A definitive conclusion on this would require targeted empirical analysis using bank-level microdata, which is beyond the scope of this paper and remains an avenue for future research.

Funding Structure and Repricing

Georgian banks are predominantly funded by deposits. Loan pricing therefore depends not only on market benchmarks but also on how and how quickly deposit costs adjust. Deposit rates typically do not move one-for-one with changes in the policy rate (the deposit beta is less than one) and respond with lags. Moreover, the asymmetry is context-dependent: under normal conditions, during easing cycles, deposit rates tend to fall more slowly than they rise during tightening cycles. During periods of stress (of high Lari volatility/liquidity pressure), deposits may reprice rapidly and sometimes pre-emptively. When the loan-to-deposit ratio is high or term funding is less accessible, reliance on the NBG's instruments and wholesale sources increases. The funding spread widens when these sources are more expensive than retail deposits. In small, concentrated markets, monetary policy pass-through to banks is incomplete and the liquidity premium raises banks' funding spreads (Borio et al., 2018).

Saving–investment Gap and External Finance

For many years, Georgia has typically financed its current account deficit through net foreign financial inflows. Part of domestic investment is thus financed by foreign savings, with the precise share varying by year. Foreign direct investment provides more stable long-term capital, but banks' day-to-day liquidity is largely determined by short- and medium-term deposits. When the loan-to-deposit ratio is high, additional funding comes from the NBG's facilities and international credit lines, which increases the funding spread and makes loan pricing more sensitive to refinancing and currency risks (Borio et al., 2018).

Depth of the Lari Money and Capital Markets

Interbank and repo activity is limited, and the key tenors on the Lari sovereign yield curve are still being formed. The shallow Lari money markets increase liquidity premia in banks' funding and complicate term hedging, weakening policy transmission and raising the resistance of lending rates (Borio et al., 2018). Moreover, secondary market liquidity remains weak and thus prices are less reliable beyond short and intermediate tenors. Experience from emerging markets suggests that small local markets, sovereign risk, and insufficient monetary policy credibility can distort the shape of the yield curve at longer maturities (Ariefianto et al., 2024).

Legal Enforcement and Information

The timelines for collateral enforcement and legal procedures related to insolvency remain important structural constraints. Uncertainty in recovery outcomes – together with incomplete credit histories for households and firms and a high share of undeclared income – complicates borrower risk assessment, raising the price demanded for bearing risk and thus increasing the credit-risk-premium component (Fernández and Gulan, 2012; Mirdala, 2014; Agapova and McNulty, 2016). These shortcomings weaken confidence in borrower profiles and reduce the effectiveness of credit-scoring models. As Sander and Kleimeier (2004) note, the convergence of

interest rates in Europe has been highly correlated with improvements in institutional and legal quality.

Credit-risk premium (CR): a simple link to enforcement

$$CR \approx PD \times (1\text{-}R) \qquad (1)$$

where PD is the cumulative probability of default up to the next repricing date (typically one year), and R is the expected recovery rate, net of realization/enforcement costs. Thus, for a given default probability, a lower expected recovery increases the credit-risk premium (CR) (e.g., Hull (2022) and references therein). This approximation only covers expected loss, while in practice loan pricing also includes compensation for unexpected loss/economic capital and a liquidity premium.

The Role of the National Bank of Georgia

Since the introduction of inflation targeting in 2009, Georgia has established a more transparent, rules-based monetary policy. Nevertheless, the conversion of policy rate signals into market interest rates remains incomplete, owing to structural constraints and market asymmetries.

The NBG's refinancing (policy) rate is the primary instrument for managing inflation expectations and macroeconomic overheating. Over the past decade, the policy rate has been adjusted in response to both external shocks and domestic inflationary pressures.

Figure 1. Policy rate and average lending rate (2014–2025)
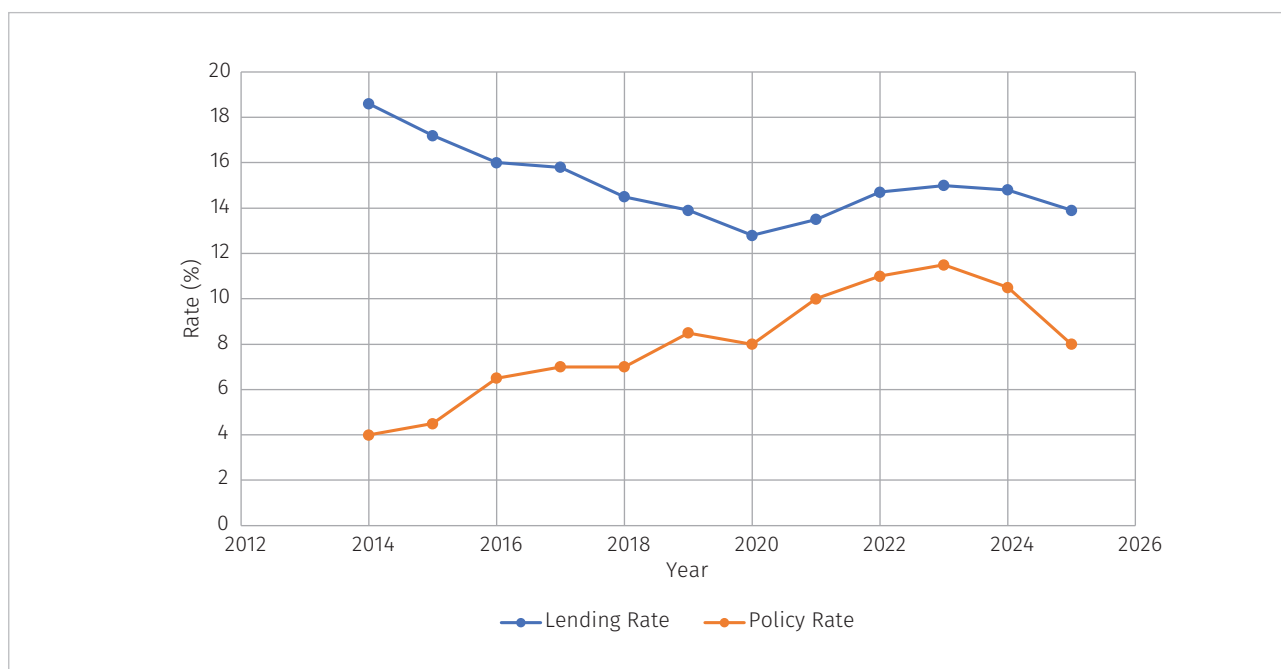
Source: NBG.

Figure 1 shows that the correlation has shifted from −0.95 over 2014–2019 to +0.82 over 2020–2025, but it remains below +1.

Although inflation stabilized significantly after 2022, lending rates have remained relatively high. This reflects, in part, monetary policy transmission lags and the deeper structural features of the credit market, as related to the degree of competition, operating costs, and regulation/capital buffers.

Decomposing the Lending Rate into Components

To clarify this phenomenon, we represent the nominal lending rate as:

$$i = (r+\pi^e) + FS + CR + OC + PM \qquad (2)$$

where $r+\pi^e$ denotes the short-term nominal risk-free benchmark in Lari, determined by short-term sovereign yields (e.g., the 1-year Treasury bill, the yield of which at the start of 2025 was 7.58% (Ministry of Finance, 2025));

i – nominal lending rate (APR);
r – real risk-free rate in Lari, defined as the short-term sovereign yield minus expected inflation;
π^e – expected inflation over the repricing horizon;
FS – funding spread relative to $(r+\pi^e)$[3];
CR – credit-risk premium (expected loss plus any premium for unexpected loss/economic capital);
OC – operating/regulatory cost (including compliance and the cost of holding regulatory capital);
PM – target profit margin.

These components are materially influenced by the demand–supply balance. When loan demand persistently exceeds the supply of deposits, banks' pricing power rises; funding becomes more expensive and the funding spread widens; while under relatively weak competition and low price elasticities, profit margins remain more persistent, especially in higher-risk segments.

This formulation allocates the effects of demand–supply imbalances to the components where they economically belong: costlier funding → FS; market structure/low price elasticity → PM; while CR and OC are treated separately according to context.

All components are influenced by macroeconomic fundamentals and institutional factors. For example, high enforcement costs and currency-differentiated reserve requirements increase OC; and expected exchange-rate volatility raises either CR (if currency risk is contractually borne by the borrower) or FS (if the bank bears the risk). The NBG's direct influence in Equation (2) is most immediate through the real risk-free rate and inflation expectations, whereas the remaining components depend on broader structural and institutional reforms.

The aggregate lending rate i and the short-term nominal risk-free benchmark ($r+\pi^e$) are observable in the markets and official data, whereas FS, CR, OC, PM are not directly observable. Accordingly, Figure 2 presents an illustrative breakdown into these components, calibrated so that their sum, per equation (2), reproduces the observed spreads in 2023 or 2025; the component values themselves are not bank-reported microdata.

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3. Liquidity is sourced primarily from the NBG's short-term lending facilities, large domestic depositors, and, at times, the medium-term credit lines extended by international financial institutions at relatively low rates.

Figure 2. Illustration: components calibrated to observed spreads
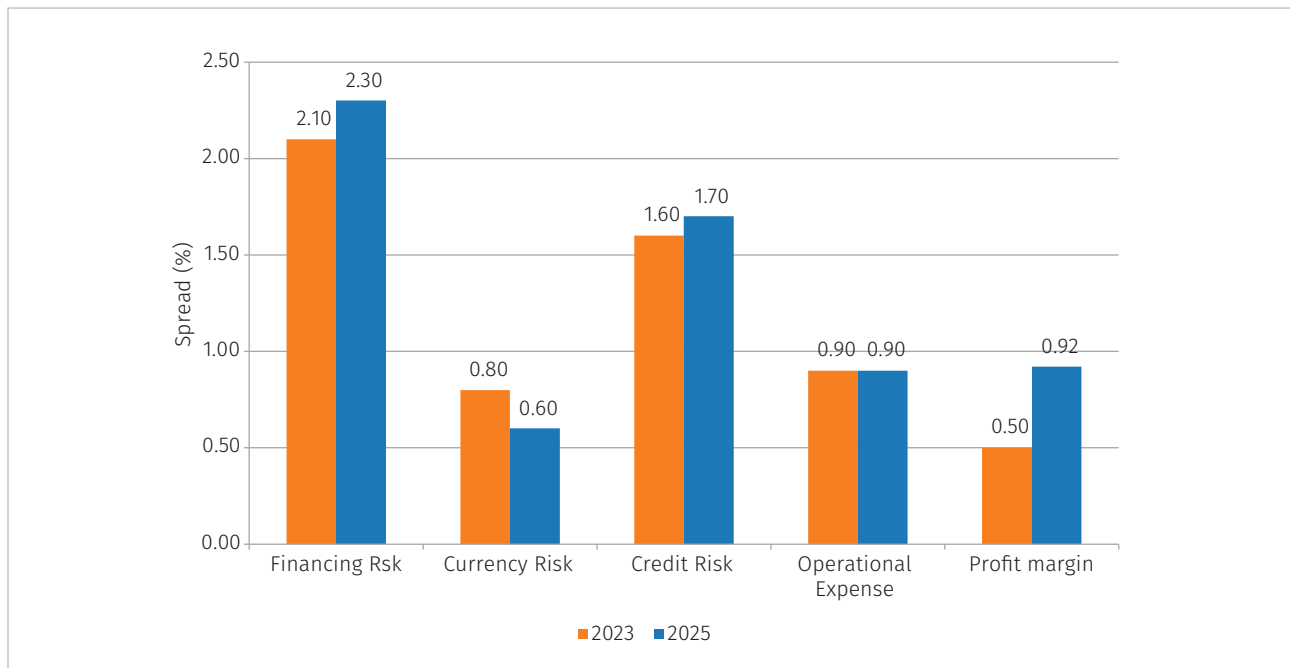
Source: Author's calculations.

The quantitative assessments in Figure 2 correspond to Equation (2). As component levels are not officially published, the figures shown are proxy measures based on public data. The short-term nominal risk-free benchmark ($r+\pi^e$) is measured by the 1-year Lari government-bond yield (NBG, 2025a). The funding spread *(FS)* is a proxy for the marginal cost of funds, computed from published deposit rates and their shares in funding (NBG, 2025b; 2025c). Where needed, the costs of NBG and other wholesale sources are added with appropriate weights, and a small technical adjustment is applied to reflect repricing lags (as per the author's estimate) (NBG, 2025b; 2025c; 2025d; 2025e). The credit-risk premium (CR) is a proxy for segment-level expected loss, based on information on defaults and losses (NBG, 2024; IFRS Foundation, 2018). Operating/regulatory costs *(OC)* are presented as an annual APR-equivalent and include the cost of holding capital buffers. The profit margin *(PM)* is the residual that ensures the four components plus the chosen benchmark sum to the observed average spreads in 2023 and 2025. It reflects the marginal pricing of new lending and is not a measure of bank profitability (ROE/ROA). Its dynamics may differ from ROE, which depends on balance-sheet outcomes

(realized provisions, non-interest income, capital accumulation, and changes in loan-portfolio composition/structure). This calibration is illustrative and is not based on bank microdata.

Summing the components in Figure 2 yields the nominal lending rate:

$$i = 7.58 + (2.30 + 0.60) + 1.70 + 0.90 + 0.92 = 14.00\%$$

If Lari-depreciation risk increases and the bank bears the currency risk, *FS* rises (including a currency risk premium), and i increases. If the borrower bears the currency risk, the increase appears in *CR* rather than *FS*, but the nominal lending rate i is unchanged.

Macroprudential Instruments and De-dollarization

Recognizing the limits to the effectiveness of monetary instruments in a dollarized economy, the NBG complements inflation targeting with the use of the macroprudential tools noted above. These instruments reduce systemic risks and strengthen policy transmission in a partially dollarized environment. Despite continued progress, dollarization remains

high in 2025 (NBG, 2025a). Noteworthy de-dollarization measures enacted include raising the cap on unhedged foreign-currency-denominated mortgages to GEL 750,000 (NBG, 2025b), alongside the application of currency-specific capital requirements (NBG, 2024). In combination, these measures support de-dollarization over the medium term, improving access to credit and financial stability.

Interest-Rate Corridor and Open-Market Operations

Within its operational framework, the NBG steers short-term Lari interest rates by supplying and absorbing short-term liquidity. These instruments keep money market rates close to the monetary policy rate.

Under the monetary policy framework, short-term rates fluctuate within a policy-rate corridor: the overnight deposit rate forms the floor, and the overnight credit rate forms the ceiling. Commercial banks make active use of the NBG's open-market operations (including refinancing, loans, and the one-month open-market instrument), which anchors the price of short-term Lari liquidity near the policy rate (NBG, 2024; Beyer et al., 2024).

Transparency and Communication

The NBG has significantly enhanced its communication initiatives in recent years: the publication of regular inflation reports, explanatory notes on monetary policy decisions, and forward-guidance signals all play an instrumental role in managing expectations. As Caballero and Gadanecz (2023) show, transparency is critical for emerging markets, where institutional credibility is sensitive to external shocks. However, for Georgia's interest rate dynamics to converge further toward European norms, stronger transmission and greater system-wide trust are also required. Communication alone cannot deliver such convergence; it must be accompanied by the measures discussed above, including stronger competition, more effective legal enforcement, and the development of local capital markets.

Lending Interest Rates by Loan Type

The aggregate lending rate, while informative, can mask material differences across loan segments. In Georgia, rates differ sharply across consumer loans, small- and medium-sized enterprise (SME) loans, and mortgage loans. Figure 3 plots the dynamics for these segments over 2017–2025.

Consumer Loans: Risk Pricing and Market Structure

Consumer-loan rates are the highest among the retail products. The average rates were above 20% until 2024, then began to decline. The high rates reflect the high probability of default and loss given default (LGD) for unsecured credit; the small loan sizes, which raise operating and regulatory costs per unit of principal; and the segmentation in the retail credit market, where a few large providers can sustain price mark-ups in specific products (Rom, 2024; van Leuvensteijn et al., 2013). A substantial share of consumer lending is in Lari, which increases the required reserves and the cost of holding capital buffers. Even under normal conditions, banks must evaluate severe but plausible stress scenarios to size their capital adequately. In such scenarios, expected recovery falls as LGD rises. The ongoing cost of holding this capital is a real financial burden and, expressed as an annual percentage of the loan rate, is likely material. We include this burden in the operating/regulatory cost (OC) component. However, as it does not change the probability of default or loss given default, it is not part of the credit-risk premium (CR).

SME Lending: the "Middle" Segment

SME-loan rates are typically lower than consumer-loan rates but are higher than mortgage rates. The structural drivers of this dynamic include shorter credit histories, collateral liquidity outside major urban centers, and lengthy and costly enforcement, all of which raise expected losses (LGD) and hence the CR. Banks' appetite for SME risk is also more limited, and these risks are often assessed conservatively. As of early 2025, Lari-denominated SME loan rates averaged around 14% (NBG, 2025c).

Mortgage Loans: Relative Efficiency and Currency Risk

Mortgage rates are lower than in other retail segments despite their longer maturities. This is primarily due to real-estate collateral, historically low default rates, lower LGD, and lower operating costs per Lari of principal. Longer maturities, conversely, raise the baseline benchmark rate and the funding-risk spread, but these effects are typically offset by lower CR and OC. A substantial share of the mortgage portfolio is foreign-currency-denominated. When the Lari depreciates, foreign currency-indexed payments in Lari increase; if property values and incomes do not rise proportionally, PTI and DSTI metrics deteriorate, thereby raising credit risk (Sander and Kleimeier, 2004). Regulators generally apply both tests and the binding constraint is whichever threshold is exceeded first. Under the NBG's regulations, access to foreign-currency-denominated mortgages is only permitted for borrowers hedged in their income, and LTV limits on foreign currency loans are tighter.

Figure 3. Average lending rates by segment (2017–2025)
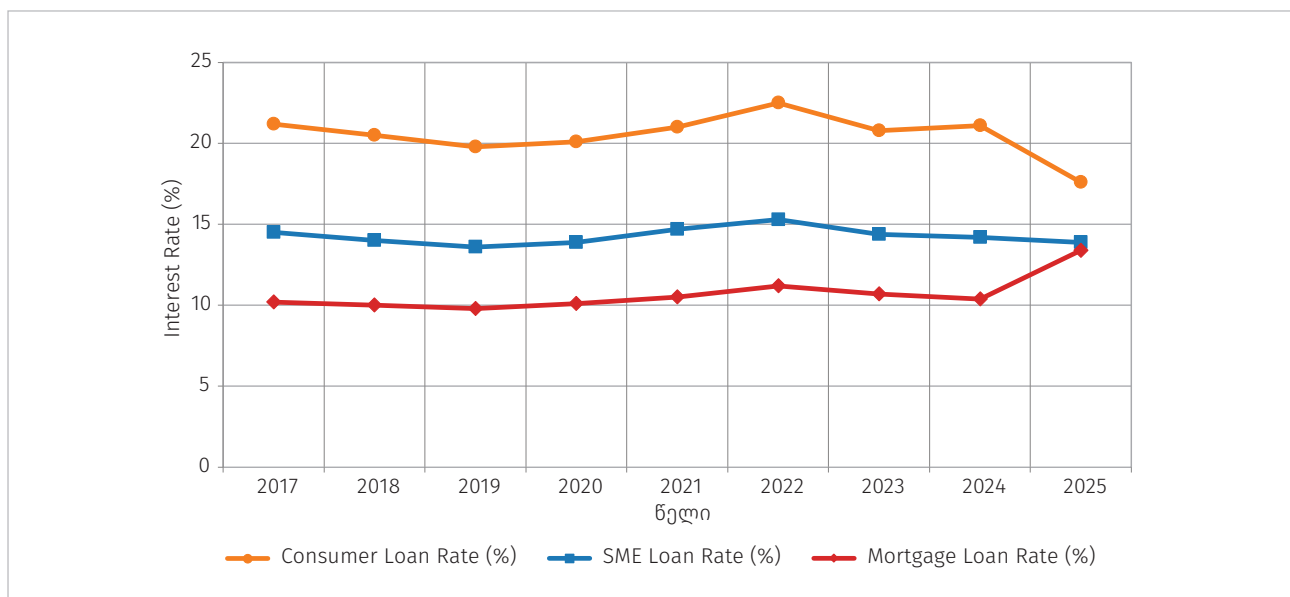
Source: NBG.
*Note: 2025 values reflect Q1; earlier years are annual averages.*

The differences across segments reflect variations in risk, collateral, operational intensity, and funding sources. These features interact with the effectiveness of monetary-policy transmission and partially help explain why the aggregate lending rate remains elevated relative to the euro area benchmarks, despite low inflation and a reduction in the policy rate.

Comparison with the European Union and Transition Economies

To assess the formation of lending rates in Georgia, we benchmark them against EU member states and comparable transition economies. Because the spread depends on the choice of the reference benchmark, Tables 1–3 report spreads relative to three different benchmarks, which helps separate structural from cyclical factors. The spread measured against the policy rate is high. Comparisons against short-term funding benchmarks reduce this mechanical difference, while the spread calculated against the deposit market sits closest to banks' structural cost of funds.

Georgia's average lending rate is materially above European levels (see Figure 4), while the spread depends on the chosen benchmark.

Figure 4. Average lending rates in selected economies (2024–2025)
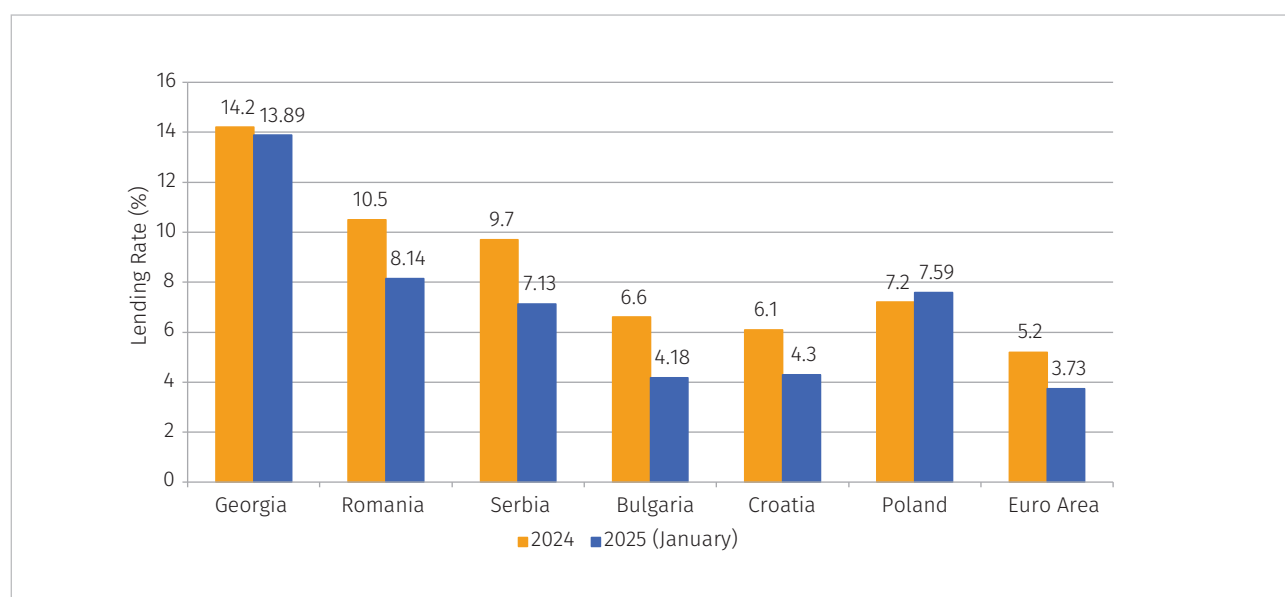
Source: ECB, NBG, national central banks, CEIC.

Measured against the policy rate (see Table 1), spreads in Georgia appear relatively high, this is owing to partial and lagged transmission, the delayed repricing of deposit rates, and the use of a non-traded, short-term policy rate as the benchmark (in which case the term and liquidity premia show up in the funding spread).

Table 1. Average lending rate vs monetary policy rate – spreads by country (2025)

Country	Average Lending Rate (%)	Monetary Policy Rate (%)	Spread (%)	Observation Month (2025)
Georgia	13.89	8.00	5.89	January
Romania	8.14	6.50	1.64	January
Serbia	7.13	5.75	1.38	January
Croatia	4.30	3.00	1.30	January
Poland	7.59	5.75	1.84	January
Euro area (aggregated)	3.73	3.00	0.73	January

Source: NBG, ECB, national central banks, author's calculations.

Note: For the euro area (including Croatia), the policy benchmark is the ECB deposit facility rate, the floor of the policy-rate corridor and the rate that most effectively anchors overnight market rates (ECB, 2024).

Measured against short-term funding benchmarks (see Table 2), the gap narrows because in Central and Eastern Europe loan pricing is referenced to money-market benchmarks.

Table 2. Average lending rate vs funding benchmark – spreads by country (2025)

Country	Average Lending Rate (%)	3-Month Money-Market Benchmark	Benchmark Rate (%)	Spread (%)	Observation Month (2025)
Georgia	13.89	TIBR 3M	8.40	5.49	January
Romania	8.14	ROBOR 3M	5.92	2.22	January
Serbia	7.13	BELIBOR 3M	4.63	2.50	January
Croatia	4.30	EURIBOR 3M	2.70	1.60	January
Poland	7.59	WIBOR 3M	5.85	1.74	January
Euro area	3.73	EURIBOR 3M	2.70	1.03	January

Source: NBG, ECB, national central banks, author's calculations.

Measured against deposit rates (see Table 3), Georgia's spread falls within the range observed in peer countries, as is consistent with a system funded primarily by deposits. The remaining difference is explained by the credit-risk premium (CR), operating/regulatory costs (OC), and profit margins (PM).

Table 3. Average lending rate vs deposit rate – spreads by country (2025)

Country	Average Lending Rate (%)	Deposit Benchmark Rate	Spread (%)	Observation Month (2025)
Georgia	13.89	10.87	3.02	January
Romania	8.14	6.03	2.11	January
Serbia	7.13	4.27	2.86	January
Croatia	4.30	1.76	2.54	January
Poland	7.59	4.02	3.57	January
Euro area	3.73	2.33	1.40	January

Source: NBG, ECB, national central banks, author's calculations.
Note: The deposit rate is defined as the average rate on deposits opened in the specified month (new business).

Transmission effectiveness: Georgia vs EU benchmarks

We measure the effectiveness of the pass-through from the policy rate to lending rates by:

$$\beta = \Delta \text{ (lending rate) } / \Delta \text{ (policy rate)}$$

for a given horizon (here, one month). Δ denotes the change in the respective variable, and β captures by how many percentage points the lending rate moves for each one-percentage-point change in the policy rate. In bank-based systems with shallow money and capital markets, pass-through is typically positive ($\beta > 0$) but incomplete ($\beta < 1$), it occurs with lags and is often asymmetric, so that tightening passes through faster than easing (Borio et al., 2018). Pass-through is high (near-full) when $\beta \approx 1$; medium/partial and delayed when $\beta \approx 0.5$–0.8, and low when $\beta < 0.5$. Recent studies place Georgia's short-term β in the intermediate range, with slower adjustments than in EU systems (Beyer et al., 2024; Holton and Rodriguez d'Acri, 2018; Horváth et al., 2018). In Georgia, where funding is primarily from deposits, the interbank market is small, and a sizable share of loans is foreign-currency-denominated, monetary policy transmission remains constrained. These features explain why transmission has improved markedly since 2020, yet the corresponding β remains below 1 (see Figure 1).

Tables 1–3 show cross-country differences in lending rates and their spreads relative to the corresponding benchmarks. In terms of dynamics, international evidence suggests that pass-through in the euro area is generally high (indicative $\beta \geq 0.8$), while in CEE economies and Georgia it is in the medium range (indicative $\beta \approx 0.5$–0.8), with lags of roughly 1–3 months and local asymmetries (Beyer et al., 2024; Gregor and Melecký, 2021; Égert et al., 2007; Égert and MacDonald, 2009; Gadelia, 2021). These differences reflect market depth and structure and help explain the observed spread levels.

Structural Constraints and Convergence

Even under low inflation and macro stability, convergence toward the euro area rates is limited by:

– Slow legal enforcement of collateral and insolvency (uncertainty in expected recoveries raises CR)
– Scarcity and the short tenor of Lari funding (liquidity premia raise FS)
– Currency risk and dollarization (bank exposure raises FS; borrower exposure raises CR)
– Market structure and weak competition (elevates PM);
– Small interbank and secondary markets (weakens the effectiveness of policy transmission).

These factors create a floor below which lending rates will not fall regardless of cuts in the policy rate. Sustainable convergence toward euro area levels requires a structural agenda that includes faster collateral enforcement, a deeper Lari yield curve, sufficiently active hedging markets, development of long-term funding instruments (e.g., covered bonds and broader securitization tools), and stronger competition – all of which need to be underpinned by a stable macro framework and clear communication (NBG, 2025b; IMF, 2024).

Policy and Structural Recommendations

The high lending rates and incomplete monetary-policy pass-through in Georgia reflect not only macro risk premia, but also persistent structural and institutional constraints.

Table 4 summarizes the main drivers and the pricing channels through which they operate. The corresponding policy and system-wide measures span four areas: competition and switching, the size of the Lari market and term funding, enforcement, and information.

Table 4. Drivers of lending-rate formation in Georgia and their effects

Driver	Effect on loan pricing in Georgia	Channel in our decomposition
Banking market structure and competition	Few active competitors sustain higher price mark-ups and slow price declines for consumers.	Raises profit margin (PM)
Depth of the Lari money/ capital markets	Shallow interbank/repo activity, a weak sovereign yield curve, and underdeveloped capital markets raise funding costs and liquidity premia.	Raises funding spread (FS)
Liquidity and funding sources (loan–deposit ratio, short maturities)	High loan–deposit ratios and short-term funding limit the scale and speed of lending-rate declines.	Raises funding spread (FS)
Legal enforcement and insolvency	Slow and costly recovery increases expected losses.	Raises credit-risk premium (CR)
Currency risk and dollarization	The price of the Lari depreciation risk appears either in a bank's funding spread (if the bank bears the risk) or in borrower's credit risk premia (if the borrower bears it).	Raises funding spread (FS) or credit risk premium (CR)
Consumer protection and pricing practices	Transparency and easy switching reduce price mark-ups over time.	Lowers profit margin (PM)

Strengthening Competition and Lowering Bank Switching Costs

Empirically, price mark-ups in unsecured consumer credit remain high, even after accounting for CR and FS. During easing cycles spreads stay elevated because deposit rates reprice slowly (Rom, 2024; Agapova and McNulty, 2016; van Leuvensteijn et al., 2013). The market is concentrated. While concentration does not automatically imply weak competition, retail margins have remained persistently high. Microbanks emerging from the microfinance sector can broaden choice on the market, assuming they operate under risk-based, proportional regulation and supervision.

The following structural changes would foster a more competitive environment:

– Easier borrower switching across banks. Introduce low caps on prepayment/refinancing penalties, lower caps on origination fees, and sim-
plify/standardize collateral porting procedures. Expected effect: lower switching costs, greater price pressure, and incentives to reduce margins in competitive segments.
– Transparency of variable-rate pricing. Define the variable-rate framework unambiguously in the contract – as the public benchmark rate + fixed margin, with at least 30 days' notice before each repricing. Expected effect: reduced information asymmetry, fewer surprise repricings, and greater price comparability.
– Responsible non-bank lending. Proportional, risk-based licensing for non-bank lenders (fintech platforms, factoring and invoice-finance entities), mandatory reporting to the credit registry, PTI/DSTI checks, and full disclosure of total loan cost/fees. Expected effect: close the regulatory perimeter and ensure fair competition between banks and non-bank market participants.
– Fair-pricing safeguards. Prohibit bundling that forces the purchase of ancillary products (e.g.,

mandatory life insurance), monitor and, where needed, limit "loyalty penalties" (that offer worse terms for incumbents than for new clients), and require full disclosure of all rate components. Expected effect: better price comparability and limits set on opaque margin increases.

Improving Monetary Policy Transmission Effectiveness and Expanding Local Capital Markets

Transmission effectiveness improves when banks can obtain term funding and hedging in Lari, price loans off robust domestic benchmarks, and rely less (or not at all) on foreign currency benchmarks and swaps (IMF, 2024; Borio et al., 2018; Beyer et al., 2024). In Georgia, limited interbank/repo activity and an immature Lari yield curve raise liquidity premia and weaken pass-through effectiveness. Covered bond issuance and the introduction of securitization instruments would support term funding in Lari and lower the cost of funds. Clear, forward-looking communication increases the effectiveness of these instruments (Caballero and Gadanecz, 2023; NBG, 2025c). In this context, we view the following as appropriate:

– Strengthen interbank and repo activity. Establish a regular repo-auction calendar; define a standard collateral list and clear haircut rules; and introduce simple procedures for securities lending (temporary transfer/return of securities).
– Consolidate the Lari sovereign yield curve. Conduct regular benchmark-tenor issuances.
– Anchor benchmark-based pricing. Encourage linking loan pricing to a published benchmark rate (e.g., TIBR) with a fixed margin.
– Term funding/risk transfer. Promote issuance of covered bonds and securitization instruments.
– Ensure transparent communication. Provide clear, forward-looking guidance.

These measures are established as monetary policy pass-through enhancers in bank-based systems (IMF, 2024; Borio et al., 2018; NBG, 2025b).

Reducing Structural Risk Premia

Spreads widen when enforcement is slow and information is weak. Faster, predictable enforcement and richer borrower data reduce both expected and unexpected loss, lower CR, and compress required margins (Agapova and McNulty, 2016; Beyer et al., 2024). Timely structural changes include the following:

– Accelerate collateral enforcement. Introduce legally time-bound procedures; establish digital asset registries (real and movable property); adopt uniform valuation standards; and create mechanisms to expedite arbitration.
– Expand credit information. Build credit-information databases for SMEs; apply PTI/DSTI checks to SMEs; enable safe, permissioned access to firms' cash-flow data (bank statements, e-invoices, and sales) to support risk-based pricing.
– Targeted risk transfer: Expand partial credit-guarantee schemes (e.g., first-loss, mezzanine, or pari passu guarantees).

Conclusions

The formation of lending interest rates in Georgia reflects a long-running interaction of macroeconomic conditions, the institutional framework, market structure, and external factors. Although monetary policy is prudent and credible, nominal lending rates remain higher than in euro area countries; the pass-through of the policy rate to market rates is positive but incomplete and delayed.

This paper shows that cyclical factors (inflation expectations and tightening/easing cycles) matter, but it is structural and institutional features that are decisive – namely, the timelines and predictability of collateral enforcement, banking-sector concentration, the limited depth of the Lari money and capital markets, and incomplete harmonization with European financial infrastructure.

Comparison with similar economies supports three main conclusions:

1. Interpretation depends on the chosen benchmark rate (e.g., the policy rate, 3-month TIBR, or the average deposit rate (see Tables 1–3)).
2. The pass-through of changes in monetary policy to lending rates is partial, lagged, and often asymmetric.
3. The spread between the lending rate and the selected benchmark can be decomposed into four economic components: funding spread (FS), credit-risk premium (CR), operating/regulatory costs (OC), and profit margin (PM). The sum of these four components, plus the chosen benchmark, yields the observed lending rate.

If high loan demand and funding constraints persist, other things being equal, a substantial reduction in margins is unlikely unless intermediate factors change (depth of the deposit market, competition/switching costs, risk assessment, and the regulatory environment). The aim of this paper is not to forecast margins quantitatively. Rather, it is to study the mechanism qualitatively and identify its quantitative "fingerprint", first and foremost in the funding spread and profit margins, and – where information suffices – in the credit-risk premium and operating/regulatory costs.

Convergence toward European pricing benchmarks hinges on the removal of structural constraints. Priorities in this direction include strengthening competition and simplifying borrower switching across lenders; deepening the Lari market infrastructure and local capital markets to obtain term funding and enable tenor-matched hedging; accelerating collateral enforcement and expanding credit information; and aligning prudential and consumer-protection frameworks more closely with EU practice.

Convergence to a European-style interest-rate dynamic is neither automatic nor solely a matter of monetary policy. It requires a coordinated, multi-year effort by the National Bank of Georgia, the Ministry of Finance, the legal system, and market participants. With consistent, joint action, Georgia can reduce the cost of capital, broaden access to finance, and integrate more closely into the European financial architecture.

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GEOPOLITICAL FRAGMENTATION AND THE COMPOSITION OF INTERNATIONAL RESERVES

GIORGI CHINCHALADZE AND ALEXANDER KHAZARADZE

Abstract

This paper examines recent trends in foreign exchange (FX) reserves management, as influenced by rising geopolitical risks and related events. Ongoing trade wars, military conflicts, large-scale international sanctions – including the precedent of limiting access to reserve assets – as well as the emergence of new technologies and payment channels, all create the need to carefully review the traditional principles of FX reserve management that had heretofore remained unchanged for decades. These developments encourage central banks to consider a partial allocation of official reserve assets to currencies and instruments that are less exposed to geopolitical risks and serve as diversifiers.

Keywords: reserve management, geopolitical risk, central banks, strategic asset allocation, diversification.

Introduction

The primary objective of having international reserves is to ensure that the central bank has sufficient foreign currency to service its external obligations and settle international payments. At the same time, foreign exchange (FX) reserves are used for foreign exchange interventions, which serve as a tool supporting monetary policy and help mitigate excessive volatility in the domestic FX market. Central banks achieve price stability mainly through the management of the policy interest rate, while FX reserves play a complementary role by providing liquidity in this process. In addition, international reserves can be viewed as a "safety buffer" that strengthens the economy's resilience to external shocks. Because of these functions, the financial resources held in international reserves are mainly invested in liquid and safe assets with low credit and market risks.

Central banks typically use Strategic Asset Allocation (SAA) processes to define the composition of reserves by the choice of currency and asset class, their investment structure as prioritized by objectives, and the size of tranches. Such processes rely on both quantitative and qualitative analysis. As of 2024, approximately 66% of official reserve managers actively apply an SAA framework (Carstens, 2024). Given the mandate of central banks, the key priorities in this process are safety, liquidity, and return. In practice, this means investing international reserves in safe assets such as government securities (for example, U.S. Treasury bonds and German federal government bonds), monetary gold, and financial instruments issued by sovereign-related institutions (for example, Special Drawing Rights). These instruments are predominantly denominated in four traditional currencies: the U.S. dollar, the euro, the British pound sterling, and the Japanese yen, which together account for 88.12% of global foreign exchange reserves (IMF, 2025a). The same currencies also underpin the largest and most liq-

uid capital markets, which are regulated by well-established financial legislation.

Ongoing geopolitical developments and challenges in the global economy are influencing the principles of international reserves management, resulting in adjustments to asset classes, currency composition, and the overall structure of reserves. The reliability of financial assets and currencies that have long been considered safe, liquid, and profitable are coming under review. While the global investment environment has remained largely the same, the behavior and responses of central banks have changed, shaping the current trends in FX reserve management.

The International Monetary Fund (IMF) published its updated COFER (Currency Composition of Foreign Exchange Reserves) data in the first quarter of 2025 (IMF, 2025a). Based on these figures, it can be observed that the dominant position of the U.S. dollar is gradually weakening. However, this has not been accompanied by a noticeable increase in the shares of any of the other "big four" major currencies – the euro, the yen, and the pound sterling. Instead, there has been a visible increase in the share of so-called non-traditional reserve currencies, which include the currencies of regionally important and relatively geopolitically neutral countries, such as the Australian dollar, Canadian dollar, Swiss franc, Korean won, and Singapore dollar.

Until 2008, central banks had been gradually reducing the share of gold in their reserves; however, this trend reversed after the Global Financial Crisis, and gold once again emerged as a preferred reserve asset. In recent years, especially since 2022, a strong trend has emerged toward an increasing share of gold in central bank reserves. This has been particularly notable among the central banks of emerging economies, with the purchases of gold by Poland and Hungary during the COVID-19 pandemic worth mentioning. Another important development is that between 2013 and 2019, Germany, the Netherlands, Austria, Hungary, and Poland each began to

repatriate part of their gold holdings back to their own jurisdictions. More recently, in 2025, Serbia returned its entire gold reserve to the country.

The growing demand from central banks for gold purchases and the repatriation of gold reserves is largely explained by the intention to reduce dependence on traditional reserve currencies and by a preference for holding an asset in reserve that carries neither liquidity nor credit risk. Another factor influencing this dynamic is the expectation of higher gold prices, as supported by a steady growth in global demand for gold. This trend is further reinforced by various precedents that have seen central banks face prolonged, and sometimes indefinite, restrictions on access to their international reserves – typically driven by geopolitical tensions.

Meanwhile, the changes in the composition of currencies and asset classes within international reserves point to an evolution in Strategic Asset Allocation approaches. In managing their reserves, central banks have increasingly begun to take into account geopolitical risks and the effects of geo-economic fragmentation. Furthermore, financial sanctions that may affect reserve assets have called into question the notion of the so-called sovereign immunity of reserves, encouraging central banks to review their traditional perceptions of safety.

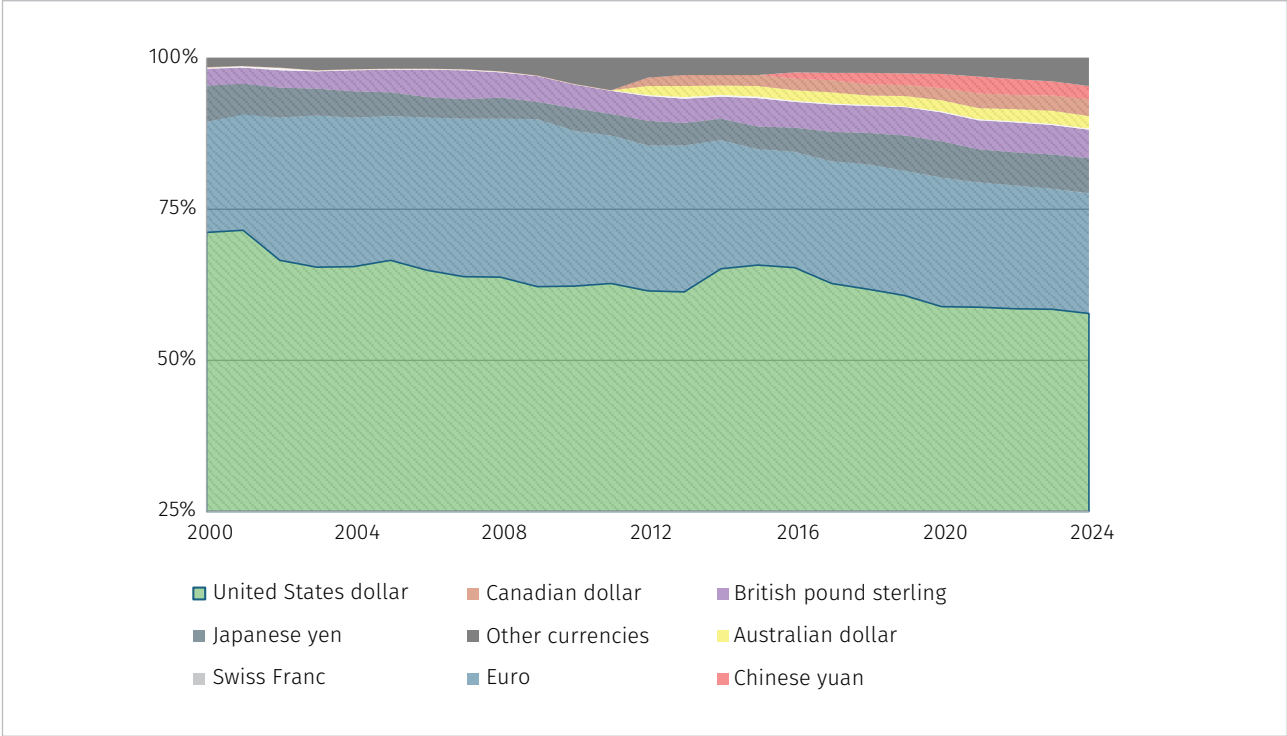**The Role of the U.S. Dollar**

Most industrialized and emerging economies with close trade and political ties to the United States prioritize holding U.S. dollar tranches in their Strategic Asset Allocation processes (Weiss, 2022). The attractiveness of the U.S. dollar as a reserve currency is further supported by the extensive size of the bond market denominated in dollars, which serves to enhance the liquidity of assets held in this currency.

As of 2025, the total volume of official reserves held by central banks amounted to around USD 13 trillion. However, the currency composition of reserves has changed noticeably since 2000, with the share of the U.S. dollar declining from 70% to 58% accord-

ing to the most recent data (IMF, 2025a). Nevertheless, the dollar still maintains a dominant position, with a weight exceeding the combined share of all other currencies. It is also worth noting that the decline of the U.S. dollar's share in central bank FX reserves has not been accompanied by a higher allocation to the other traditional reserve currencies (the euro, the British pound sterling, and the Japanese yen). Instead, the U.S. dollar has been partially replaced by non-traditional reserve currencies, such as the Chinese yuan, the Canadian dollar, the Australian dollar, the Swiss franc, and the Korean won (see Figure 1).

Figure 1. Currency Composition of Official Foreign Exchange Reserves

Source: IMF.

One of the factors contributing to the decline in the U.S. dollar's share within international reserves may be the geopolitical divergence of some countries from the United States. In this context, the BRICS bloc, which brings together Brazil, Russia, India, China, and South Africa, is particularly noteworthy. One of the main objectives of the bloc is to reduce reliance on the U.S. dollar in international settlements, which is reflected in bilateral agreements within the group that provide for the use of national currencies and mutual clearing mechanisms in transactions between partner countries.

The process of de-dollarization in international trade settlements is also supported by the fact that

the United States is no longer the leading country in goods exports (excluding services). In 2000, the U.S. accounted for the largest share of global exports at 12.3%, while China's share was only 4%. By 2024, China's share had risen to 14%, while that of the United States had declined to 10.2%. Moreover, it should be noted that, compared with 2000, the share of emerging economies in global exports has doubled, reaching 46% (UNCTAD, 2024). As their exports have expanded, their currencies have naturally become more widely demanded.

The deepening of trade relations between countries is accelerating the development of trade infrastructure and alternative payment systems, which helps

to reduce bid-ask spreads, including in non-traditional reserve currencies. A relatively smaller spread between traditional and non-traditional currencies increases the attractiveness of making direct payments in the latter. This is a trend further supported by the introduction of new payment systems, such as China's CIPS, which was launched in 2015 to facilitate transactions in the renminbi.

Arslanalp, Eichengreen and Simpson-Bell (2022) have examined the reasons behind the weakening role of the U.S. dollar in global finance. They analyzed how central banks are reducing their dependence on the dollar through active diversification. The study covered 46 central banks that hold at least 5% of their reserves in non-traditional reserve currencies. According to the authors, geopolitical tensions, including the use of sanctions, are encouraging some countries to reduce their reliance on the U.S. dollar, as they fear it may otherwise be used as a tool of political pressure against them.

The use of non-traditional reserve currencies is largely driven by the economic dynamics of their issuing countries and the deepening of their financial markets. At the same time, the overall growth of reserves naturally increases the diversification of currency composition and supports investment in non-traditional currencies, especially when the risk–return profile of these currencies appears attractive. According to Arslanalp et al. (2022), the view that the euro or the Chinese yuan could replace the U.S. dollar as the leading reserve currency is less realistic. However, since 1999, the euro has made up a significant share in the portfolios of euro area central banks.

With regard to the Chinese yuan, as of January 2025, total trade finance payments denominated in this currency (MT 400, MT 700) accounted for only 6% of global transactions, compared to 83% in the U.S. dollar (SWIFT, 2025). Nevertheless, some studies suggest that a further de-dollarization of global foreign exchange reserves will continue over the next five years. According a World Gold Council (2025) survey, 77% of central banks surveyed expect the current share of the U.S. dollar in global reserves to decline, either moderately or significantly. At the same time, the share of other currencies, in particular the euro and the Chinese yuan, may increase.

The Role of Gold as a Safe Reserve Asset

Since the Global Financial Crisis, and more sharply after the COVID-19 pandemic, central banks' demand for monetary gold has increased, contributing to the rise in its price (see Figure 2). Over the past 16 years, the volume of gold in official reserve assets has been growing steadily (see Figure 3).

In another study, Arslanalp, Eichengreen and Simpson-Bell (2023) identified two main factors that drive central banks to increase the share of gold in their official reserves. The first is the interest in gold as a "safe-haven" asset, which tends to rise during periods of global economic crisis, when returns on alternative financial assets decline. The second factor is the introduction of multilateral sanctions by the issuers of leading reserve currencies against other countries.

All else being equal, central banks in both emerging and advanced economies may share a common motivation for purchasing gold. However, Arslanalp et al. (2023) point to somewhat different dynamics: while in advanced economies rising geo-economic uncertainty has a positive influence on monetary gold purchases, in emerging economies this is compounded by geopolitical risk. The study emphasizes that for emerging economies, investing reserves in gold serves as a form of response to the risk of facing potential sanctions. In this sense, gold functions not only as a financial asset but also as an instrument for hedging geopolitical risk.
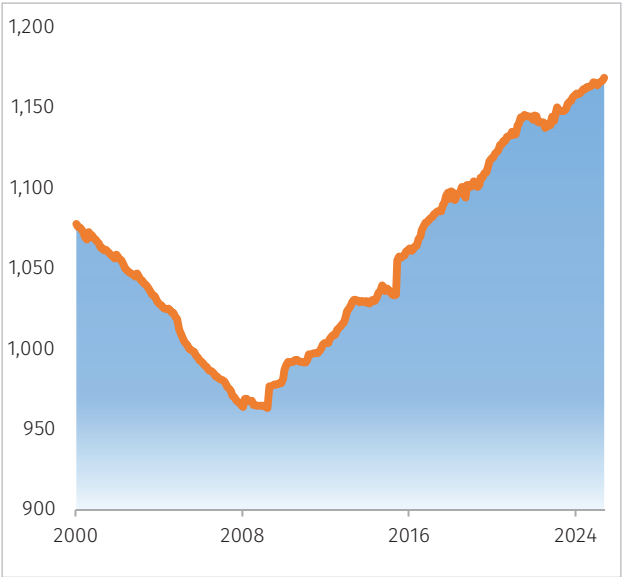
Figure 2. Central Banks' Purchases of Gold

Figure 3. Gold Held as Official Reserve Assets (million oz.)
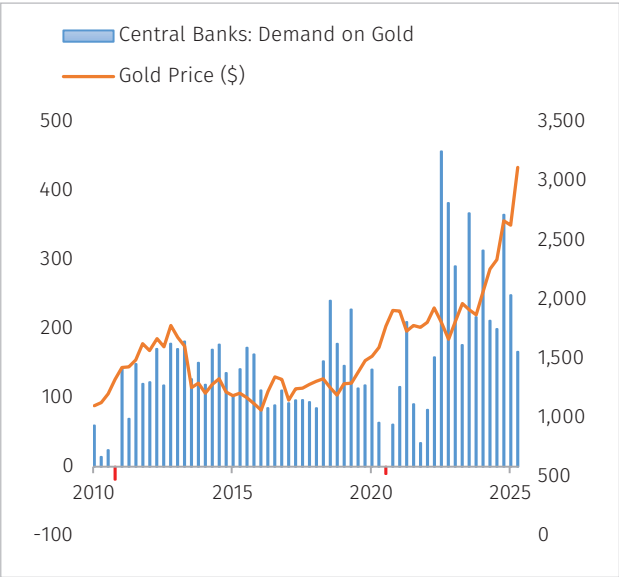
*Source: World Gold Council and authors' calculations.*

According to a study by HSBC (2025), with global economic growth slowing, more than half of the central banks surveyed expect to increase their volume of international reserves – including gold – in order to implement monetary policy more effective- ly, safeguard financial stability, and ensure the abil- ity to mobilize liquidity when needed. Central banks that anticipate increasing the share of gold in their reserves identify maintaining investor confidence in the country as their main priority (see Figure 4).

Figure 4. Reasons for the Growth of Official Reserves, Including Gold
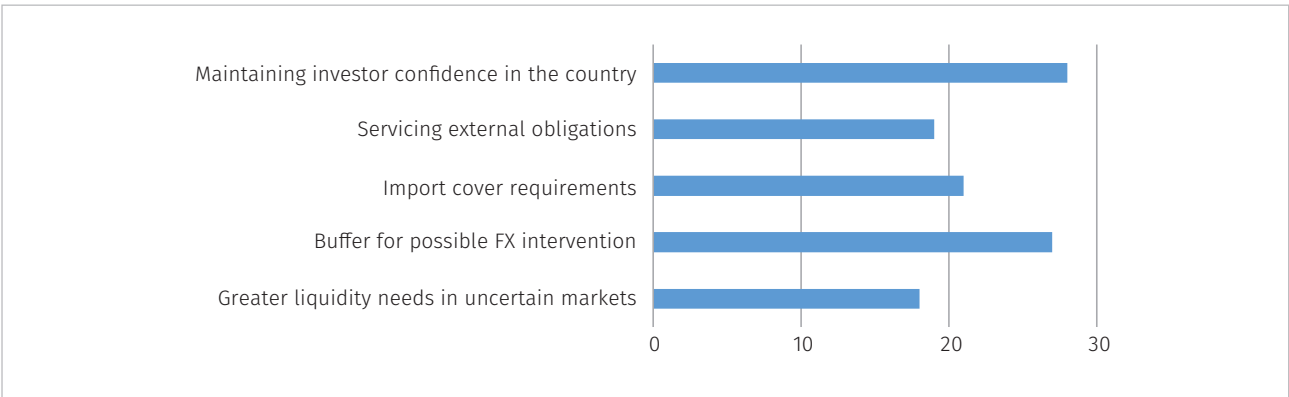

Source: HSBC.

A similar outcome was reported in the World Gold Council study (2025), according to which 95% of surveyed central banks expect the gold component in international reserves to increase, as compared with 61% reporting the same in 2022. Notably, none of the respondents anticipated a reduction in their gold reserves (see Figure 5).

Figure 5. Central Banks' Expectations Regarding Changes in Gold Reserves Over the Next 12 Months
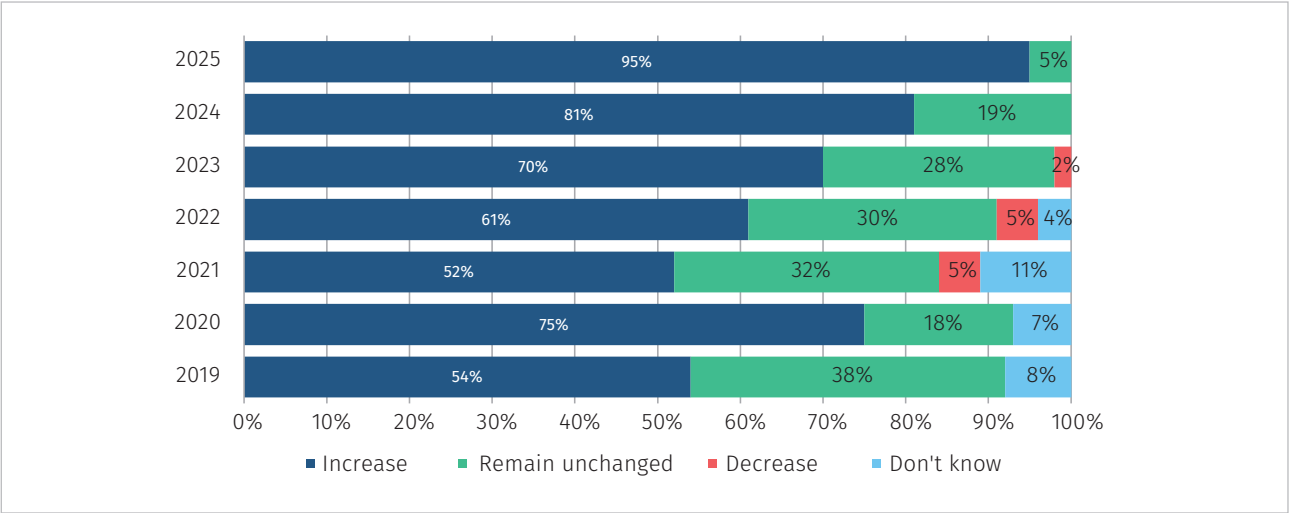

Source: World Gold Council.

The Impact of Geopolitical Risks on International Reserve Management

A study on central bank reserve management practices showed that consideration of geopolitical risks is gaining increasing importance (HSBC, 2025).

Compared with reports from the previous year, there has been a significant change in the number of central banks taking these risks and related challenges into account when managing and allocating their reserves (see Figure 6).

Figure 6. Central Banks' Consideration of Geopolitical Risks in Decisions on Reserve Management and Allocation
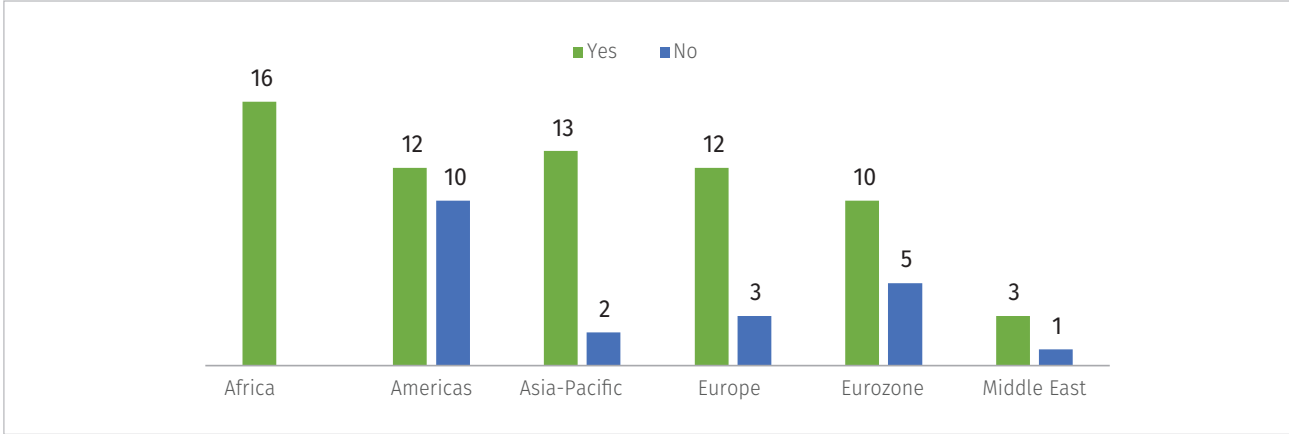
Source: HSBC.

According to the same study, 75.9% (66 out of 87) of the surveyed central banks confirmed that they take geopolitical risks into account in the process of managing their international reserves, compared with 67% (59 central banks) reporting the same in the previous year (HSBC, 2025). It is evident that central banks are closely monitoring developments related to global economic fragmentation, including the tensions between China and the United States, the international sanction regimes enacted against

a number of countries, trade wars, and disruptions in supply chains.

It is also notable that 65% of the surveyed central banks that reported taking geopolitical risks into account have begun implementing changes to their reserve management practices over the past 12 months. In addition, 21% of respondents view the use of official reserves as a geopolitical lever (so-called "weaponization") as being a highly significant development, particularly in light of the freezing of the Russian central bank's reserves, while a further 63% consider this to be partially significant (HSBC, 2025).

In recent history, the freezing of a central bank's assets has been a relatively rare occurrence; for example, the freezing of Iran's assets in 2012 and the sanctions imposed on Libya in 2011. These were isolated cases, mainly linked to specific events, and did not have a systemic impact. It was generally assumed that reserves that were placed in the assets of countries issuing traditional reserve currencies enjoyed a form of sovereign immunity. As a result, within the framework of strategic asset allocation, jurisdictional or geopolitical risk was considered immaterial.

This paradigm shifted in February 2022, when the G7 countries, acting in coordination and on the basis of a joint agreement, froze nearly half of the official reserves of the Central Bank of the Russian Federation, amounting to assets equivalent to USD 300 billion. This was the first case at such scale where the ability to conduct financial operations with reserve assets was simultaneously restricted across multiple jurisdictions. The decision was taken in response to the Russian Federation's invasion of Ukraine. Russia's previous occupation of parts of Georgia in 2008 and the 2014 occupation and annexation of Ukraine's Crimea had led to the introduction of sanctions; however, until 2022 the reserves of the Russian central bank had remained untouched.

A separate case worth noting is the dispute regarding the repatriation of gold held by the Central Bank of Venezuela in the Bank of England. In 2018 and early 2019, the Venezuelan central bank requested the return of its gold reserves to the country, but the Bank of England declined to act on those instructions. The reason given was the official position of the United Kingdom recognizing Juan Guaidó, rather than Nicolás Maduro, as the legitimate president of Venezuela. The legal dispute continued in the British courts, where the request of the Maduro-appointed board of the Venezuelan central bank for the return of its gold assets was not satisfied. As a result, even though there were no formal sanctions in place on the assets of the Central Bank of Venezuela, access to its gold reserves held under another country's jurisdiction was still restricted (Maduro Board v. Guaidó Board, 2020).

These developments have challenged the previously accepted view that international reserves enjoy sovereign immunity and are protected from political risks. Recent experience has shown that access to central banks' assets may be used as a tool in international relations. The creation of such a precedent has raised concerns within the governing bodies of various central banks.

Caldara and Iacoviello (2022) developed a monthly geopolitical risk index for the quantitative assessment of geopolitical risks. They examined how fluctuations in the index affect the prices and returns of financial assets (see Figure 7). A sharp increase in the index has a negative impact on economic growth, reduces equity returns, and increases demand for safe assets such as U.S. Treasury securities and gold. Their study analyzes both the individual effect of anticipated and realized events. Anticipated risks appear as a background factor for financial markets, creating long-term shock effects, raising volatility, and making the investment horizon more difficult to predict. Realized events, on the other hand, serve as illustrations of facts that generate immediate but short-lived shock effects (Caldara & Iacoviello, 2022).

Figure 7. Geopolitical Risk Index, 1990–2025
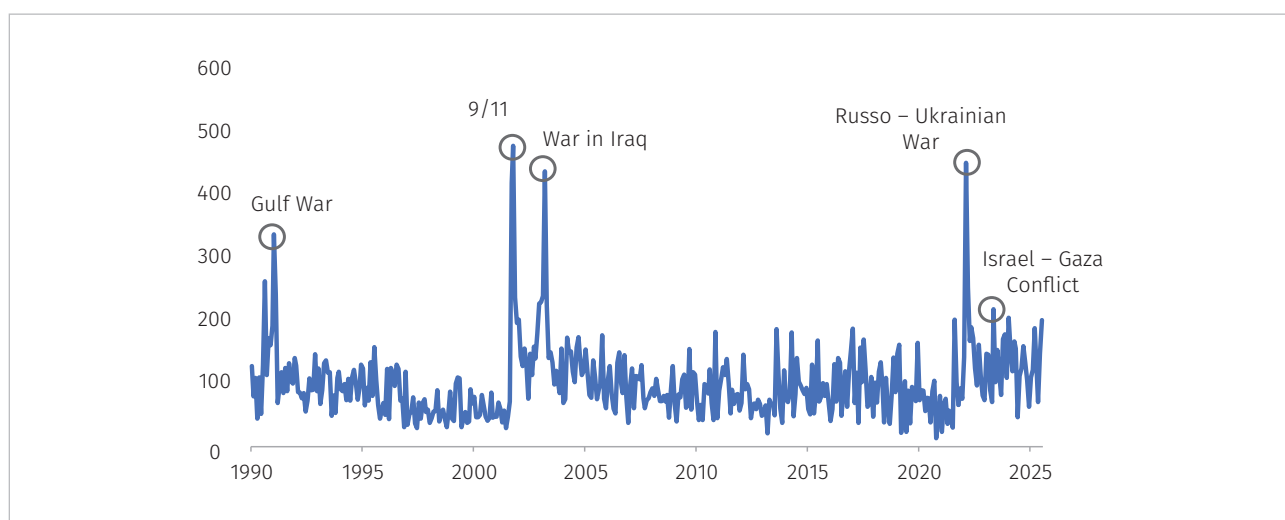
Source: Bloomberg.

The IMF's *Global Stability Report* (2025b) describes the behavior of equity prices in response to geopolitical events. The impact of such events is divided into two main components: market and economic. The market component reflects uncertain expectations that undermine the confidence of market participants and alter their risk tolerance; whereas the economic component includes trade and financial restrictions, as well as damage to economic infrastructure. These developments have a direct impact on supply chain disruptions and rising public debt, both of which contribute to higher inflation in the economy.

Changes in financial asset returns, sovereign risk and rising debt, reassessment of import–export structures, and capital outflows are among the factors that central banks take into account in the process of Strategic Asset Allocation.

Evolving Trends in the Traditional SAA Framework

The most important element in the management of official reserves is the Strategic Asset Allocation (SAA) framework. Its purpose is to define, in advance, the optimal distribution of financial resources across different classes of reserve assets,

maturities, and currencies over a given investment horizon, taking into account risk tolerance and the policy of the central bank (IMF, 2004).

The management of official reserves is based on three main principles: liquidity, safety, and return. Foreign exchange market interventions serve the objectives of liquidity and safety, while the management of excess investment capital is directed toward return. The prioritization of a central bank's objectives may shift depending on its current needs. For example, if safety is the priority, returns from active reserve management are expected to be relatively lower, since the portfolio manager is constrained from investing in financial assets with higher risk and higher yields. In practice, there are two main approaches: the first assumes that safety and return are equally important for central banks, while the second gives greater priority to safety than to return. In either case, liquidity is treated as the top priority.

In the process of allocating reserve assets, constraints are not limited to the prioritization of pre-defined objectives. Other important factors include the composition of external debt, the investment horizon, an institution's risk tolerance, the minimum

permissible credit rating, the classes of assets allowed for trading, and the monetary and fiscal policy stances. Taking these constraints into account affects the currency and asset composition of reserves, as well as the size of individual tranches.

Building on this traditional tranche structure, recent developments have increased the importance of stress testing and diversification in shaping reserve management decisions.

At the National Bank of Georgia, priority is given to placing official reserves in safe and liquid assets. The central bank's reserves are divided into tranches of different sizes: operational, liquidity, and investment. The purpose of the operational and liquidity tranches is to meet short- and medium-term obligations, for both debt service and liquidity management. The investment tranche, meanwhile, is actively managed against a benchmark and is oriented toward return. These tranches are further composed of sub-portfolios denominated in different currencies. Based on the reporting cycle, the investment horizon is considered to be one year. In 2024, the income generated from reserve management amounted to GEL 413.1 million (National Bank of Georgia, 2024).

In determining the size and composition of the tranches, the National Bank of Georgia makes use of scenario and stress-scenario analysis. Baseline scenarios are typically built on expectations with a material probability of occurrence or on events that have taken place historically. The recent increase in geopolitical risks provides a case for considering such factors in stress testing as part of future diversification efforts. In this context, in 2024 the National Bank of Georgia purchased monetary gold for the first time, with the aim of strengthening the diversification of its reserves. The purchase was carried out during a period of strong inflows, heightened global and regional geopolitical risks, and elevated inflationary expectations (National Bank of Georgia, 2024). This step was consistent with the practice of

several Eastern European central banks, which have also been actively increasing their gold holdings in recent years.

Stress-scenario simulations for the future make it possible to assess the potential impact of geopolitical events on international reserves under the conditions of a one-off liquidity shock. Based on the results of these scenarios, it is also possible to consider the creation of an additional resilient tranche, where the market risk criteria for the included financial assets are treated as secondary and priority is given to the resilience component. A tranche structured with such instruments would be largely resistant to risks arising from geopolitical developments and international relations.

The currency composition of the portfolios within this tranche could, in theory, be linked to the currencies of trading partners, especially those of import-oriented countries, even if such currencies are non-traditional reserve currencies. For this type of portfolio, both risk tolerance and management style differ from the conventional approach. Accordingly, the Strategic Asset Allocation framework may also be adjusted, with resilience added as a fourth principle alongside safety, liquidity, and return.

Conclusion

The fragmentation of the global financial environment and rising geopolitical risks call for a further refinement of the framework for managing official international reserves. The long-standing assumption that sovereign immunity fully applies to international reserves no longer holds under current realities. The accelerating pace of portfolio diversification has already been reflected in both currency and asset class composition, and in the future this trend is expected to intensify and become the subject of broader discussion.

The willingness of central banks to incorporate resilience as a new dimension in their reserve management processes demonstrates their readiness

to adapt. The possible introduction of a resilient tranche into the architecture of foreign exchange reserves could have significant quantitative and qualitative implications for decision-making processes and the formation of expectations and may emerge as an important topic for future research.

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GEORGIAN CORPORATE BOND MARKET LIQUIDITY AND RETAIL INVESTOR PARTICIPATION

SHOTA BAKHUASHVILI, LASHA KODUA AND DAVID ABESADZE

Abstract

This paper assesses the liquidity of Georgia's corporate bond market and its relationship with retail investor participation. Using data on publicly issued corporate bonds from 2014 to 2024, the analysis considers liquidity at both the individual bond level and the market-segment level. Liquidity is gauged using quantity-based proxies – trade frequency and turnover – reflecting the limited availability of price-based measures in this emerging market. The research indicates that even though secondary-market liquidity is generally thin, a subset of bonds – those that are initially distributed to a broader set of investors – displays markedly higher trading activity and turnover. On the market-segment level, foreign currency-denominated bonds, which tend to have a more diverse investor base that includes retail participants, exhibit higher liquidity than GEL-denominated bonds that are largely held by a few institutional investors. To enhance liquidity through greater retail involvement, the study underscores the importance of improving market transparency, facilitating access to electronic trading, lowering transaction costs, and supporting the proactive dissemination of product knowledge by brokerages. While evidence points to a positive link between investor diversity and liquidity, these findings should be interpreted with caution due to data constraints.

Introduction

Corporate bonds represent a form of direct financing for companies, providing an alternative to traditional, intermediary-based sources such as bank loans. The availability of diverse financing channels is essential since they contribute to lower financing costs and enable business expansion, ultimately supporting broader economic growth. Moreover, for investors, corporate bonds provide a range of investment options that generally offer less volatility than stocks and higher yields than government bonds and bank deposits. Consequently, the development of corporate bond markets is essential for well-functioning and resilient financial systems, particularly in emerging economies where commercial banks continue to dominate external financing.

A critical element in the development of the corporate bond market is the liquidity of the secondary market. Holden, Jacobsen and Subrahmanyam (2014) define market liquidity as "the ability to trade a significant quantity of a security at a low cost in a short time." This multidimensional concept is typically described through five attributes: (1) Tight-

ness – the cost of trading, often measured by the bid–ask spread; (2) Immediacy – the cost or delay of quickly executing orders; (3) Depth – the volume of orders that can be absorbed at prevailing prices; (4) Breadth – the overall volume of trading across price levels; and (5) Resilience – the speed at which prices revert to equilibrium after a shock (Sarr & Lybek, 2002).

Illiquidity in the corporate bond market introduces a "liquidity risk" for investors – the risk of being unable to exit a position quickly or at a fair price. Moreover, low liquidity impairs the efficiency of price discovery, weakening the ability of markets to reflect fundamental information. These frictions tend to discourage investor participation and prompt those who remain on the market to demand a liquidity premium, which is typically reflected in wider bid–ask spreads and a higher cost of financing for borrowers.

A substantial body of academic literature and empirical research emphasize that market liquidity supports more accurate price formation; reduces financing costs for issuers and transaction costs for investors; broadens the investor base, including for foreign investors; and encourages larger issuance volumes. Moreover, maintaining a deep and liquid corporate bond market is essential not only for attracting foreign capital, but also for ensuring that domestic savings are channeled efficiently into domestic investment. Taken together, these effects reinforce capital market development and contribute to economic growth (Laugwitz et al., 2025).

Corporate bond market liquidity is influenced by a wide array of factors, including issuer- and issue-level characteristics (such as size, maturity, age, and credit risk), the structure of market participants (institutional, foreign, retail investors, and market makers), the structure and functioning of capital markets, and the broader macro-financial environment (Carvajal & Bebczuk, 2024). These factors jointly shape trading activity on the secondary market. Among these determinants, retail investor

participation has received increasing attention in the literature.

Although the transaction volumes of retail investors are generally smaller than those of institutional investors, retail investors play an important role in market liquidity. Through frequent small transactions, they help enhance market breadth and immediacy, thereby partially counterbalancing the predominately buy-and-hold strategies employed by large institutional investors.

Liquidity is not directly observable and is typically measured using empirical proxies: quantity-based measures capture trading intensity, while price-based indicators reflect the price impact of trades. Since bid–ask quotes are seldom available for Georgian corporate bonds, this study follows the emerging market practice and tracks quantity-based proxies, which have been shown to more effectively capture liquidity differences than price-based measures in such markets (Hameed et al., 2019). This study employs two such proxies: turnover (trade value relative to average outstanding volume) and trade frequency (number of transactions).

By the end of 2024, according to the authors' estimations, corporate bonds accounted for 2.3% of Georgia's GDP, reflecting rapid growth in this area (National Bank of Georgia, 2025). However, the secondary market remains largely inactive, with limited trading activity observed, particularly in the GEL-denominated bond segment. It is therefore necessary to identify effective strategies to enhance secondary market liquidity.

This paper seeks to assess the current state of secondary market liquidity in Georgia by employing quantity-based measures – specifically, turnover and trade frequency – and by identifying the principal categories of market participants. The analysis then narrows its focus to the role of retail investors, exploring both their actual level of participation and the underlying factors that may promote greater retail investor engagement.

Literature Review

A considerable body of academic literature serves to highlight the significant role that corporate bonds play as both a means of long-term financing for issuers and a key diversifying class of asset for investors. The effectiveness of corporate bond markets in fulfilling these functions is largely contingent upon liquidity within the secondary market. Market participants now widely recognize corporate bond market liquidity as a macro-critical variable, given its impact on firms' cost of capital and the overall resilience of financial systems. Consequently, extensive research explores the relationship between illiquidity and bond pricing, yield spreads, bid–ask spreads, and the way these factors adjust with improvements in market liquidity.

Chen, Lesmond and Wei (2007), in their study "Corporate Yield Spreads and Bond Liquidity", analyze a sample of 4,000 corporate bonds (issued on the US market during 1995-2003) and show that illiquidity is associated with higher yield spreads. In contrast, improved liquidity significantly reduces spreads, thereby highlighting the central role of liquidity in bond valuation. They find that liquidity accounts for a significant share of the variation in yield spreads, in both levels and changes.

Bao, Pan and Wang (2011) further emphasize that, while the role of illiquidity in bond pricing is widely recognized, prior evidence on this subject has largely been of a qualitative and indirect nature. Their analysis establishes a strong empirical link between illiquidity and bond pricing, both at the aggregate level and across individual bonds. Specifically, they find that, in aggregate, "changes in the market level of illiquidity explain a substantial part of the time variation in yield spreads of high-rated (AAA through A) bonds. During the 2008 crisis, this aggregate illiquidity component in yield spreads becomes even more important, over-shadowing the credit risk component". In cross-section, they find that "the bond-level illiquidity measure explains individual bond yield spreads with large economic significance".

After reviewing more than 100 academic papers, Carvajal and Bebczuk (2024) sort the drivers of secondary-market liquidity into five analytically distinct categories: (i) asset class; (ii) issuer and instrument characteristics; (iii) composition of market participants; (iv) structure and functioning of capital markets; and (v) macro-institutional pre-conditions. While all five dimensions matter, empirical work published since the global financial crisis has increasingly identified holding structure – in other words, who owns and trades the bonds – as the critical conduit through which liquidity either materializes or falters.

Early studies into this subject focused on institutional investors because in most jurisdictions these held most of the outstanding volume. Corporate bond markets in many emerging economies are dominated by large institutional investors that adopt buy-and-hold strategies, thereby limiting secondary market liquidity (IMF, 2005). This constraint is further amplified by the underdevelopment of a more diverse institutional investor base and a mismatch between the rapid growth of assets under management and the relatively limited supply of tradable securities. In addition, concentrated ownership and "herding" behavior contribute to one-sided markets and further reduce trading activity. Institutional participation is liquidity-enhancing when it is broadly distributed but is liquidity-impairing when ownership is excessively concentrated – a pattern frequently observed across emerging markets. Thus, to increase liquidity, the investor base should be diversified. Long-term institutional investors need to be complemented by market participants with shorter investment horizons and differing investment needs, beliefs, and strategies (Doornik et al., 2024). These participants can help balance one-sided markets by taking opposing positions and avoiding the herd-like behavior typical of institutions with long-term investment horizons.

Doornik et al. (2024) acknowledge that foreign investors can provide additional liquidity and depth to local bond markets, with their presence bringing

additional capital and diverse trading strategies. However, they also note that heavy reliance on foreign investors can heighten a market's vulnerability to shocks. Shocks to global risk aversion may lead foreign investors to exit or decrease their positions in emerging markets' bonds. In the absence of a developed domestic investor base that is capable of absorbing asset sales by foreign investors, this can lead to large swings in bond prices, adversely affecting the liquidity and resilience of debt markets. Thus, foreign participation tends to boost liquidity in normal times but can amplify liquidity stress during periods of turmoil. Although the authors primarily focus on government bond markets, their findings are, by extension, applicable to corporate bond markets.

The academic literature remains less conclusive regarding the contribution of retail investors to market liquidity; however, emerging empirical evidence indicates that their role is becoming increasingly significant. While most existing research has focused on equity markets, many of the behavioral characteristics identified in those contexts are also applicable to bond markets. Early theoretical frameworks portrayed retail investors as noise traders whose sentiment-driven orders could increase volatility and widen bid–ask spreads (De Long et al., 1990). However, more recent empirical studies have challenged this view. Using an instrumental variable approach, Abudy and Wohl (2018) establish a causal relationship between retail investor trading and narrower bid–ask spreads in the Tel Aviv Stock Exchange (TASE), where corporate bonds are traded alongside other instruments. They find that retail investors account for 9% of total trading volume, and that increased retail investor participation leads to narrower spreads and improved market liquidity with high significance. Abudy (2020) further investigates the role of retail investor participation in enhancing market liquidity. He examines the effect of

retail investor trading by employing two widely used liquidity proxies: the bid–ask spread, which reflects the cost of executing a small round-trip trade, and the Amihud ILLIQ (2002) measure, which captures the price impact of trading. For both indicators, the study finds a contemporaneous and statistically significant relationship, suggesting that greater retail participation is associated with improved market liquidity. Importantly, the analysis also finds that retail trading does not generate price noise at the aggregate level, suggesting that retail activity does not impair price efficiency.

Three distinct facts emerge from the literature: (i) institutional ownership is conducive to liquidity when it is diffuse, but detrimental when concentrated; (ii) foreign participation raises average liquidity yet can amplify volatility, necessitating a resilient domestic counterweight; and (iii) retail investors, although once assumed to be a destabilizing force, are increasingly observed to contribute positively to liquidity. These insights inform the empirical analysis that follows.

Overview of Georgia's Corporate Bond Market

The Georgian corporate bond market has developed significantly over the past decade (2014–2024). Total outstanding corporate bonds increased from just GEL 56 million in 2014 to about GEL 2.11 billion by the end of 2024, reflecting compound annual growth of around 44%. Figure 1 summarizes key market metrics. The number of outstanding bonds issued rose from only five bonds in 2014 to 43 bonds in 2024, which were issued by a growing set of corporations (three issuers in 2014, rising to 21 issuers in 2024). This expansion in breadth indicates that more companies are tapping into the debt capital market, moving beyond the handful of pioneers that initiated corporate bond issuance in Georgia.

**Figure 1. Local Public Corporate Bond Market in Georgia**
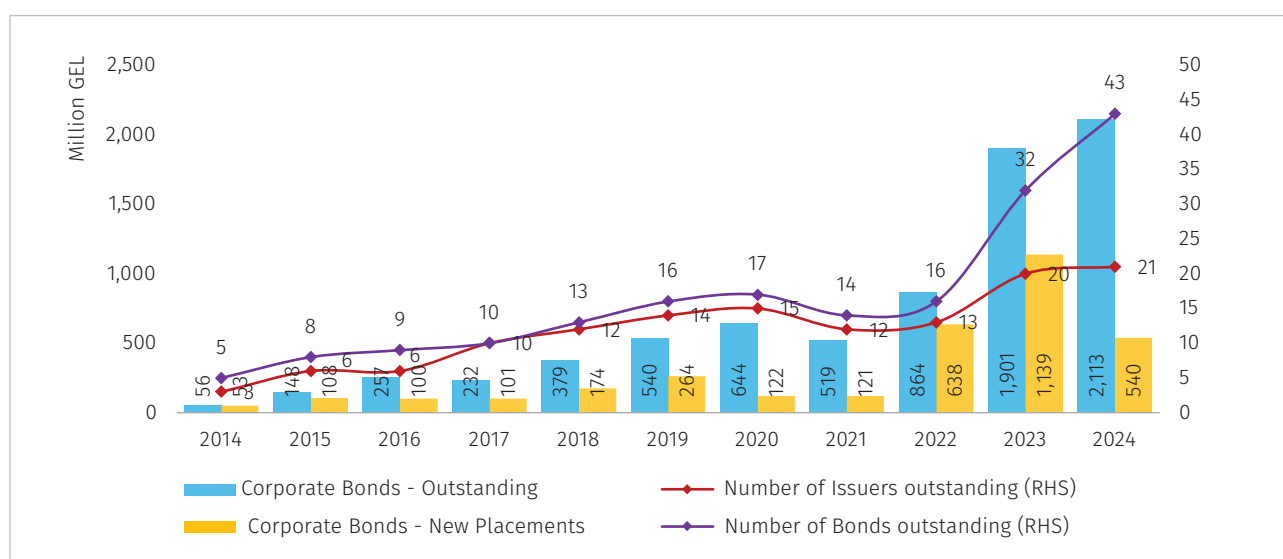
Source: National Bank of Georgia (NBG) and authors' calculations.

From 2014 through 2021, the domestic corporate bond market expanded slowly: annual gross issuance rarely exceeded GEL 200 million, and the stock of outstanding bonds remained around 1% of GDP. This momentum shifted in 2022–2023. During those two years the Capital Market Support (CMS) program[1] supported seven public offerings, amounting to GEL 450 million. Alongside these CMS transactions, several firms took advantage of favorable conditions to rollover or issue new bonds. Gross issuance leapt from GEL 121 million in 2021 to GEL 638 million in 2022, and then to GEL 1.14 billion in 2023, lifting outstanding domestic corporate bonds to roughly 2.3% of GDP (see Figure 2).

Figure 2. Local Public Corporate Bonds Outstanding by Currency
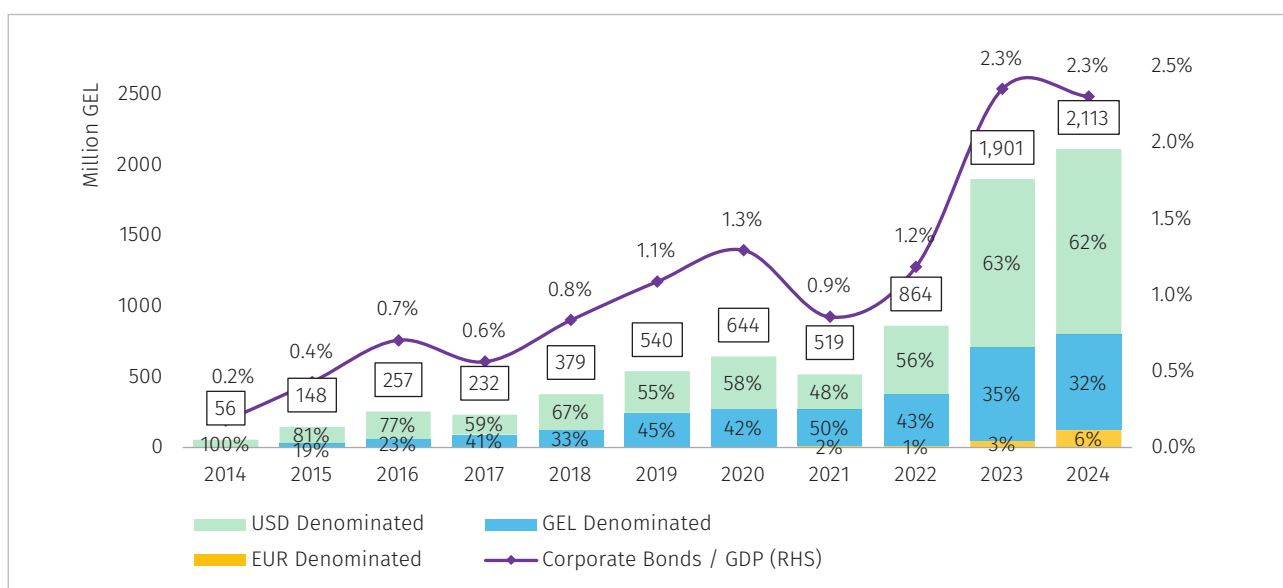
Source: NBG and authors' calculations.

A significant aspect in the development of the Georgian corporate bond market is the split between local (GEL) and foreign (primarily USD, occasionally EUR) currency-denominated bonds. Historically, foreign-currency bonds have dominated; however, the stock of GEL-denominated bonds has risen considerably in line with overall market growth. Figure 2 shows this currency decomposition in more detail and additional analysis appears later in the paper.

Empirical Framework and Analysis

Data Foundations and Scope

Bond-level reference data (currency of issue, outstanding balance and other details) are sourced from the National Bank of Georgia's (NBG) Securities Market Interactive Statistics portal, which records every publicly offered corporate bond during the period 2014–2024.[2] At the time of writing, the database does not include instruments issued by international financial institutions, offshore Eurobonds, or private placements, so those securities fall outside this paper's scope.

Secondary market trades are extracted from the Georgian Stock Exchange (GSE) website, which discloses data on both exchange executions and reported over-the-counter (OTC) transactions for all listed bonds. Each entry contains information on date, price, and value, allowing calculation of trade counts and turnover ratios.

Aggregate holding structure information is compiled from the monthly regulatory reports submitted by commercial banks and brokerage companies to the NBG. The paper aggregates positions by the following investor classes: resident individuals, resident commercial banks, resident pension fund, other resident institutions, non-resident individuals, and non-resident institutions.

A distinctive though imperfect variable is the number of initial buyers per bond. Placement reports filed with the NBG provide the allocation count at issuance[3]. Because Georgia hosts only a handful of sizable buy-side institutions – predominantly banks and, since 2022, the Pension Fund[4] – an allocation spread across, say, 15 investors almost certainly includes individuals or small corporations. Therefore, this study treats the initial buyer tally as a proxy for investor breadth and, by extension, for potential retail penetration.

Empirical Analysis and Findings

The core question in this section is whether a broader investor base – particularly the participation of retail investors – coincides with improved liquidity for Georgian corporate bonds. This section investigates liquidity measures at both the individual bond and market segment levels, connecting these findings to the composition of investors. In Georgia's nascent corporate bond market, liquidity can be gauged by two simple proxies that are observable for all listed issuances: the frequency of trades and the turnover ratio. Trade frequency refers to the number of executed trades over a bond's entire lifetime, while the turnover ratio is the total value traded over a period (a bond's entire lifetime or annual periods) divided by the bond's outstanding principal amount (for the aggregate bond market or market segment, the average annual outstanding value is used). These metrics capture complementary aspects of liquidity, reflecting how continuously the market is trading, and how much volume it generates relative to a bond's size.

According to these measures, liquidity in the Georgian corporate bonds market is generally very thin. The median bond changes hands only once during its lifetime, and the median lifetime turnover ratio is almost 0% of outstanding value (see Table 1). In fact, many listed corporate bonds are never traded at all after their initial placement.

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2. Amounting to 87 individual bonds.

3. For the purposes of this paper, the available data for 68 individual bonds were analyzed.

4. The Pension Fund was established in 2019 but did not make its first GEL-denominated public corporate bond purchase until 2022.

Table 1. Summary Statistics of Liquidity Measures for the Sample of Public Corporate Bonds Issued Between 2014-2024 (Sample of 68 Bonds)

	Min	Max	Mean	Median
Trade Frequency (Lifetime)	0	129	13	1
Turnover Ratio (Lifetime)	0.00%	110.30%	11.21%	0.05%

Source: NBG, GSE and authors' calculations.

However, there is considerable dispersion in liquidity across issuances. Six individual bonds have recorded more than 50 trades in total during their time on the market, of which four even exceeded a 20% lifetime turnover ratio (see Figure 3). These bonds demonstrate that active secondary trading is possible on Georgia's market under the right conditions. The wide gap between the median and the high end of the liquidity range suggests that certain characteristics of an issuance – notably the composition of its investor base – might be driving these differences.

Figure 3. Trade Frequency and Number of Initial Holders for the Sample of Public Corporate Bonds Issued Between 2014-2024 (Sample of 68 Bonds)[5]
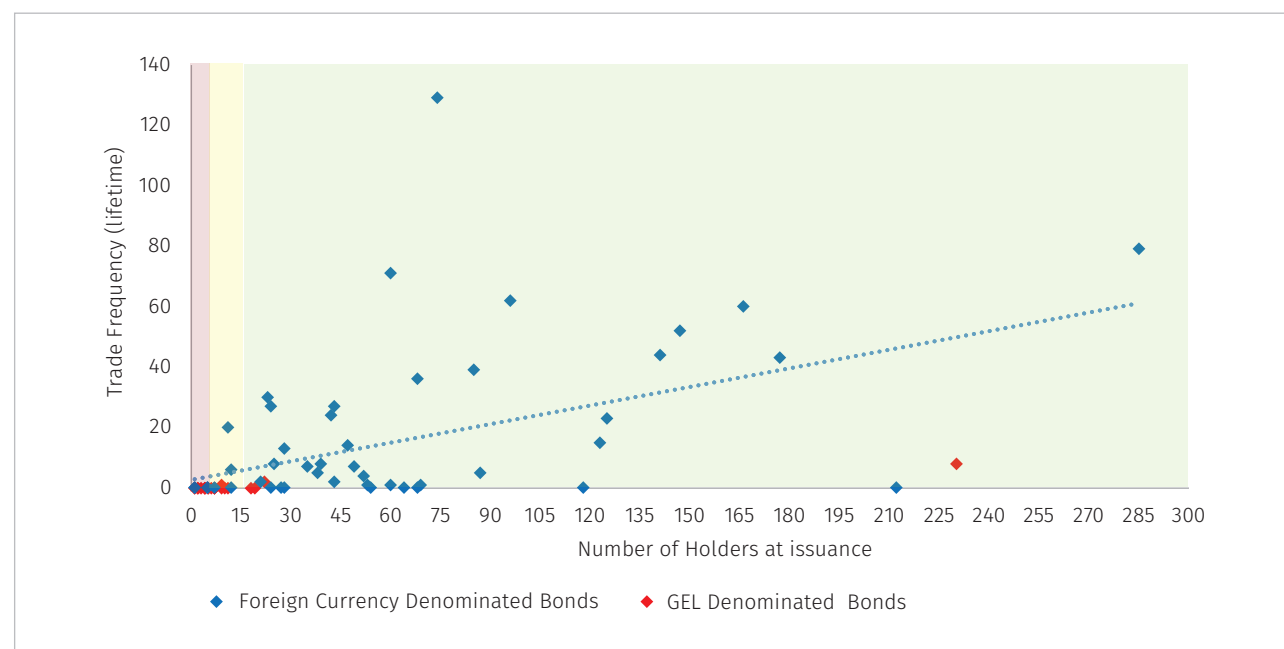
Source: NBG, GSE and authors' calculations.

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5. Figure 3 shows three shaded areas corresponding to corporate bond placement groups: concentrated placements (red), intermediate placements (yellow), and broad placements (green).

A notable pattern emerges when each bond's recorded trade frequency is plotted against the number of initial buyers (see Figure 3). A upward-sloping cloud is observable, indicating that widely distributed bonds are traded more. To clarify the observed pattern, bonds are classified into three allocation groups by the number of initial buyers (reflected on Figure 3 with different colors): concentrated placements, of 1-5 initial buyers, essentially describe deals absorbed by institutional investors; intermediate placements, of 6-15 buyers, likely mix a few institutions with occasional private investors; and broad placements, with 15 or more buyers, almost certainly reach retail investors in meaningful numbers.

This categorization reflects Georgia's market structure. Historically, local corporate bond issuances were taken up by just a few large players (mostly by Georgian commercial banks and, more recently, the Pension Fund of Georgia). Using these natural breakpoints, the results are stark. Average lifetime trade frequency climbs from 0 in the concentrated group, to 2 in the intermediate group, rising to 20 in the broad placements group; lifetime turnover ratios follow the same monotonic gradient: 0%-6%-16% (see Table 2).

Table 2. Liquidity Measures, Grouped by Initial Allocation Count, from the Sample of Public Corporate Bonds Issued Between 2014-2024 (Sample of 68 Bonds)

	Concentrated	Intermediate	Broad
Number of Bonds	14	12	42
Total Placed Value (Million GEL)	206.80	816.53	1,519.39
Average Trade Frequency	0	2	20
Median Trade Frequency	0	0	8
Average Turnover Rate	0%	6%	16%
Median Turnover Rate	0%	0%	6%

Source: NBG, GSE and authors' calculations.

The currency denomination of bonds adds a second layer to the story. Historically, GEL corporate bonds have mainly been placed to a handful of local banks and are thus overrepresented in the concentrated bucket (which appears as a cluster of red markers in the lower-left corner of Figure 3). Foreign currency bonds, by contrast, attract a more diverse audience, including foreign and local retail investors. Unsurprisingly, foreign currency bonds record higher average and median liquidity indicators in terms of both trade frequency and turnover (see Table 3).

Table 3. Liquidity Measures, Grouped by Currency of Denomination, from the Sample of Public Corporate Bonds Issued Between 2014-2024 (Sample of 68 Bonds)

	Average Initial Buyer count	Average Trade Frequency	Average Turnover Rate
GEL Denominated	18	1	1%
Foreign Currency Denominated	65	19	16%

	Median Initial Buyer count	Median Trade Frequency	Median Turnover Rate
GEL Denominated	7	0	0
Foreign Currency Denominated	48	7	6%

Source: NBG, GSE and authors' calculations.

Bond-level evidence can be considered partial as it relies on buyer count as a proxy for retail reach. To strengthen the inference, the analysis will thus turn to segment-level aggregates, where ownership is observed directly.

To obtain a more comprehensive view, the paper next analyzes aggregate data for the full universe of public corporate bonds. In this setting, proxies are unnecessary because holding structures are directly observable for both the GEL-denominated and foreign-currency-denominated segments of the market. For the aggregate analysis, the average annual turnover ratio is used, in contrast to the life-time indicators applied at the bond-level analysis. For each calendar year, the aggregate turnover ratio is calculated for both the GEL and foreign currency segments by dividing the total trading volume within a segment by its average outstanding value (see Figure 4).

Figure 4. Annual Average Turnover Rate of Public Corporate Bonds Issued Between 2014-2024 (Total Population of 87 Bonds)
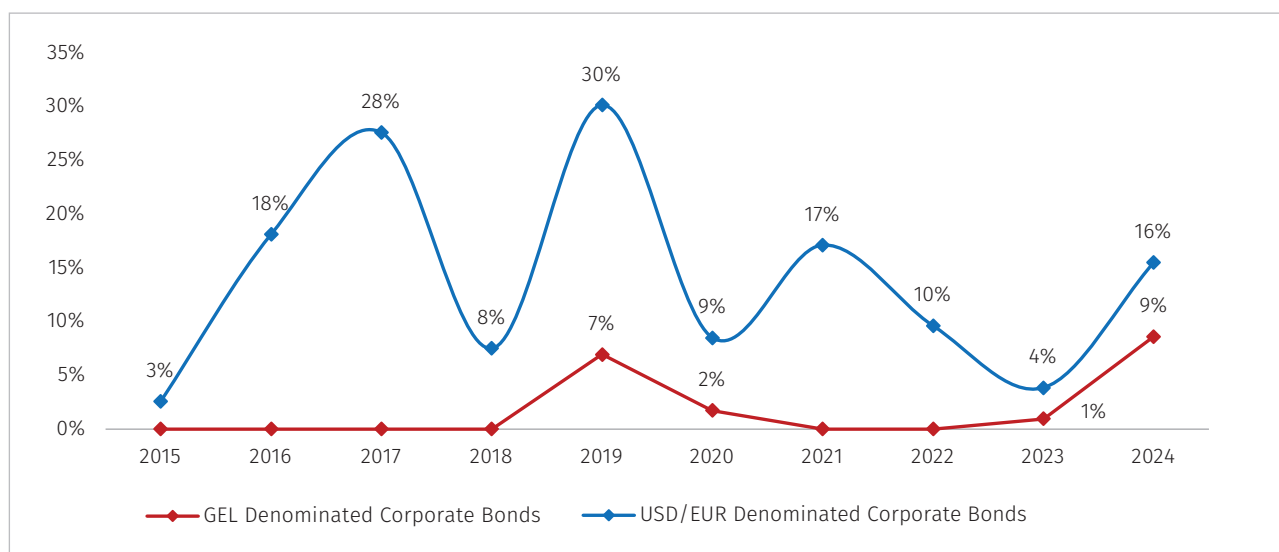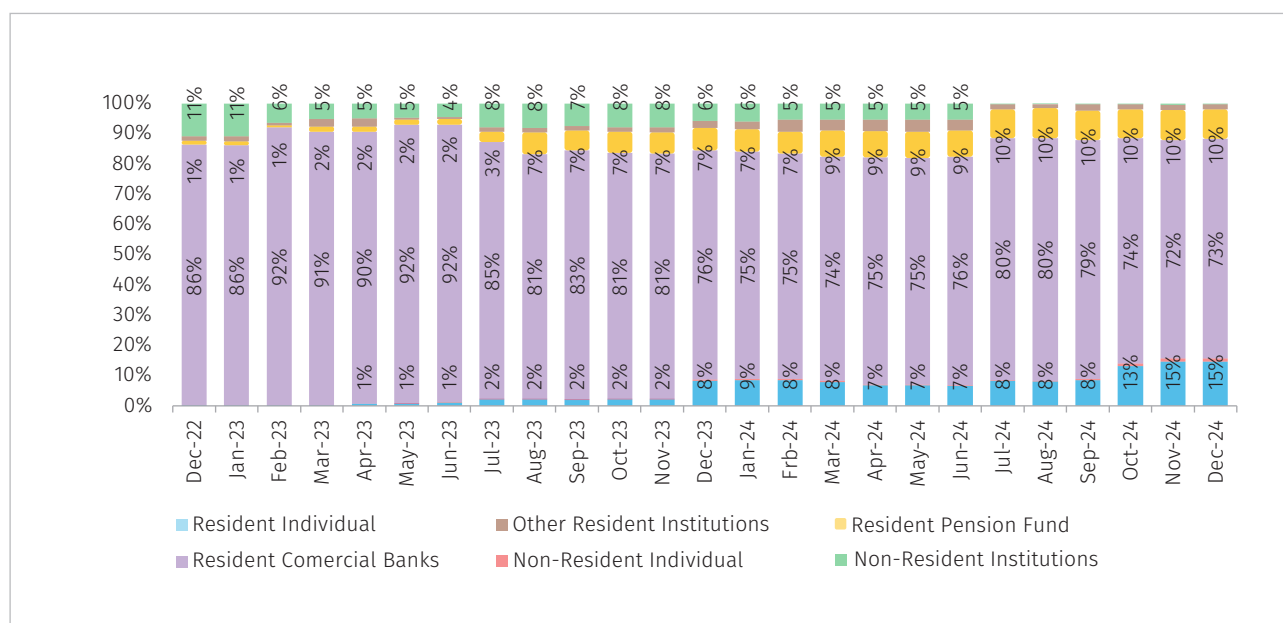

Source: NBG, GSE and authors' calculations.

The historical series shows a consistent difference between the two segments. The turnover ratio for foreign currency-denominated corporate bonds has ranged from 4% to 30%, which is moderate relative to international benchmarks but points to secondary market activity within the context of an emerging market. In contrast, the GEL-denominated segment has rarely surpassed 0% and has experienced years with no recorded trades[6].

Why does the gap between currencies persist? The securities holdings data provide the missing link. Monthly regulatory reports, aggregated by investor class, show that commercial banks and, since 2022, the Georgian Pension Fund routinely own 80-90% of all outstanding GEL corporate bonds (see Figure 5). In contrast, the share of commercial banks' holdings of foreign currency corporate bonds is much smaller, with the balance mostly spread among resident and non-resident individuals and non-resident institutions (see Figure 6). In addition, ownership diversity and liquidity are correlated: holdings concentrated among investors with long-term horizons result in lower turnover, while more dispersed ownership leads to increased trading activity.

Figure 5: Holding Structure of Outstanding GEL-Denominated Public Corporate Bonds

Source: NBG and authors' calculations.

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6. In the GEL-denominated corporate bond segment, the turnover ratio increased in 2023–2024 (see Figure 4). However, this rise was driven by one-off transactions – issuer buybacks of their own bonds on the secondary market – and does not indicate an improvement in liquidity in this segment.

Figure 6: Holding Structure of Outstanding Foreign Currency-Denominated Public Corporate Bonds
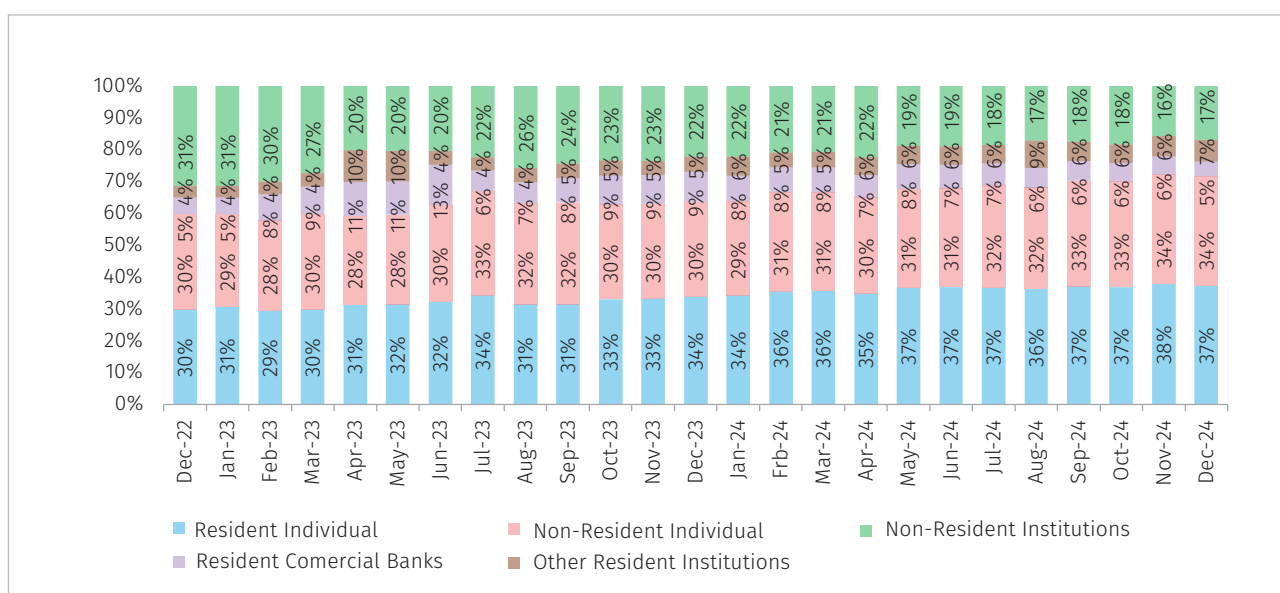
Sources: NBG and authors' calculations.

To sum up, the evidence indicates the presence of a segmented market. The GEL segment is dominated by a handful of domestic institutions that purchase bonds primarily for hold-to-maturity portfolios. Unsurprisingly, those bonds seldom trade. The foreign currency segment, by contrast, enjoys a more balanced mix of buyers, including households and international investors, who react to news, relative value shifts, and personal liquidity needs. Their participation translates into more frequent trading, higher turnover ratios and improved price discovery.

Additionally, it is important to recognize that correlation does not inherently establish the direction of causality. The Georgian corporate bond dataset contains a limited number of observations, and the time series is relatively short, making it challenging to analyze these dynamics using formal econometric methods. Moreover, liquidity is not shaped by ownership structure alone. Georgia's trading infrastructure remains mostly OTC; there is no pre-trade transparency, while post trading reporting occurs with a certain delay; investors do not have electronic access (they cannot place orders electronically) to the domestic bond market; and there are no market-making obligations. These factors further influence investor engagement on the secondary corporate bond market.

International Approaches to Fostering Retail Participation in Corporate Bond Markets

Retail participation in corporate bond markets has proved difficult to cultivate in many jurisdictions, yet several countries have succeeded by systematically lowering those frictions that make bonds a "professional only" class of asset. International experience suggests two mutually reinforcing levers for the successful promotion of retail participation: electronic access and transparency. Their combined effect often yields the additional benefit of lower transaction costs. The introduction of electronic trading platforms tends to enhance both pre- and post-trade transparency, which helps compress bid–ask spreads and reduce execution costs, further lowering entry barriers for retail investors. Evidence also indicates that market intermediaries, such as brokerage firms and platforms, play an increasingly significant role in this process: they shape the user experience that ultimately determines whether individual investors view bonds as accessible and tradable.

A widely shared lesson is that electronic access to the bond market should, where feasible, match the convenience available in equities. In the United States, brokerages and trading platforms intro-

duced electronic Request for Quotation (RFQ) systems for order matching in corporate bond markets during the early 2000s. This development eliminated the need for clients to negotiate prices over the phone and enabled them to electronically request quotes from multiple brokers, thereby facilitating cost reductions through the selection of optimal offers. A study by Hendershott and Madhavan (2015) found that execution costs in electronically traded U.S. corporate bonds were significantly lower than those of bilaterally negotiated trades. The shift toward electronic trading in the corporate bond market has enabled new participants to enter – both liquidity seekers and providers – while the relative share of trading volume attributable to traditional intermediaries such as banks and broker-dealers has declined substantially (Bech et al., 2016).

Israel's TASE went further by embedding corporate bonds in the same central limit order book (LOB) as equities. Abudy and Wohl (2018) report that the introduction of improved electronic access to TASE's LOB led to increased price competition and complete quote visibility for all participants. These changes were associated with narrower bid–ask spreads, reduced price dispersion, and an increase in retail investor participation, which comprised approximately 9% of the ILS-denominated corporate bond trading volume.

Improvements in electronic access, affordability, and simplicity are insufficient without transparency, which enables the identification of the most competitive prices and minimizes the risk of undisclosed costs. Therefore, pre- and post-trade transparency is a second barrier for retail investors entering the corporate bond market. The classic example in this regard is FINRA's Trade Reporting and Compliance Engine (TRACE), which mandates post-trade transparency by requiring market participants to report transactions within 15 minutes of execution (in 2002, this was initially set at 75 minutes, falling to 45 minutes in 2003, and to 15 minutes from 2005 onward). By publishing corporate bond trade prints within this shortened window, TRACE significantly

narrowed the information gap between investors and dealers. Bessembinder, Maxwell and Venkataraman (2005) examined the impact of TRACE's introduction on transaction costs for institutional trades and found that trade costs declined by 50% for bonds eligible for TRACE reporting and by 20% for non-eligible bonds. Goldstein, Hotchkiss and Sirri (2007) similarly document that increased post-trade transparency has either a neutral or positive effect on liquidity and bid-ask spreads, depending on the size of the trade. Despite the differences in their sample composition and methodologies, both studies concluded that the introduction of post-trade transparency via TRACE was associated with narrower bid–ask spreads and reduced trading costs, indicating improved market liquidity. Israel's experience adds a pre trade layer: TASE displays the full depth of the order book (LOB System), so that retail users see live bid–ask ladders rather than RFQ screens.

A complementary factor influencing investor participation is the cost of transaction, which is often shaped by the degree of electronification and market transparency. Even small commissions can deter retail investors who rebalance portfolios in modest sizes.

Edwards, Harris and Piwowar (2004), after analyzing transactions that took place in 2003, found that transaction costs in the corporate bond market varied significantly by trade size, with retail investors facing substantially higher costs than institutional investors. The average round-trip transaction cost for a representative retail trade of USD 20,000 was 1.38% of the price, compared to only 0.54% for a USD 200,000 institutional trade. This is the reverse of what is observed in equity markets, where execution costs generally rise with the size of a trade. Moreover, effective spreads in equity markets for retail-sized trades averaged less than 0.4%. The authors suggest that if high transaction costs deter retail participation, then cost reductions associated with increased market transparency could encourage greater retail involvement. A World Federation

of Exchanges (WFE) research paper titled "Centralizing Bond Trading" (Benos et al., 2022) attributes this inverted cost structure to the market power of dealers, enabled by the OTC nature of bond trading, which allows intermediaries to widen spreads, particularly for smaller trades. As a result, corporate bonds remain disproportionately expensive for retail investors, contributing to their limited participation relative to equities. The WFE research argues that the path forward lies in greater market transparency and broader electronification, both of which would reduce execution costs and level the playing field for retail investors.

While enhancements in accessibility and transparency are essential, they may not yield meaningful results if investors lack familiarity or remain skeptical. Brokerages serve an important function in promoting awareness and fostering confidence among investors. In their study, Gwalani and Bharati (2015) highlight that, despite various regulatory efforts, infrastructural improvements, and new guidelines, retail participation in India's corporate bond market remains below forecasted levels. They investigate the role of investor awareness as a key driver of retail participation in the secondary trading of corporate bonds in India. The study found that only 36% of interviewed investors were aware of corporate bonds as an investment instrument, and fewer than 10% invested in them. Notably, 48% of those who were aware of corporate bonds had received information from brokers, suggesting that brokers play a central role in shaping retail participation.

Brokerage firms sit at the intersection of four levers: they are the channel through which electronic interfaces, cost schedules, price data and educational content reach individuals. Markets that have succeeded in nurturing retail bond trading typically have brokers offering symmetric functionality: under such a system a client who can buy a stock in three clicks can also buy a domestic corporate bond in three clicks. Brokerage companies in Georgia already furnish near instant electronic access to foreign securities through platforms integrated into mobile apps, yet local bonds still require phone calls or emails for an order to be placed and there is some delay before an OTC trade is reported publicly.

Taken in combination, global evidence supports four broad propositions: (i) seamless digital access lowers search and negotiation costs that disproportionately burden small orders; (ii) real time or near real time transparency – both post trade and, where feasible, pre trade – strengthens price competition and reduces execution costs without impairing dealer willingness to supply liquidity; (iii) commissions matter more to retail than to institutions, aligning bond fees with equity norms encourages experimentation by new investors; and (iv) none of these levers succeed without proactive dissemination of product knowledge, and brokers are best placed to deliver that.

Conclusion

Based on this analysis, the following three findings have been identified:

First, liquidity in Georgian corporate bonds is highly uneven. The average (median) bond is rarely traded, yet a small subset – those bonds initially distributed to many investors – exhibit markedly higher trade counts and turnover ratios. Initial buyer breadth thus appears to be a useful early indicator of prospective liquidity. Examination of holding structures sheds additional light on liquidity patterns observed when analyzing initial buyer breadth.

Second, investor distribution varies by currency segment. GEL-denominated bonds are typically held by a small number of large local institutional investors, who generally retain these bonds until maturity. In comparison, foreign currency corporate bonds are owned by a more diverse group of investors, including retail participants. This ownership structure for foreign currency bonds is associated with higher liquidity measures such as trade frequency and turnover ratio.

Third, evidence from larger markets holds relevance for Georgia; research regarding TRACE in the United States and the LOB model in Israel demonstrates that seamless electronic access, transparent pricing, reasonable transaction costs, and purposeful engagement from market intermediaries collective-

ly enhance retail participation and improve liquidity indicators.

The data for Georgia are small, and causality can flow in both directions: liquid bonds may simply be better able to attract diverse investors. Nonetheless, the correlation between ownership diversity and trading activity is difficult to ignore. At a minimum, the evidence indicates that increasing retail participation may be instrumental in further advancing the market. Notably, the integration of seamless access and low-cost trading infrastructure has proven effective in other markets and could serve as a valuable benchmark as Georgia's market continues to evolve.

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INFORMATION FOR AUTHORS

Guidelines for Structuring Articles and Referencing

Article Structure:
1. Introduction
2. Literature Review
3. Theoretical Section – The economic model/theory on which the article is based
4. Data Analysis
5. Results and Discussion
6. Conclusion

The length of the article should be between 2,500 and 5,000 words.

Referencing Guidelines (Harvard Style):

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When using information from another author/authors/organization in the text, it is mandatory to indicate the author(s) and the year of publication of the referenced work. This applies both to paraphrasing (expressing someone else's ideas or findings in your own words) and direct quotations (copying the author's words exactly). These details should appear at the end of the sentence.

Examples: If there is one author – (McCurley, 2012), If there are two authors – (Brown and Taylor, 2021), If there are three or more authors – (Brown et al., 2021)

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When referencing books, the following details should be included in this exact order:
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Example: Smith, J. (2020). *Global Economics.* London: Routledge.

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c. Newspaper and Journal Articles
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National Statistics Office of Georgia. (2023). *Demographic data of the population.* [online] Available at: https://www.geostat.ge/ [Accessed 30 April 2025].