GEORGIA

SELECTED ISSUES

July 2025

This paper on Georgia was prepared by a staff team of the International Monetary Fund [as background documentation for the periodic consultation with the member country]. It is based on the information available at the time it was completed on July 7, 2025.

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GEORGIA

SELECTED ISSUES

July 2, 2025

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FOREIGN EXCHANGE INTERVENTION IN GEORGIA: AN APPLICATION OF THE INTEGRATED POLICY FRAMEWORK[1]

Georgia has experienced significant swings in both international and domestic demand for the lari in recent years. The IMF's Integrated Policy Framework (IPF) offers guidance on how Georgia did and should respond to these. Prudent monetary and macro-prudential policy by the NBG has limited the need for further policy responses to these shocks. But shallow foreign exchange (FX) markets in Georgia indicate that movements in the exchange rate can sometimes be inefficient—creating the potential for beneficial government FX intervention (FXI). This comes at a risk though and should be used cautiously. Reviewing the NBG's major FXI operations since 2020, we find that—within the modeling framework— interventions benefited the economy in the short run. However, given the low level of reserves and the institutional conditions of the NBG, the risks and long run costs of FXI likely outweighed the benefits.

A.   The Integrated Policy Framework

1.   As a small open economy, Georgia frequently experiences significant swings in international capital flows. Figure 1 shows Georgia's net financial account as a share of GDP, a reasonable measure of net capital flows. This has averaged -8 percent of GDP since 2010. However,

in this period we can see substantial movements in this account in short periods of time such as during the pandemic when there was a 13 percentage point deterioration as a share of GDP. Large swings in lari demand can have macroeconomic impacts on factors such as inflation, credit supply, and growth and may warrant a policy response. As Georgia is a highly dollarized economy, changes in domestic demand for FX can also exert similar pressures.

2.   As a country with an inflation targeting regime, Georgia should let the exchange rate be the primary means of adjustment to capital flow shocks. Exchange rate flexibility offers several benefits:

Figure 1. Net Financial Account
(In percent of GDP, SA)

Source: Haver Analytics, National Bank of Georgia.

(i)   It helps to stabilize the economy in response to some macro-economic shocks.

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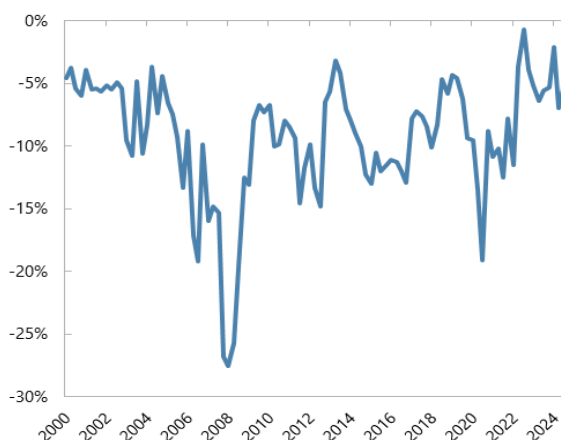
[1] Prepared by Will Abel (MCD), Rebecca Huang, Marcin Kolasa, and Jesper Linde (all MCM).

(ii)   It adjusts automatically and quickly, unlike slow and painful alternatives like domestic wage cuts.

(iii)   It frees other policy tools, allowing monetary policy to focus solely on inflation and avoiding costly reserve operations to stabilize the currency.

3.   However, the IPF illustrates that policy interventions may be warranted under certain conditions. The IPF provides a framework to help determine monetary policy, FXI, capital flow management measures (CFMs), macroprudential policy measures (MPMs), and fiscal policy ([Basu and others, 2020](#); [Adrian and others, 2021](#)) in combination. In the IPF, FXI is warranted only when a country exhibits one or more of: shallow FX markets, large private sector currency mismatches, or poorly anchored inflation expectations. When these are present, there may be justification to use policy to temporarily cushion the impact from *large* fluctuations in capital flows, for example by using FXI to reduce temporary exchange rate depreciation. However, such interventions should always be temporary and should not substitute for warranted macroeconomic adjustments.

4.   The remainder of this paper applies the IPF to Georgia by:

- Identifying factors that are present in Georgia and can create a case for policy intervention. FX market shallowness stands out as a key friction.

- Applying a quantitative model to assess the extent that these frictions and shocks impact Georgia's macroeconomy.

- Assessing the use of FXI by the NBG over the 2020-2024 period.

B.   Applicability of the IPF to Georgia

5.   In the IPF, policy intervention in response to capital flow, or domestic currency preference shocks, is only potentially justified when a country has either: shallow FX markets, large private sector currency mismatches, or poorly anchored inflation expectations. Each of these is explained in turn and the extent of their applicability to Georgia assessed.

Shallow FX Markets

6.   Shallow FX markets can cause movements in external financial conditions and exchange rates that don't reflect economic fundamentals. In deep markets, misalignments triggered by non-fundamental factors (like investor sentiment) create arbitrage opportunities. Investors step in, deploying capital until the exchange rate returns to its fundamental value. But in shallow markets, limited capital and investor attention mean these corrections don't occur. As a result, shifts in sentiment can cause large and lasting distortions in both exchange rates and the broader economy.

7.   Georgia's FX markets, while growing, are still small and exhibit substantial evidence of being shallow. Georgia's FX market is roughly USD 8 billion per month (Figure 2). This is over triple the size it was prior to Russia's invasion of Ukraine in 2022. Despite this expansion, the market is still

relatively small by international standards. Georgia's shallow market results in high and volatile bid-ask spreads and UIP premia (Figures 3 and 4). Figure 5 shows the strong negative relationship between capital in and outflows and the Uncovered Interest Parity (UIP) premia in Georgia—indicative of the sensitivity of the market to investor sentiments. The market depth of Georgia, using the model of Chen and others (2023), is estimated to be in line with other emerging market economies.

Figure 2. Monthly FX Purchases by Commercial Banks in Georgia
(Million, USD)
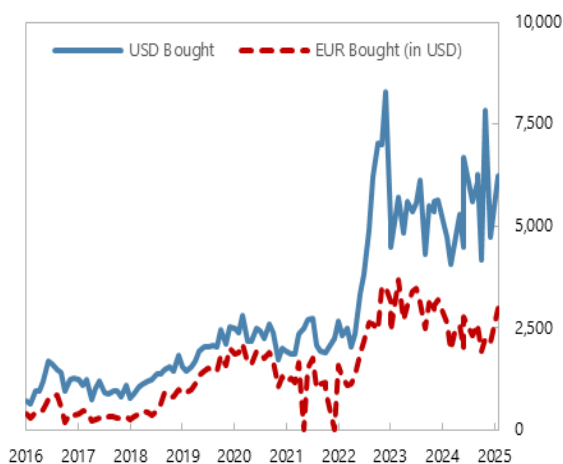
Source: National Bank of Georgia.

Figure 3. Average Monthly Bid-Ask GEL-USD Spread
(In percent)
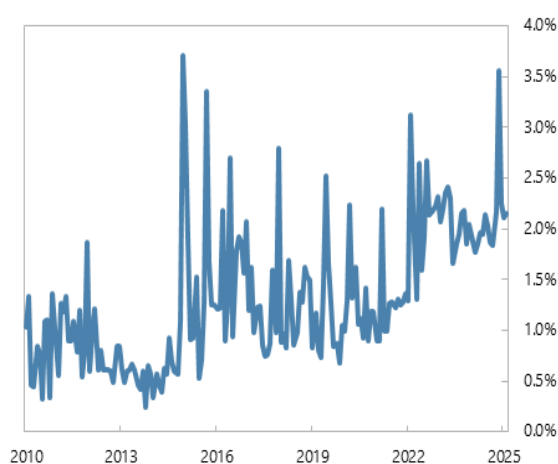
Source: Refinitiv Eikon.

Figure 4. Georgia's 12M UIP Premia
(In percent)
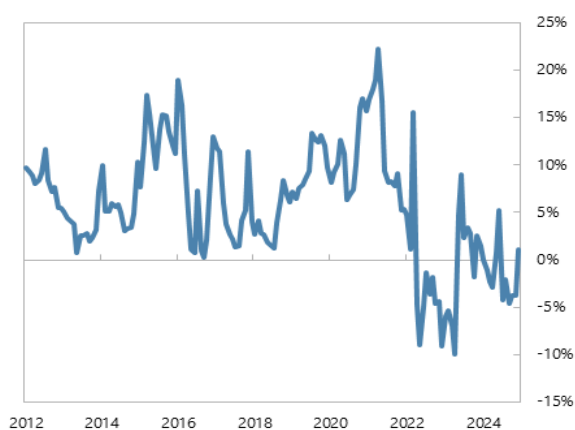
Source: Consensus Forecasts, Refinitiv Eikon.

Figure 5. Net Financial Account vs UIP Premia
(In percent)
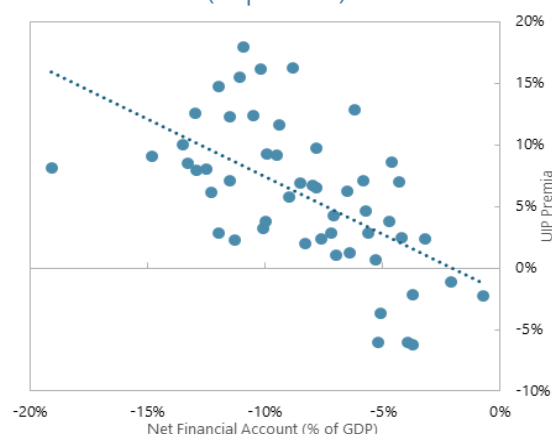
Source: Consensus Forecasts, Refinitiv Eikon, Haver Analytics.

8.   **Evidence suggests that shallow FX markets in Georgia account for a large degree of short-term exchange rate volatility.** It could be the case that a country has a shallow FX market, but in practice movements in the exchange rate are still primarily driven by fundamentals and as such there would rarely be cause to intervene. To test this, we can look at the sources of unexpected exchange rate volatility for Georgia. Figure 6 shows the forecast error variance decomposition for the nominal effective exchange rate in Georgia, coming from a small open economy SVAR for Georgia (April 2023 REO). This shows that investor 'risk appetite' shocks, a reasonable proxy for the type of 'non-fundamental' shocks we are concerned with, account for a huge degree of exchange rate volatility—around two-thirds at a one-year horizon, falling to about a third at the three-year horizon.

Figure 6. Forecast Error Variance Decomposition of Exchange Rate

Source: IMF staff calculations.
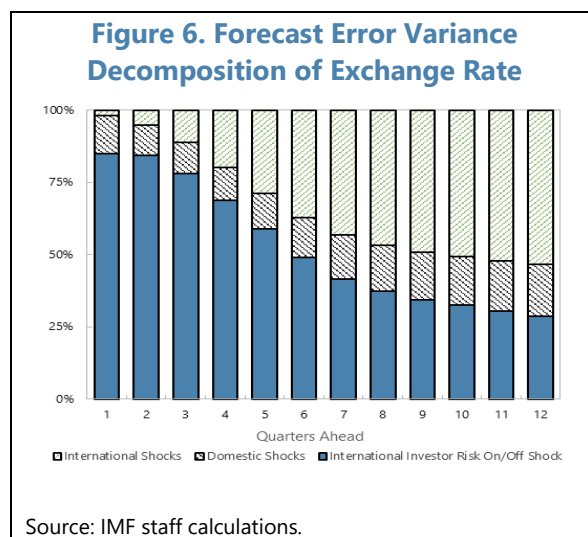
9.   **Putting this evidence together, Georgia has a relatively shallow FX market, broadly in line with the size of other emerging markets. In turn these shallow markets mean that the exchange rate can be, and is, influenced substantially by swings in investor sentiment that may not be optimal for Georgia.**

Currency Mismatch

10.   **Large exposures to exchange rate fluctuations through currency mismatches can exacerbate financial market distress and in some cases lead to full blown financial or currency crises.** Unhedged exposures to FX market movements mean that currency fluctuations can lead to difficulties in repayment. This is made worse by the fact that currency fluctuations can be driven by domestic shocks, meaning that at precisely the time a currency may be depreciating, households could be facing higher unemployment and lower incomes. If the extent of this exposure is large enough, and the financial system not sufficiently prepared for such a shock, this could lead to a financial crisis. In this instance, governments would clearly be justified to *temporarily* intervene with policy to try and limit the risk of financial contagion and amplification.

11.   **The extent to which exposures are across borders and which sector faces the exposure are important.** When exposure is not cross border, this means a movement in the exchange rate solely represents a transfer of wealth from one domestic actor to another. This can still create problems in the financial system, discussed below, but it limits to an extent the total impact on a country. Similarly, the sector facing the exposure is also important. Banks and sovereigns undergoing financial distress are more likely to amplify the shock to the economy when compared to firms and households. Sovereign foreign debt for Georgia is examined using the Market Access Countries Sovereign Risk and Debt Sustainability Framework and is outside the scope of the IPF.

12.   Georgia's private FX debt to GDP is broadly stable and most exposures are to domestic banks. Figure 7 shows Georgia's aggregate FX debt to GDP and breakdown by sector. Georgia's FX debt to GDP is currently around 40 percent of GDP, in line with its long-term average, and down from its pandemic peak of 64 percent. Due to the dollarized nature of the economy, firms and households, who take out mortgage and auto loans in USD, hold the largest amount of debt, at 23 percent and 10 percent of GDP respectively. This puts Georgian firms (17th) and households (6th) as some of the highest holders of FX debt in the world (as a share of GDP) when compared to these sectors in other countries. However, as can be seen in Figure 8, very little of this debt is cross border, with households effectively exclusively borrowing from domestic banks and with only 4.4 percent of firm debt as a share of GDP being owed internationally.

Figure 7. Private FX Debt to GDP
(In percent)

Figure 8. Cross Border Private FX Debt to GDP by Sector (In percent)

Source: BIS; International Financial Statistics, IMF.
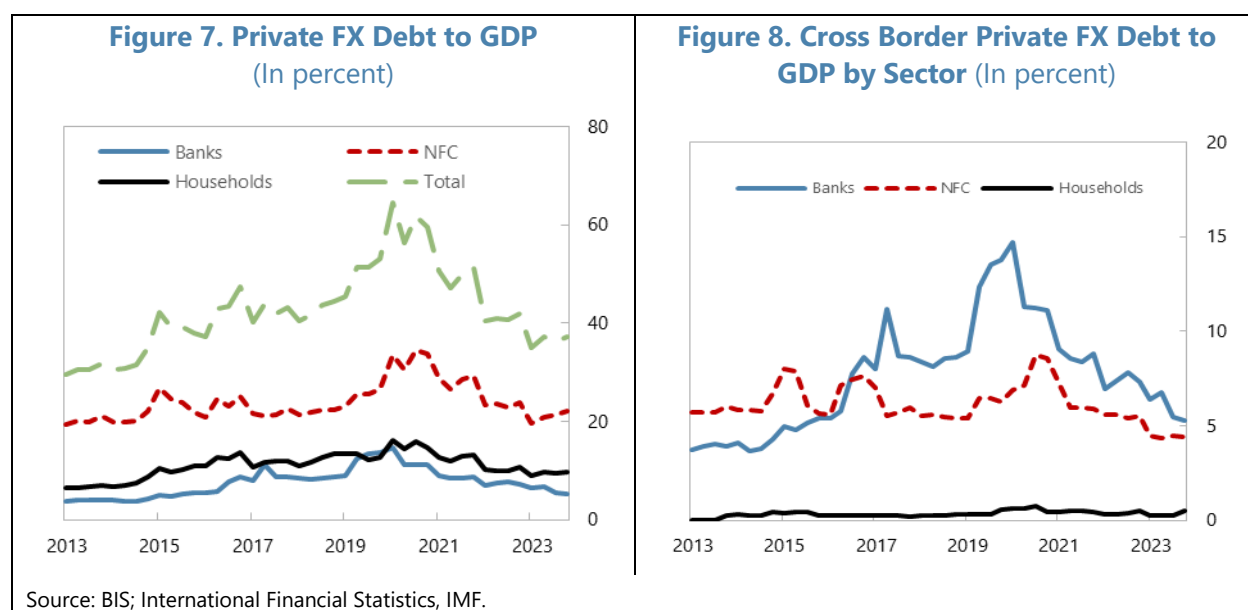
13.   Banking sector currency mismatch is limited and well hedged. Banking sector FX debt is high in Georgia compared to comparator countries (Figure 9). In part this is due to the dollarized nature of Georgia's economy, however it is also in part due to Georgia's relatively more developed financial system. Measured globally, Georgian bank FX debt to GDP is not even in the top 50 countries in the world. Georgia's banks also hold a high level of FX assets in the form of loans to Georgian households and businesses (Figure 10). This risk is then hedged, so that the net open position in FX of Georgian domestic banks is very small (Figure 11).

Figure 9. Bank FX Debt to GDP
(In percent)

Source: BIS; International Financial Statistics, IMF.
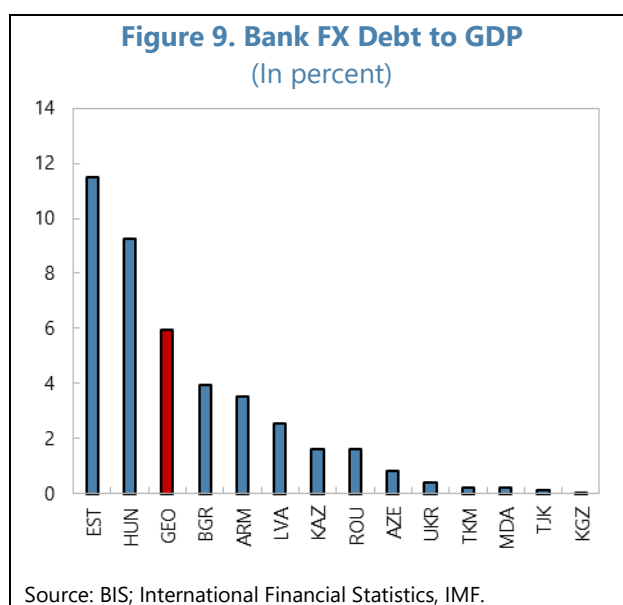
Figure 10. Georgian Banking FX Loans and Liabilities
(Billion, USD)
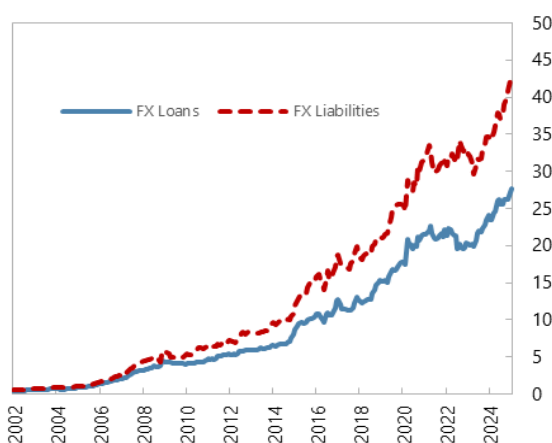
Figure 11. FX Positions as a Share of Regulatory Capital
(In percent)

Source: National Bank of Georgia.
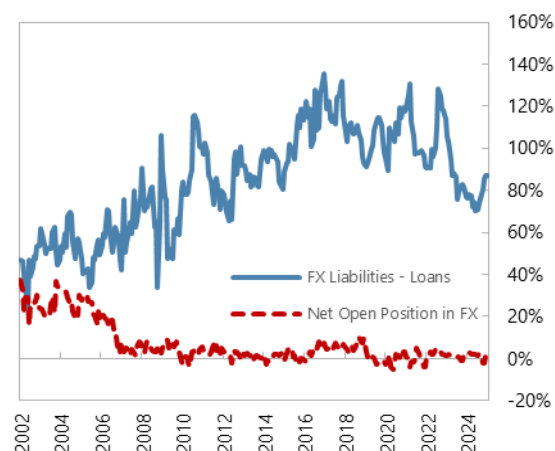
14.   This limitation in banking sector exposure has been achieved by a number of policies from the NBG to limit the risk of currency mismatch. Amongst other policies, banks are subject to stress tests with a large depreciation scenario, they are made to hold an additional capital buffer for exposure to currency risk and they are limited to a 20 percent open FX position (though most Georgian banks target 0 percent).

15.   Household exposure to currency movements is high, but also to some degree hedged. 66 percent of household deposits in Georgia are in FX, meaning that at least for some households, they are partially insured against movements in the exchange rate—especially if these are temporary. The NBG also limits FX mortgages to households, with a payment to income ratio limit of 20-30 percent of income (depending on income level), to limit household FX exposure. Further, using stress testing, the NBG also examines and seeks to limit the risk that household losses will be amplified through contagion to the financial sector. A range of other ongoing policies from the NBG are discouraging dollarization and will likely further bring down household FX exposure over time (see an overview of macroprudential policies in Annex VII of the 2024 Article IV Staff Report).

16.   Non-financial corporations in Georgia face higher exposures than households to exchange rate fluctuations but should be better able to manage the associated risk. Like households', firm deposits are highly dollarized (40 percent), providing some degree of temporary hedging. Firms also hold FX assets, representing around 40 percent of their cross-border debt (Figure 12), providing a degree of hedging (though the data doesn't allow us to see if the holders of FX assets are the same as the holders of FX debt). This does leave a reasonable degree of unhedged cross border exposure faced by firms—however they are more likely than households to be able to accurately assess the appropriateness of this for their business model.

17.   Despite being a highly dollarized economy with high levels of FX debt to GDP, prudent policy by the NBG has limited currency mismatch risk. Banks are well hedged and risks of contagion from the household and firm sectors are reasonably limited.

Anchored Inflation Expectations

18.   High volatility in inflation, driven by exchange rate volatility, may make it difficult for central banks to anchor inflation expectations and thus undermine their ability to achieve their inflation targets. Anchored inflation expectations are essential in the long run for a central bank to sustainably meet its inflation target. Particularly for countries without a long history of inflation targeting, anchoring expectations can be very difficult. If the exchange rate is highly volatile and this in turn impacts inflation and inflation expectations, then it may become necessary to smooth exchange rate fluctuations for a period of time until central bank credibility is in place and inflation expectations are well anchored.

19.   Inflation in Georgia is greatly affected by the exchange rate. Georgia is a small open economy, with 53 percent of its CPI basket either being imported goods or 'mixed' goods with domestic and foreign varieties. We estimate[2] that a 10 percent depreciation increases inflation by around 0.5 percentage points at a 2-year horizon (Figure 13).

Figure 12. NFC Cross Border FX Debt and Assets to GDP
(In percent)
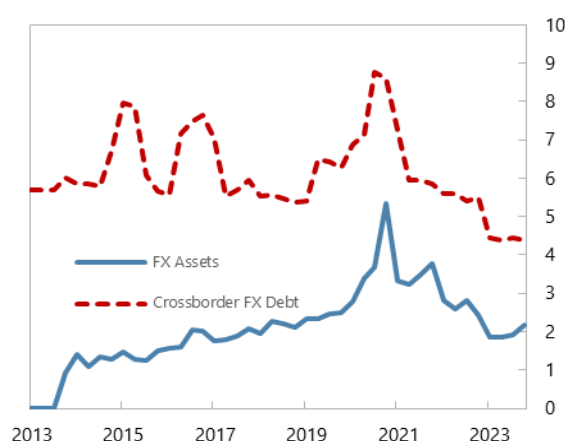
Source: BIS; International Financial Statistics, IMF.

Figure 13. Inflation Response to 10 Percent Depreciation

Source: IMF staff calculations.

20.   However, inflation *expectations* appear well anchored, even in response to large exchange rate swings. Figure 14 shows market and firm inflation expectations one year ahead since 2013. Outside of cyclical effects, these have been stable and converging towards the NBG's 3 percent target over time. This is despite large exchange rate fluctuations over this period and sizeable swings in headline inflation, peaking at 13.9 percent in 2021 before falling to a low of -0.1 percent in 2024. Empirically we test this more formally using local projection methods and find no impact of

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[2] This is done using a small open economy sign restricted VAR model. Exchange rate risk on-off shocks are identified by movements in the exchange rate, which have no other contemporaneous movement in other macro variables.

exchange rate shocks on inflation expectations in Georgia in the 2015-2024 period. This is likely in part to the efforts of the NBG in credibly committing to the inflation targeting framework—for example by raising the policy rate to 11 percent in 2022 in response to high and rising inflation, in part caused by a depreciation.

21. **Given the stability of inflation expectations in Georgia, even in response to very large swings in the exchange rate, there appears to be little justification for using FXI to stabilize the exchange rate on inflation expectations grounds.**

Figure 14. Inflation Expectations One Year Ahead
(Percent change, year-on-year)

Source: National Bank of Georgia, Consensus Forecasts.

22. **Robust macroeconomic and macroprudential policies have accordingly limited the use cases under the IPF for Georgian authorities to intervene in response to fluctuations in capital flows or domestic currency demand.** Inflation expectations are well anchored by credible monetary policy and macroprudential policy that has been used to examine and limit the consequences of FX fluctuations on the wider financial system. Shallow FX markets though, do mean that there could be occasions where authorities might beneficially use policy, primarily FXI, to respond to shocks.

C. Moving from Qualitative to Quantitative Assessment

23. **To add more structural and quantitative assessment of the analysis presented above, we use an estimated DSGE model based on Chen and others (2023).** This model is an empirical implementation of the QIPF model (Adrian and others, 2021), allowing a role for shallow FX markets and foreign investor risk appetite shocks. The assumption that FX traders have limited risk-bearing capacity helps generate realistic exchange rate volatility, and implies that sterilized FX interventions have real effects. This creates a role for occasional FX policy interventions that lean against inefficient fluctuations in the UIP risk premium. The model is estimated on quarterly Georgian data 2000-2023 with Bayesian likelihood techniques. The model's impulse responses to major shocks and policy instruments are broadly consistent with existing evidence for Georgia and has been discussed with NBG staff. The market shallowness of Georgia, as noted above, is estimated to be in line with other emerging market economies.

24. **Shallow markets are quantitatively important in understanding movements in the exchange rate in Georgia and its consequences.** Figure 15 shows the counterfactual real exchange rate which Georgia would have experienced from 2015-2024 had Georgia's FX markets been deep according to the estimated QIPF model. According to the model, Georgia would have experienced substantially lower exchange rate volatility. Figure 16 shows the role of 'risk appetite' shocks in actual real exchange rate movements since 2015. These are a close proxy to the type of 'non-fundamental' shocks that may justify FXI. From this we can see that these shocks were a substantial driver in the

real exchange rate over this period, particularly the depreciation in 2020 and the appreciation in 2022 following the outbreak of war in Ukraine. Taken together then, the QIPF model suggests that shallow markets and non-fundamental shocks are quantitatively important for understanding fluctuations in the exchange rate in Georgia.

Figure 15. Real Exchange Rate and Counterfactual under Deep Markets (Index, higher values = depreciation)	Figure 16. The Role of Risk Appetite Shocks in Real Exchange Rate Movements (In percent of deviation from 2018)

Source: Haver Analytics, National Bank of Georgia, IMF Staff calculations
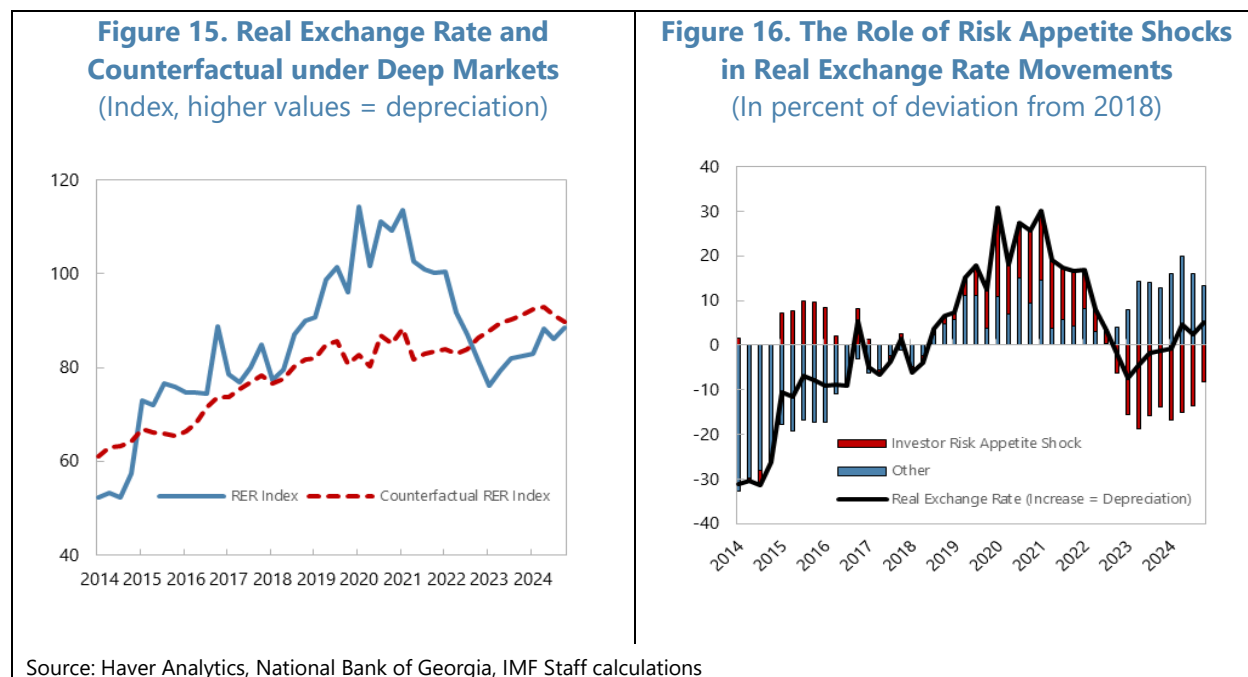
25.   FXI can help reduce 'non-fundamental' shocks to the economy. When the exchange rate has been impacted by changes in investor sentiment unrelated to the economy, targeted FXI can be used to reduce these distortions. Figure 17 shows the impulse responses to a risk appetite shock under deep markets (red), under shallow markets (black), and under shallow markets with offsetting FXI (blue). From this we can see how a risk appetite shock that under shallow FX markets would cause a 5 percent depreciation, can be alleviated with FXI, resulting in a smaller depreciation, less contraction in economic activity, lower inflation, lower interest rates, and smaller domestic spreads. Following FXI, after reserves are originally run down, they are rebuilt in following periods—this is always a temporary policy.

26.   There are many factors not captured by the model though, which are important to remember when considering policy evaluations. Figure 17 sketches the case for FXI to offset non-fundamental shocks. But in practice, it is difficult in real time to distinguish whether exchange rate movements are driven by fundamental or non-fundamental factors and thus the extent to which FXI is warranted. News shocks, such as revised expectations of productivity growth, could be conflated with investor risk appetite shocks. Furthermore, there are costs to extensively using FXI that are not captured in the model—for example the risk of impeding the development of the FX markets (as market participants might assume the central bank will limit exchange rate fluctuations using FXI).

Figure 17. Impulse Responses to a Global Risk Appetite Shock in the QIPF Model Under Differing FX Market Conditions
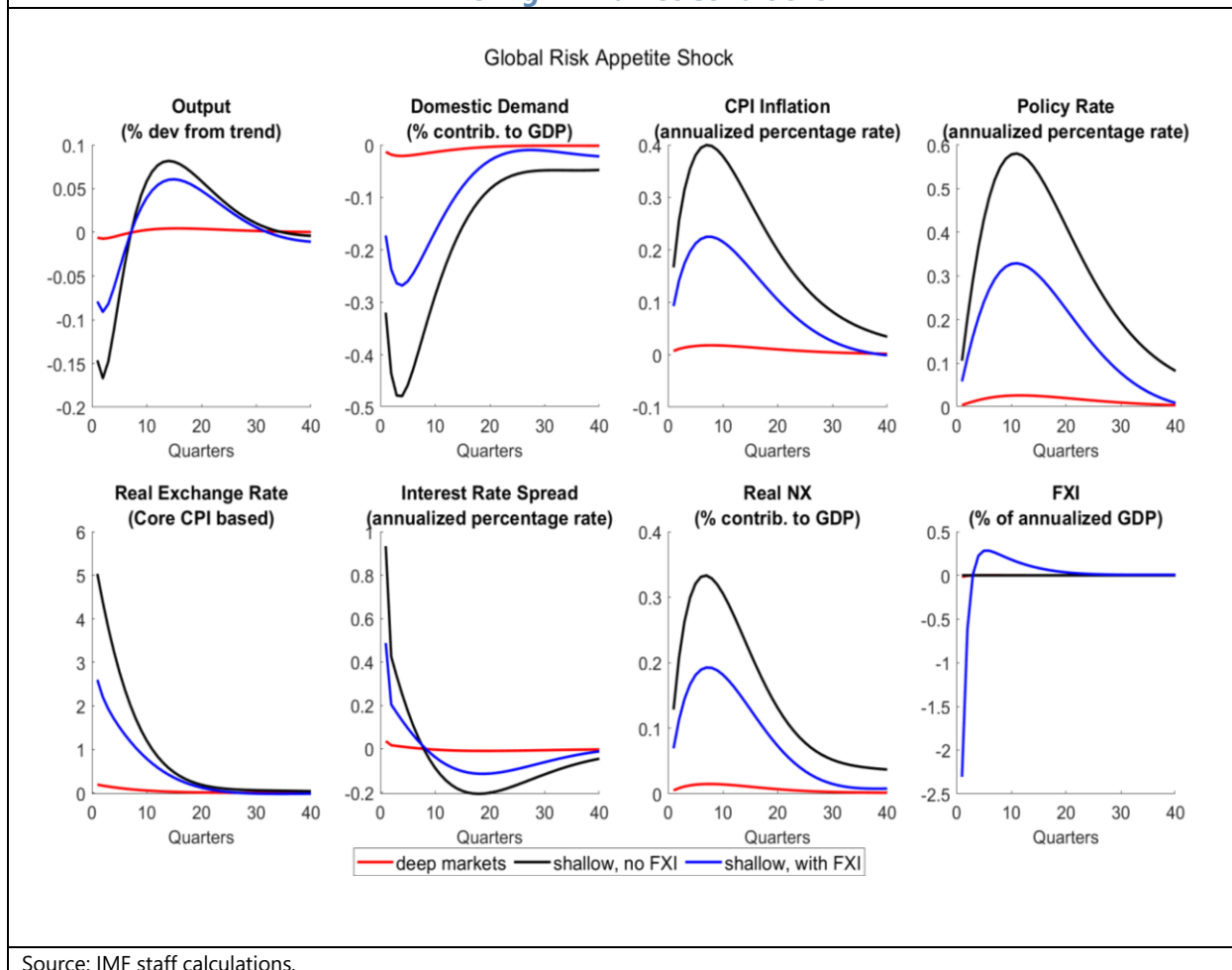
Source: IMF staff calculations.

27.   Institutional set-up is also key to effective use of FXI. When an inflation targeting central bank undertakes FXI, this may cause confusion about as to how they are using multiple instruments and to the role of the exchange rate. To prevent this, there must be (1) strong legal and operational autonomy at the central bank to prevent uncertainty as to the motives of the intervention and (2) clear communication about the goals of the policy. Without these factors present, intervention could impair the credibility of the central bank as it could cause market participants to question their independence or commitment to inflation targeting.

D. Policy Evaluation 2020-2024

28.   The NBG pursued active FXI in the 2020-2024 period. Figure 18 shows a proxy for FX intervention, measured as a share of GDP, largely based on Adler and others (2023) and augmented with additional public information from the NBG. By this measure, the NBG undertook extensive FXI in the 2020-2024 period. Initially selling dollars during the pandemic, before purchasing them in

2022 following the inflow of FX caused by the invasion of Ukraine. Again, the NBG sold dollars at the end of 2024 in response to pressure on the exchange rate around the 2024 Parliamentary elections.

These interventions were in response to what the NBG assessed to be non-fundamental shocks, which could have led to distortions due to shallow markets—they were not undergone for either price or financial stability concerns. In each of these instances, the shocks the NBG were responding to were large in a historical context (Figure 1). Over this period, we saw large fluctuations in UIP premia—reaching an all-time high of 22.3 percent in April 2021, before falling to a record low of -9.9 percent in April 2023.

Figure 18. Estimated FX Intervention
(In percent of GDP)
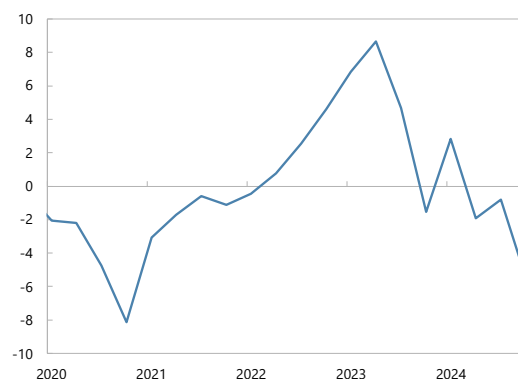
Sources: Adler and others (2021) and National Bank of Georgia.

29.   From 2020-2024, NBG FXI is associated with reduced inflation and interest rates and higher growth. Figure 19 shows the counterfactual path for the real exchange rate, inflation, and interest rates had the NBG done no FXI according to the QIPF model. In this counterfactual, the exchange rate would have depreciated further in 2020-21 and core inflation and interest rates would have been higher, peaking at 11 and 13.4 percent respectively. This is 1.5 and 2.4 percentage points higher than realized. This likely meant that Georgia was better off due to this policy in the short run. Importantly for the success of this intervention, FXI was used to smooth exchange rate movements, not halt them completely, and after the initial FXI in 2020, the NBG prudently rebuilt reserves.

Figure 19. Counterfactual under no FX Intervention

Real Exchange Rate
(In percent of deviation from steady state)

Real Exchange Rate
Counterfactual

Core Inflation (Annualized)
(Percent change, year-on-year)

Core Inflation (Annualized)
Counterfactual
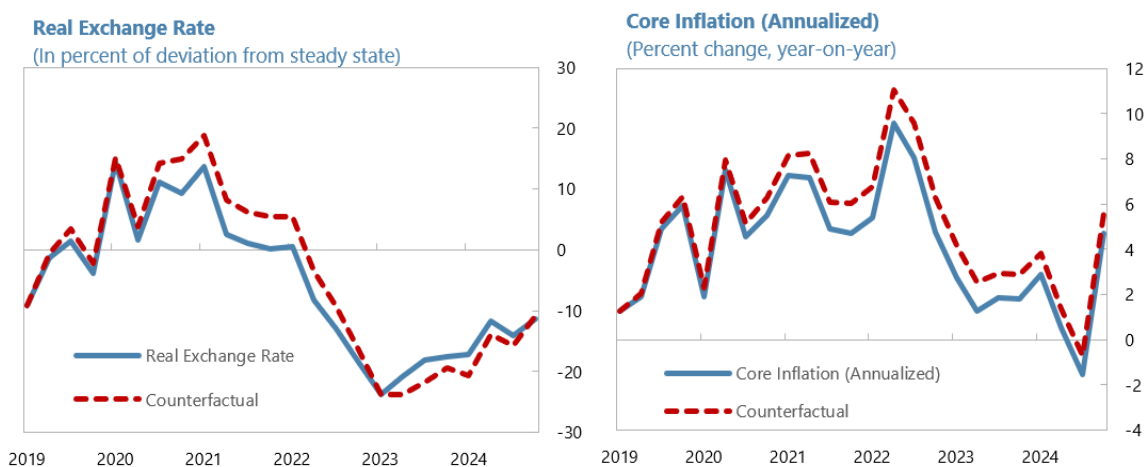
Source: Haver Analytics, National Bank of Georgia, IMF Staff calculations.

30.   The recent intervention in Q4 2024 was also well calibrated according to the QIPF model. Across September and October 2024, the NBG again undertook FXI and sold USD700 million, in response to downward pressure on the lari around the Parliamentary election. The QIPF model, which provides a best-case scenario for intervention, suggests that this intervention was appropriate—offsetting half of the estimated risk sentiment shock around the election (Figure 20). Only offsetting half of the shock is a prudent way of recognizing the inherent uncertainty of its magnitude and persistence, and the need to avoid depleting FX reserves rapidly.

Figure 20. Estimated Impact of Risk Appetite and FXI Shocks in 2024 Q4 on the Real Exchange Rate
(In percent, positive = depreciation)
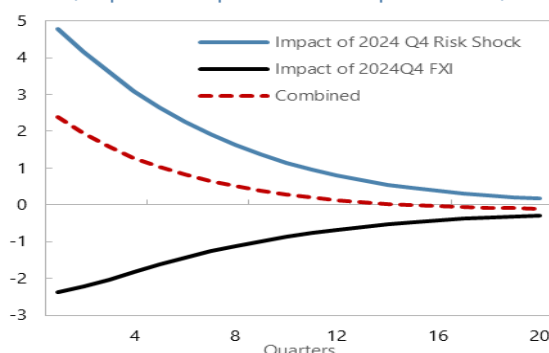
Source: IMF Staff calculations.

31.   While these periods of FXI in 2020 and 2024 were well calibrated according to the model, there are other important risk factors, which need to be considered when undertaking FXI. In particular, these are how well the model is correctly identifying shocks, the level of FX reserves held by the NBG, and the institutional conditions for FXI.

32.   Both the 2020 and 2024 shocks were difficult to identify contemporaneously. The logic of the QIPF model is that non-fundamental sentiment shocks can be beneficially offset by temporary FXI, but shocks to fundamentals should not be. Both the pandemic and Georgian elections, which were the cause of the shocks in these periods, contained fundamental and non-fundamental information. For example, while elections stir market sentiment, they also clearly communicate information about future economic policies. The QIPF model though does not explicitly contain 'news' shocks—information received by market participants about the future fundamentals of the economy. As such, these could plausibly be misidentified as sentiment shocks. Given this, greater caution should be used when using FXI under these circumstances.

33.   Reserves were also low in both situations and intervention in 2024 left Georgia with FX buffers well below the recommended level. Intervention in 2020 contributed to the low levels of reserves in mid-2022 (80 percent of the ARA metric), which were part of the rationale underlying the precautionary SBA program with the Fund. Furthermore, the ability of the NBG to rebuild reserves so easily following this period was driven by war-related inflows in 2022 that could

Figure 21. Total Reserves and Composition
(Million, USD)
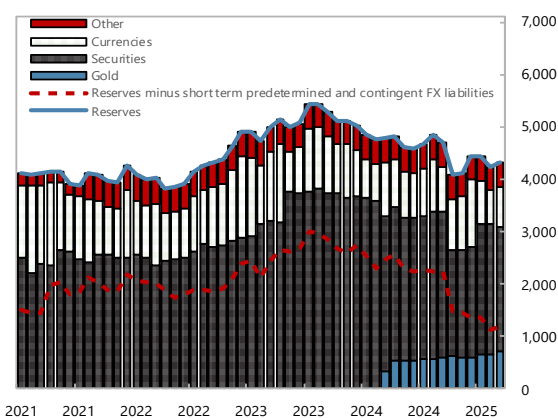
Source: National Bank of Georgia, Haver Analytics, and IMF staff calculations.

not have been foreseen. Intervention in 2024 Q4 lowered reserves by 15 percent (Figure 21), leaving buffers once again at 80 percent of the ARA metric at the end of 2024.

34.   Communication and the operational framework governing the use of FXI were also insufficient. For FXI to be undertaken successfully in the IPF framework, it has to be well communicated and implemented within a clear operational framework. This is important in a country such as Georgia, where fear of floating has been a concern. In both instances of FXI, market communication by the NBG was limited and did not sufficiently clarify how this aligned with the policy framework. In addition, use of FXI around politically sensitive events, such as an election, can reinforce the perception among market participants that the NBG is targeting other objectives, such as defending the exchange rate. A clearer operational framework on how and when FXI is implemented could reduce these perceptions.

35.   FXI by the NBG in the 2020-2024 period then appears to have been well calibrated to offset shocks, but likely did not sufficiently account for other risks. In particular, (1) the low level of reserves that the NBG held and (2) the risk of poorly communicated FXI undermining the credibility of the NBG's inflation targeting framework and independence. Repeated interventions of this type could also impede the development of FX markets in Georgia.

E. Conclusions and Policy Recommendations

36.   Sound policies in Georgia have limited the scope for policy intervention in response to capital flow and domestic currency preference shocks. Credible inflation targeting has anchored inflation expectations and prudent macro-prudential policy has limited the economy's exposure to FX mismatches.

37.   Georgia does have shallow FX markets and its exchange rate can be buffeted by fluctuations in investor sentiment. Georgia's small FX market means that temporary fluctuations in investor sentiment can move the exchange rate substantially, impacting factors like inflation, growth, and interest rates. Prudent and targeted FXI to partially offset the largest of these shocks, can at times be warranted.

38.   Georgia likely benefited in the short run from FXI policy in 2020-2024, however implementation should have been more transparent and cautious. Given the high uncertainty surrounding the drivers of exchange rate pressure, low reserve levels, and concerns about the NBG's independence, a more measured approach would have been warranted. This is particularly important given the short track record of Georgia's inflation targeting regime—the primacy of price stability as the objective of monetary policy and the key role exchange rate flexibility plays in this should not be called into question.

39.   To effectively operationalize FXI in the future, while remaining committed to an inflation targeting regime with a flexible exchange rate, several preparatory steps would be critical:

- Strengthening institutional independence by implementing all relevant IMF Safeguards Assessment recommendations, including moving to a collegial decision-making model.

- Having significantly higher reserve buffers from which to contemplate FXI operations.

- Developing a clear and transparent framework for (i) assessing the conditions under which FXI is justified (ii) defining implementation modalities consistent with a prudent risk management approach and (iii) effectively communicating the approach to the public.

References

Adler, Gustavo, Rui Mano, Kyun Suk Chang, and Yuting Shao, 2021, "Foreign Exchange Intervention: A Dataset of Public Data and Proxies," IMF Working Papers 2021/047, International Monetary Fund.

Adrian, Tobias, Christopher Erceg, Marcin Kolasa, Jesper Lindé, and Pawel Zabczyk (2021). "A Quantitative Microfounded Model for the Integrated Policy Framework". IMF Working Paper No. 21/292. Washington, D.C.: International Monetary Fund.

Basu, Suman, Emine Boz, Gita Gopinath, Francisco Roch, and Filiz Unsal (2020). "A Conceptual Model for the Integrated Policy Framework". IMF Working Paper No. 20/121. Washington, D.C.: International Monetary Fund.

Chen Kaili, Marcin Kolasa, Jesper Lindé, Hou Wang, Pawel Zabczyk and Jianping Zhou, (2023). "An Estimated DSGE Model for Integrated Policy Analysis". IMF Working Paper No. 23/135. Washington, D.C.: International Monetary Fund.

INFORMALITY IN THE GEORGIAN ECONOMY[1]

A substantial share of workers in Georgia are employed in the informal sector, weighing on tax revenue and likely productivity growth. However, contrary to common perceptions, we find that informality in Georgia is below peer countries once income levels are accounted for, and the policy framework is well designed to disincentivize it. As Georgia continues to grow, informality is likely to fall naturally.

1.   Informality, activity outside of the formal regulated economy, has long been identified as a large structural issue for Georgia. World Bank research (Kaufman and Kaliberda, 1996) used electricity consumption in Georgia to estimate that in 1996 between 60 and 70 percent of the economy was informal, compared to an average of around 20 percent for Central and Eastern European nations. These concerns persist to date, with the European Commission identifying the 'high level of informal employment' (European Commission, 2023) as one of the key barriers facing Georgia in having a fully functioning market economy. Recent World Bank estimates put informality in Georgia as high as 62 percent (World Bank, 2022a). This paper outlines the following questions: what is informality? How does it affect economic outcomes? How can we estimate it in Georgia? And what further policies, if any, should the Georgian authorities pursue to decrease it?

A.   What is Informality?

2.   Informality exists at both the firm and worker level. *Firm-level informality* refers to enterprises operating outside the legal and regulatory framework—typically unregistered, untaxed, and noncompliant with labor or business regulations. *Worker-level informality* involves individuals employed without formal contracts or access to social protection, including informal workers within both formal and informal firms. This broad definition includes many subsistence farmers, which is particularly relevant for Georgia (as discussed below).

3.   Informality can also be viewed along *extensive* and *intensive* margins. The *extensive margin* concerns whether a firm is informal in its entirety (e.g., unregistered), while the *intensive margin* captures informal practices within otherwise formal firms—such as employing workers "off the books." Similarly, many formally employed individuals may supplement their income with informal "side" jobs.

4.   Informality often reflects the institutional and economic constraints faced by firms and workers. Firms may remain informal because formalization is prohibitively difficult—due to burdensome regulations, weak contract enforcement, or limited access to finance—or because they seek to avoid high taxes and compliance costs. Workers may turn to informal employment in the face of rigid labor markets, limited formal job creation, or high payroll taxes.

5.   The cost of informality—and the appropriate policy response—depends on who is informal and why. There are broadly three perspectives on informal firms: (i) *constrained*

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[1] Prepared by Will Abel (MCD).

entrepreneurs, held back by barriers such as regulation or lack of finance; (ii) *unfair competitors*, who avoid taxes and regulation despite having the capacity to formalize; and (iii) *economic survivors*, operating informally out of necessity due to low skills and limited opportunities. If informality stems from the first case, reforms to lower barriers can unlock growth. If it stems from the second, stricter enforcement may be warranted. If it reflects the third, however, informality is unlikely to respond to either approach. In Georgia's case, we argue below that the latter two explanations are more relevant for most observed informality.

B.   What is the Aggregate Level of Informality in Georgia?

6.   Informality can be measured using direct or indirect approaches. Direct methods, such as surveys of firms or workers (and occasionally tax audits), allow not only the estimation of the level of informality but also characterizing its nature. In contrast, indirect methods infer informality using models that draw on input variables believed—on theoretical grounds—to be associated with informality, either as causes or symptoms.

7.   Direct measures suggest that informality in Georgia is relatively low compared to other countries at similar income levels, whereas indirect measures suggest it is very high. Figure 1 benchmarks Georgia against other countries using three measures of informality. Firm-level data from the World Bank Enterprise Survey (WBES) report low informality—just 12 percent of firms in 2023 said that informal competition was a major or severe constraint. Labor market-based estimates show informality rates that are high but broadly in line with international norms for Georgia's GDP per capita. In contrast, the World Bank's MIMIC (Multiple Indicators, Multiple Causes) model, which estimates informality indirectly, puts Georgia's informal economy at 62 percent of GDP—among the highest in the world.

Figure 1. Measures of Aggregate Informality

Source: World Bank Development Indicators, World Bank Informality Database, and International Labor Organization.
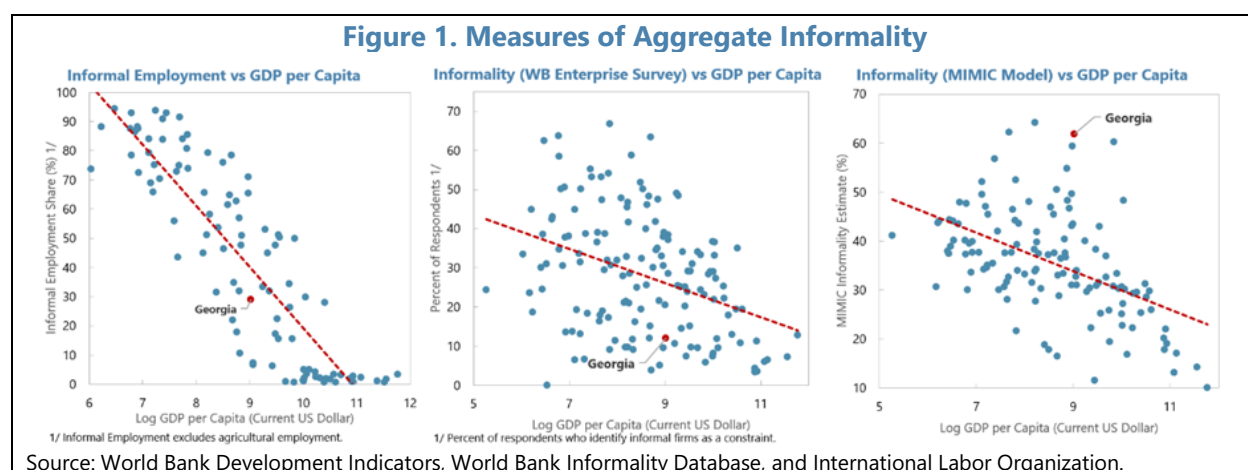
8.   Informality was almost certainly higher in Georgia in the 1990s and early 2000s. While present-day measures vary, both direct and indirect indicators point to high levels of informality in the past. Under the USSR, Georgia was noted for having perhaps the most visible and tolerated secondary labor market in the Soviet Union. During the post-Soviet transition, informal activity

remained widespread: in 1998, more than half of all employed persons were working informally, falling to 37 percent when excluding agriculture. As late as 2008, over half of firms in the WBES reported facing informal competition, and a quarter cited it as a major constraint. The World Bank's MIMIC model estimates that around two-thirds of Georgia's economy was informal from 1993 to 2008.

9.   A range of reforms in the early 2000s likely helped to reduce informality significantly. This period saw improvements in governance, tax reform, and regulatory simplification. Georgia moved away from distortionary labor taxes and toward more easily enforceable taxes like VAT (Vegh and Vuletin, 2015). Akitoby (2018) finds that the introduction of electronic tax filing, which lowered compliance costs, helped reduce employment informality by 8 percentage points between 2004 and 2011. These changes were supported by broader improvements in the business and regulatory environment that also contributed to the overall decline in informality (World Bank, 2022b). The timing of these reforms aligns with the decline in informality captured by direct measures, lending credibility to their results.

10.   Indirect models of informality, particularly MIMIC models, have well-known limitations and should be used with caution. These models estimate informality as a latent variable inferred from observable indicators (e.g., tax revenue, self-employment rates, electricity use). However, they are criticized for relying on unrealistic assumptions, lacking external validation, and requiring external calibration (Buehn and Schneider, 2018; Feige, 2016). For these reasons the OECD warns against over reliance on indirect models to measure informality and to focus on direct measures as much as possible (OECD, 2002). In the context of Georgia, these issues are particularly pronounced:

- *Model assumptions:* MIMIC models typically assume that the structural relationships between causes of informality, the latent variable itself, and observed indicators (such as GDP or labor force participation) are consistent across countries. In Georgia's case, such assumptions are questionable: it is a highly dollarized economy with a distinct demographic and institutional structure. Variables like currency growth and labor force participation—often used as standard indicators—likely behave differently in Georgia than in other economies.

- *Lack of external validation:* These models are rarely validated against direct survey data or administrative sources, making it difficult to assess the accuracy or relevance of the estimates they produce.

- *External calibration dependence:* MIMIC models estimate relative changes in informality over time, but the absolute level must be anchored using external data—typically from other studies. In the World Bank's informality database, most of the variation in MIMIC-based estimates from 1993–2020 is cross-sectional rather than time-series, meaning that the results are heavily driven by the initial calibration, not the internal dynamics of the model. Moreover, because only a handful of countries are used for calibration—often based on data from the late 1990s or early 2000s—Georgia's estimates are indirectly inferred from these anchor countries. This undermines the credibility of the estimates for Georgia and similar countries that are not directly calibrated.

11. **More recent work has addressed some of these issues by incorporating direct data into broader modeling frameworks.** Yao (2024) shows that the MIMIC model is a restrictive version of a dynamic factor model. Using this more general approach and integrating direct survey data (such as the WBES), they find that informality in Georgia has declined by over 10 percentage points since 2008, reaching around 20 percent of GDP (Figure 2). This places Georgia below most emerging markets, though still above most advanced economies. Rising GDP per capita is identified as the primary driver of this decline.

Figure 2. Comparison of Informality Estimation
(In percent of GDP)

Source: Yao (2024), World Bank Enterprise Survey (WBES).
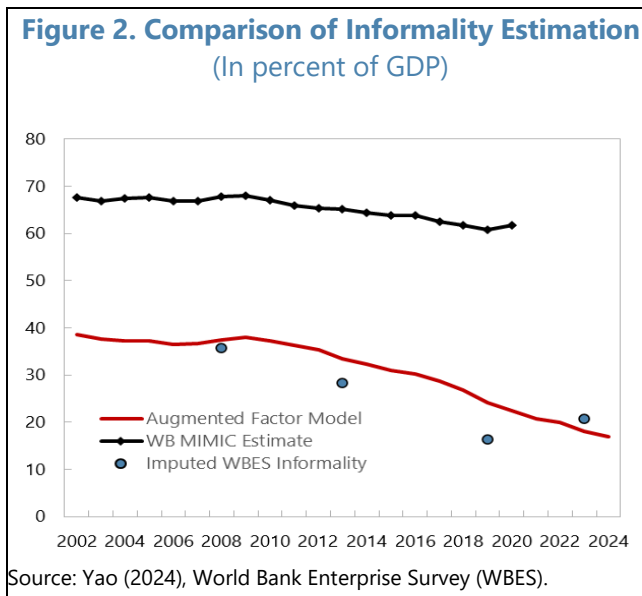
12. **Taken together, the best available evidence suggests that Georgia's aggregate informality is not unusually high relative to its peers.** The most credible measures—particularly firm-level surveys—indicate relatively low levels of informality. These measures align with the timing of reforms that would be expected to reduce informality. While older MIMIC-based models suggest high levels, their methodological flaws are well-documented. When these flaws are addressed through improved modeling and incorporation of direct data, the results converge with direct measures.

C. What Does Informality Look Like in Georgia?

13. **While overall levels of informality in Georgia are not high, there are still notable pockets where it persists.** Data from the WBES indicate that informal competition is especially prevalent in food manufacturing and hotel services. In these sectors, 30 and 19 percent of firms, respectively, cited informality as a major constraint. Food manufacturing is a common sector for informal activity, as many types of processing (e.g., baking) can be done at home. Informality in the hotel sector is likely linked to the rise of short-term rentals through platforms like Airbnb, which may not align closely with traditional notions of informality.

14. **Informal workers in Georgia, excluding those in agriculture, are heavily concentrated in construction, tend to work in temporary roles, often for very small firms, and typically receive lower pay.** Figure 3 presents data from the Georgian Labor Force Survey, highlighting the characteristics of non-agricultural informal workers. Compared to their formal counterparts, informal employees are more likely to be middle-aged, male, and urban-based. They are concentrated in sectors such as construction, manufacturing, and retail. Informal workers often lack written contracts, are employed by micro-enterprises, and tend to expect their current job to last for less than a year. Educational attainment is somewhat lower among informal workers, though 27 percent still report having completed tertiary education. A Mincer-type regression (Mincer, 1974) shows that, after controlling for observable characteristics, informal workers earn approximately 13 percent less than

formal employees. This wage gap is based on reported net earnings, suggesting it may already reflect the absence of income tax contributions. If so, this is evidence that these workers are likely gaining little through working informally.

Figure 3. Characteristics of Formal vs Informal Workers in the Georgian Labor Market

Gender and Urbal Rural Divide

Percent Self Employed

Highest level of Educational Achievement

Age Distribution

Sector of Employment

Expected Work Duration with Current Employer

Number of Employees at Same Firm

Contract Basis

Source: GEOSTAT Labor Force Survey.

15. **Georgia also has a significant number of subsistence farmers, whose circumstances differ meaningfully from non-agricultural informal workers.** Approximately 400,000 Georgians engage in subsistence farming. Including them raises the overall informality rate from 27.6 percent of non-agricultural workers to 52 percent of the total workforce. By some definitions, these individuals are considered informal workers due to the absence of contracts and social protections. However, they might alternatively be classified as outside the labor force or as unemployed if they are actively seeking formal employment. Crucially, subsistence farming has distinct causes and consequences, and from a policy perspective, should be addressed separately from other forms of informality.

D. What Policies Can Georgia Pursue to Lower Informality Further?

16. **Georgia is unlikely to achieve significant further reductions in informality through regulatory easing.** The country already performs well on the World Bank's Business Ready indicators, particularly on business entry and location. It outperforms many European comparators in the regulatory framework and operational efficiency pillars of these topics. These high scores suggest that burdensome regulation is not a major obstacle to formal business creation in Georgia. Moreover, research shows that policies aimed at reducing the costs of formalization often have limited or no impact (Ulyssea, 2020).

17. **Targeted enforcement could help reduce informality in specific sectors, such as construction.** Empirical evidence suggests that increased enforcement (greater resources given to detection and penalization of informality) can be an effective policy tool for encouraging formalization (Ulyssea, 2020). While enforcement incurs costs, these should be weighed against the potential gains from increased compliance. In sectors like construction, where informality remains relatively high, enhanced enforcement efforts may be justified—though even advanced economies struggle to collect tax revenue from sectors such as construction and hospitality. One targeted policy to reduce informality which could be effective—particularly in cash-intensive and lightly regulated sectors—is the increased application of AML/CFT tools such as risk-based regulation and supervision, customer due diligence, and beneficial ownership transparency. These measures support financial oversight and integrity while reinforcing formalization efforts through improved regulatory coordination. However, Georgia has a relatively efficient tax system (for example scoring higher than many European countries on VAT C-efficiency), such that while some gains might be made from lowering informality, they may be limited in terms of additional tax revenue.

18. **Informality stemming from subsistence farming requires a different policy response—namely, improving agricultural productivity and supporting structural transformation.** As noted in the staff report for Georgia's 2024 Article IV consultation, agricultural productivity remains low compared to peers. One contributing factor is incomplete land registration, which impedes the transfer and consolidation of land. Continued progress on land reform, which has accelerated over the past two years, will make it easier for households to sell land and transition into formal, higher-paying employment elsewhere.

19. **Economic growth itself is likely to reduce informality over time.** Informal firms tend to be small and unproductive; as the economy grows, more opportunities arise in larger, more efficient

businesses. Rising urban incomes can pull workers out of subsistence farming, while consumer preferences will increasingly shift toward the quality and standards associated with formal enterprises—such as supermarkets over informal food vendors.

E. Conclusion

20.   While informality in Georgia is below peers with similar income levels, there is scope to further reduce it through targeted measures in specific sectors. Informality has declined substantially due to governance and tax reforms, as well as sustained economic growth. Today, Georgia likely has lower informality than most comparable emerging markets. High informality estimates from indirect models should be viewed with skepticism. Remaining informal activity is concentrated in specific areas such as construction, food manufacturing, and subsistence farming. Sector specific measures will help reduce informality in these sectors, along with sustained economic growth.

References

Akitoby, Bernardin, Anja Baum, Clay Hackney, Olamide Harrison, Keyra Primus, and Veronique Salins. 2018. Tax Revenue Mobilization Episodes in Emerging Markets and Low-Income Countries: Lessons from a New Dataset. IMF Working Paper WP/18/234. Washington, DC: International Monetary Fund.

Bühn, Andreas and Friedrich Schneider. 2018. "Shadow Economy: Estimation Methods, Problems, Results and Open Questions." Open Economics 1 (1): 1–29.

Elgin, C., M. A. Kose, F. Ohnsorge, and S. Yu. 2021. "Understanding Informality." CERP Discussion Paper 16497, Centre for Economic Policy Research, London.

European Commission. 2023. Georgia Report 2023. Enlargement Package, November 8. Directorate-General for Neighbourhood and Enlargement Negotiations, Brussels. Available at: https://enlargement.ec.europa.eu/georgia-report-2023_en.

Feige, Edgar L. 2016. "Reflections on the Meaning and Measurement of Unobserved Economies: What Do We Really Know about the 'Shadow Economy'?" Journal of Tax Administration 2 (1): 5–41.

Kaufmann, Daniel, and Aleksander Kaliberda. 1996. "Integrating the Unofficial Economy into the Dynamics of Post-Socialist Economies: A Framework of Analysis and Evidence." In Economic Transition in Russia and the New States of Eurasia, edited by B. L. Kaminski, 81–120. Armonk, NY: M.E. Sharpe.

Mincer, Jacob. 1974. Schooling, Experience, and Earnings. New York: National Bureau of Economic Research.

OECD. 2002. Measuring the Non-Observed Economy: A Handbook. Paris: Organisation for Economic Co-operation and Development.

Ulyssea, Gabriel. 2020. "Informality and Inequality." Annual Review of Economics 12: 525–546.

Vegh, Carlos A., and Guillermo Vuletin. 2015. "How Is Tax Policy Conducted over the Business Cycle?" American Economic Journal: Economic Policy 7 (3): 327–370.

World Bank. 2022a. Georgia Country Economic Memorandum: Charting Georgia's Future. Synthesis Report. Washington, DC: World Bank.

World Bank. 2022b. The Long Shadow of Informality: Challenges and Policies, 2022. Washington, DC: World Bank.

Yao, Jiaxiong. 2024. Unveiling the Informal Economy: An Augmented Factor Model Approach. IMF Working Paper WP/24/110. Washington, DC: International Monetary Fund.

IMPACT OF EMIGRATION ON THE GEORGIAN LABOR MARKET[1]

Emigration poses a significant challenge to Georgia's labor market, contributing to labor shortages and population aging. However, it also offers economic benefits through remittances and skill transfers from returning migrants. To mitigate negative impacts and harness benefits, Georgia should: (i) invest in vocational education and training to develop and retain talent; (ii) promote financial literacy and mobilize the diaspora to use remittances productively; (iii) encourage return migration through reintegration and entrepreneurial support; (iv) attract foreign talent through tailored immigration policies and partnerships.

A. Introduction

1.   Emigration in Georgia surged after the Soviet Union's collapse, and although it has slowed, it remains persistent. While similar patterns occurred in other former Soviet Union countries,[2] the impact has been more pronounced in Georgia. Between 1994 and 2001, net migration from Georgia was around 1 million people. By 2024, this number reached 1.3 million, or 30 percent of the population (Figure 1).[3]

Figure 1. Georgian Population and Emigration

Source: GEOSTAT.

Figure 2. Net Migration to Georgia by Age

Source: GEOSTAT.

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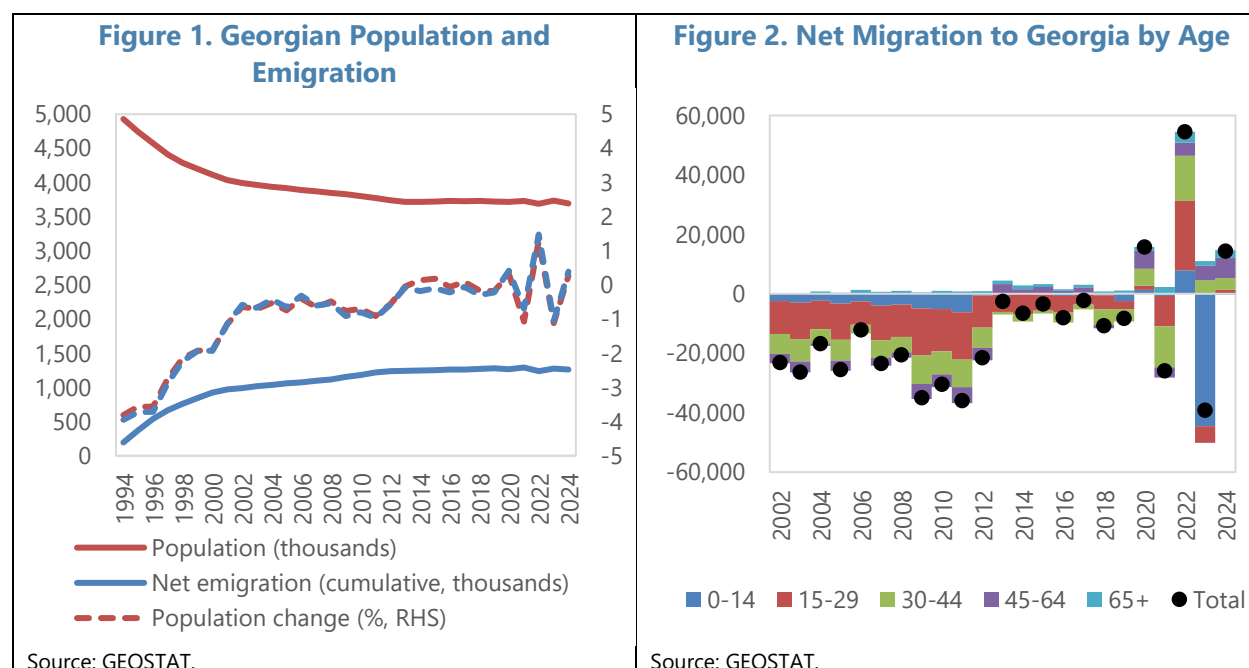
[1] Prepared by Elif Ture (MCD).

[2] See the IMF Staff Discussion Note (2016) on Emigration and Its Economic Impact on Eastern Europe.

[3] Migration is hard to measure accurately, especially for undocumented and seasonal flows. Thus, available data may be incomplete and show discrepancies among sources and stock/flow measures.

2.   Large scale emigration has contributed to a declining and aging population. Between 1994 and 2014, Georgia's population steadily declined, primarily due to outward migration (Figure 1). Although the population has stabilized at around 3.7 million in the past decade, persistent emigration, particularly among young adults (Figure 2), combined with adverse demographic trends such as a declining birth rate and a low fertility rate below replacement level, has led to a rise in the median age (Figure 3) and a decrease in the working age population (Figure 12).

Figure 3. Demographic Trends in Georgia

Fertility rate (births per woman)
Replacement rate
Birth rate (per 1000 people)
Death rate (per 1000 people)

Source: GEOSTAT.

Figure 4. Georgian Emigrant Flows

Russia   OECD

Source: OECD International Migration Database and Russian Statistical Bureau.
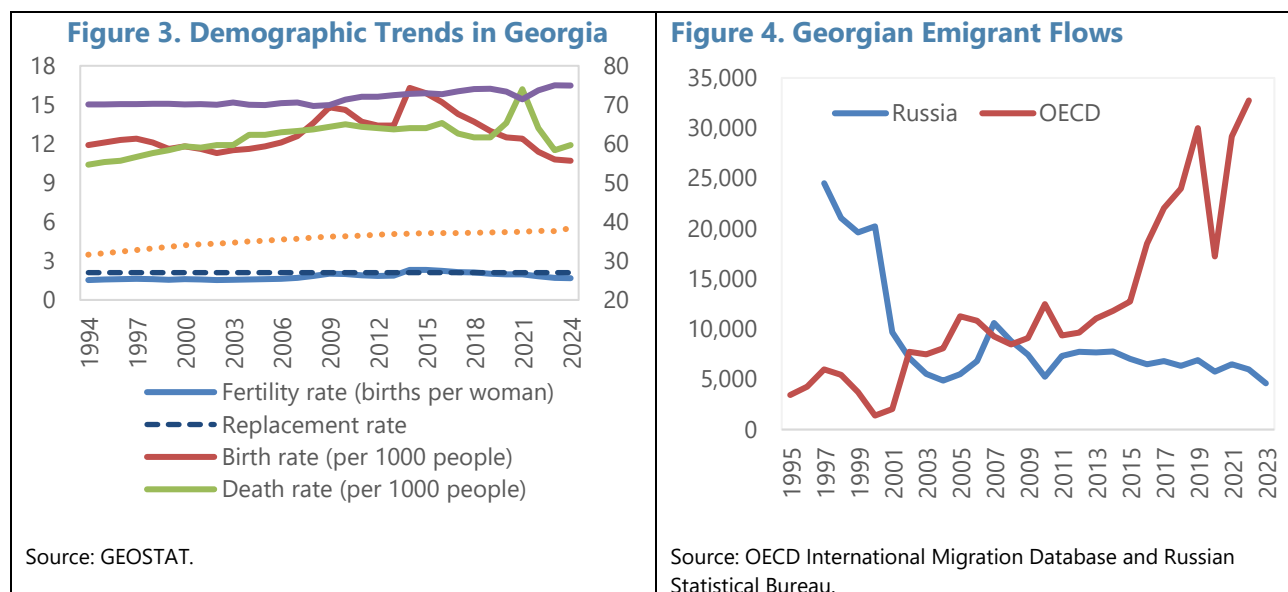
3.   Emigration likely contributed to labor shortages, which is cited as the primary barrier to expansion for Georgian businesses in recent years. The EU Business Climate Survey (2024) reveals that many businesses abstain from launching new projects or opening new branches due to a lack of available workers. Two thirds of surveyed businesses cited high emigration rates as the most important factor depleting the local labor pool, hampering their growth potential and operational capabilities.

4.   However, emigration has also brought benefits through remittances that bolster household incomes and consumption, and skill and knowledge transfers from returning migrants. In the past decade, returning migrants amounted to two thirds of those emigrating (Figure 19) and migrant remittances averaged over 12 percent of GDP (Figure 15). The skills and experiences the returning migrants bring and investments enabled by migrant remittances, including in education and healthcare, can enhance productivity and innovation within the local economy.

5.   This note reviews emigration trends and labor market impacts in Georgia and discusses policy options to mitigate adverse effects and leverage potential benefits. It updates the OECD (2022) analysis on Georgian emigrants and examines the labor market and growth consequences of emigration due to human capital loss, while also considering income effects of remittances and human capital boost through return migration. While the data show brain drain has been limited in Georgia relative to peers, the authorities could improve domestic labor market conditions to develop

and retain talent, promote return migration to expand the local labor pool, incentivize the use of remittances to enhance physical and human capital, and develop policies and partnerships to attract foreign talent.

B. Trends of Emigration from Georgia

6. **Following an initial wave of migration to Russia in the 1990s, Georgian emigrants have predominantly relocated to Europe.**

- Data from the Russian Statistical Bureau indicates that gross legal migration from Georgia to Russia declined from about 25,000 people in 1997 to fewer than 5,000 in 2023 (Figure 4). From 1997 to 2023, this migration totaled over 240,000 people, representing 7 percent of Georgia's current population.

- In contrast, OECD migration statistics reveal an opposite trend. Gross legal migration of Georgians into OECD countries increased from 3,500 people in 1995 to 33,000 in 2022 (Figure 4). Between 1995 and 2022, this migration totaled around 340,000 people, or 10 percent of Georgia's population. Around 60 percent of these migrants moved to Western Europe, with Germany, Italy, Spain, and France receiving majority of them (Figure 5). Outside of Western Europe, Türkiye, Poland, Greece, and the United States also received around a third of these emigrants.

Figure 5. Georgian Emigrant Destinations,1995-2022	Figure 6. Stock of Georgian Emigrants Abroad
Source: OECD International Migration Database. Data for Greece (2012-22) are from Eurostat (First Residence Permits).	Source: United Nations, International Migrant Stock 2020 (UN, 2020) and International Migrant Stock 2024 (UN, 2024).
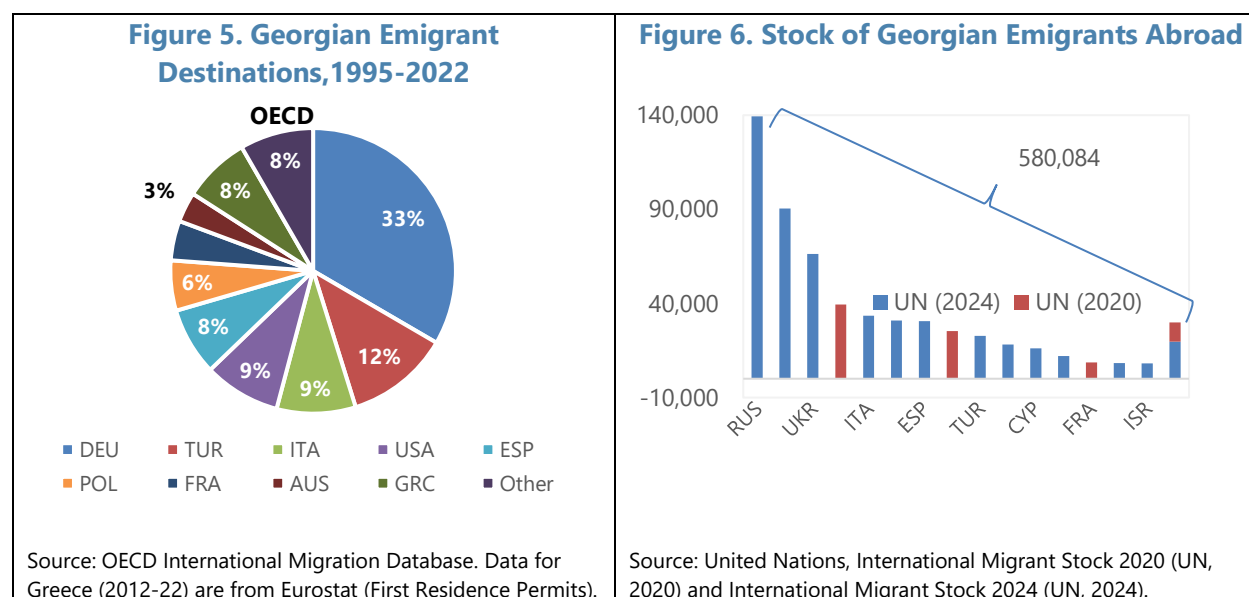
- According to United Nations estimates, over 580 thousand Georgians lived abroad in 2024, representing 16 percent of Georgia's population (Figure 6).[4] The top five host countries

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[4] United Nations estimated in 2024 that there were nearly 496,500 Georgians living abroad, excluding 13 countries, including key destinations such as the United States, Germany, France, Canada, and the United Kingdom. In 2020, the United Nations estimated that 83,600 Georgians resided in these 13 countries, and that the total number of Georgians living abroad was 860,000.

accommodate two-thirds of these emigrants, with Russia remaining the leading host country, housing a quarter of all Georgian emigrants.[5] Nevertheless, the size of the Georgian diaspora might be underestimated, as 58 percent of Georgians reported having a family member or close relative currently living abroad in the latest Caucasus Barometer Survey (2024).

Figure 7. First Resident Permits Issued to Georgian Emigrants by Recipient Countries in Europe

a. By sex, 2010-23

Note: 2020-23 for Germany.

b. By age, 2010-23

Note: 2020-23 for Germany.

c. By length of validity, 2008-23

d. By reason, 2008-23

Source: Eurostat (First Residence Permits).
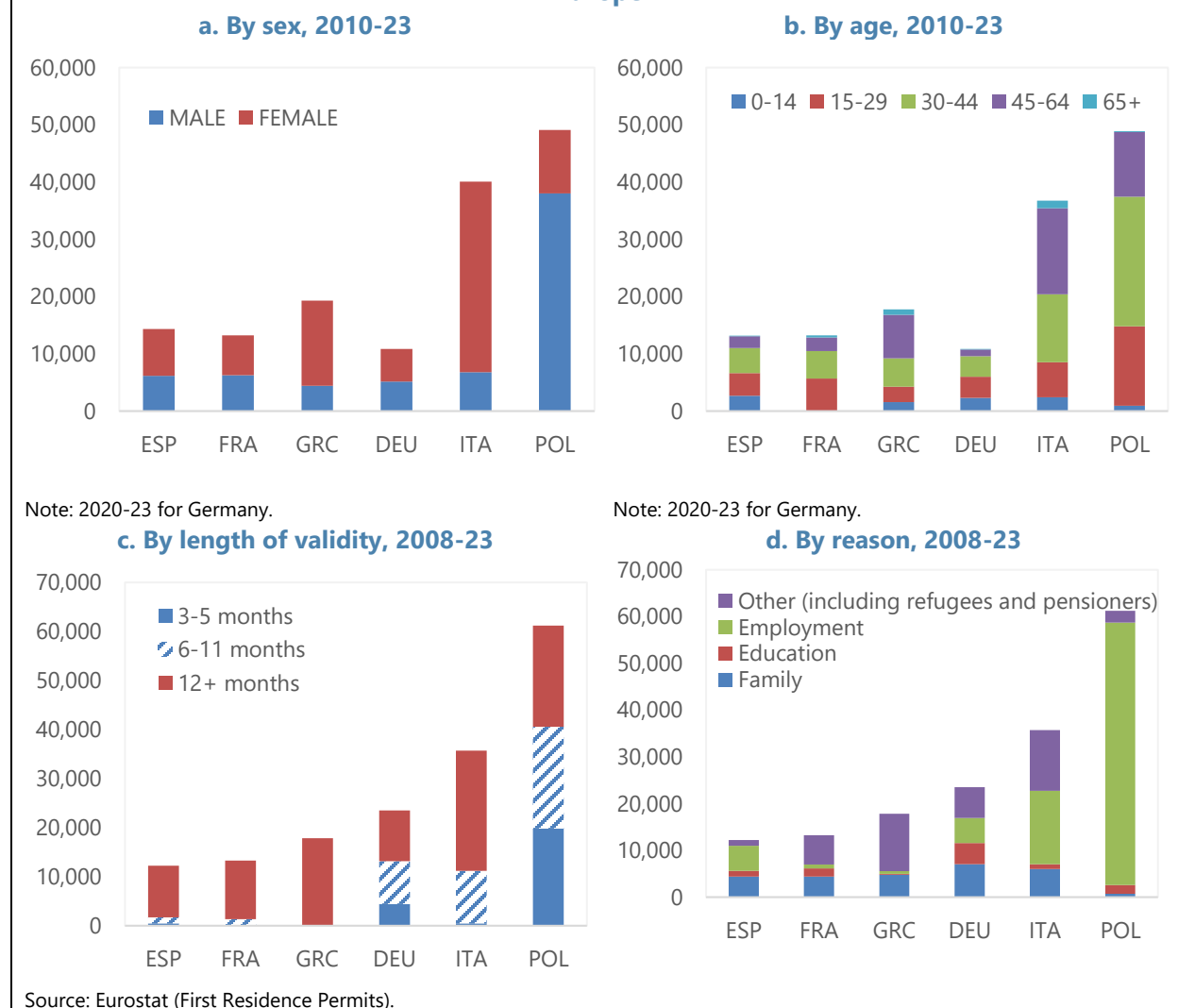
7.   The patterns of emigration from Georgia have differed across destination countries. For example, while Poland mostly received Georgian men aged 30-44 on a short-term basis and for employment purposes, Greece mostly received Georgian women aged 45-64 on a long-term basis and for humanitarian and family reasons (Figure 7). Italy largely attracted Georgian women aged 45-64 on a long term-basis as well, mainly for employment purposes, particularly in the domestic work

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[5] United Nations estimated in 2020 that more than half of all Georgian emigrants (450,000 people) resided in Russia. However, the 2024 estimates suggest most Georgian residents have left Russia, likely due to Russia's war in Ukraine that started in 2022.

and elderly care sectors (OECD, 2022). Germany, on the other hand, attracted the largest share of Georgian youth (aged 0-29) and students.

8.   Overall, employment has been the main reason for Georgian emigrants to relocate to Europe. Between 2010-23, half of all first resident permits issued by European countries to Georgian nationals were for employment reasons. Higher unemployment rates and lower wages in Georgia have likely driven many working-age Georgians to explore better job opportunities abroad. This trend is expected to continue as 9 percent of Georgians expressed intention to emigrate permanently in the 2024 Caucasus Barometer Survey (and 15 percent in the 2024 Gallup World Poll—see Figure 10f), while 45 percent indicated intention to relocate temporarily.

9.   Nevertheless, Georgian emigrants living in OECD countries have faced high unemployment and low labor force participation rates. According to the database on immigrants in OECD, nearly 20 percent of the Georgian labor force was unemployed and over 40 percent of the Georgian working-age population was inactive (not in the labor force) in 2020/21 (Figure 8). During the same period, the unemployment rate in Georgia also averaged around 20 percent and nearly half of the working age population was outside the labor force, a proportion slightly higher than that of Georgian emigrants (GEOSTAT, 2025). Within the main OECD destination countries, the employment rates of Georgian emigrants were the highest in Poland for both males and females, and the unemployment rates were the highest in France (especially for females) and Greece (especially for males) (Figure 9a).

Figure 8. Characteristics of Working Age Georgian Emigrants Living in OECD Countries, 2020/21

Source: Database on Immigrants in OECD Countries (DIOC), 2020/21 (provisional). The database does not include Germany. The data on the labor market status does not include Turkey.
Note: For educational attainment, low: up to lower secondary education, medium: upper secondary and post secondary non-tertiary (e.g., vocational) education, high: tertiary education.

10.   The educational attainment of Georgian emigrants in OECD countries has been lower than that of Georgia's population. In 2020/21, 30 (31) percent of working age Georgian emigrants in OECD countries had low (high) educational attainment (Figure 8). In contrast, during the same period, 4.5 (40) percent of Georgia's labor force had low (high) educational attainment (GEOSTAT,

2025). Among the main OECD destination countries, the USA had the highest share of tertiary educated Georgian emigrants (two-thirds), while Spain and Italy had the highest share of Georgian emigrants with low educational attainment (45 percent) (Figure 9b). Although female Georgian emigrants had higher educational attainment than males in all the main destination countries, their employment rate was lower than that of males except in Italy (Figure 9).

Figure 9. Characteristics of Working Age Georgian Emigrants in Selected OECD Countries, 2020/21

a. Labor Market Status

b. Educational Attainment
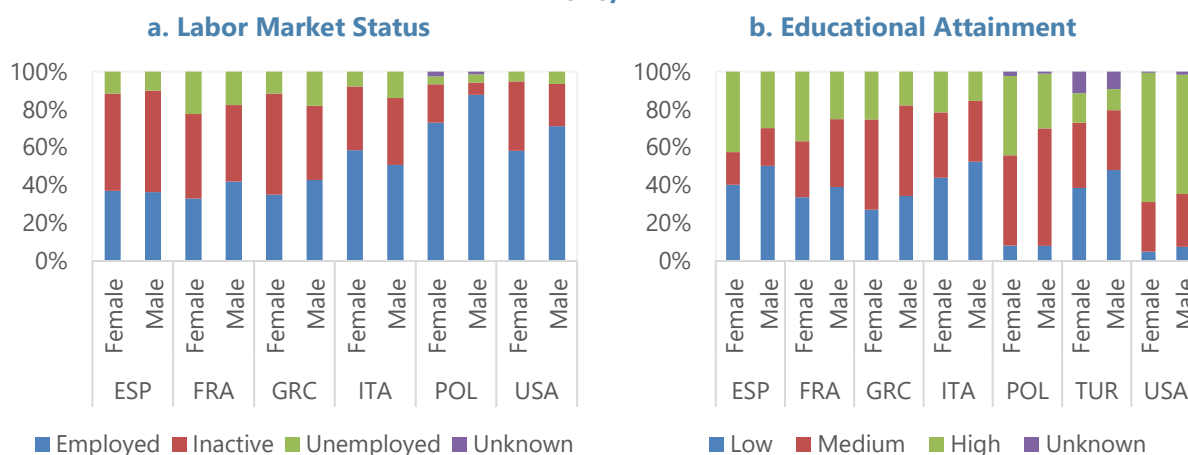
Source: Database on Immigrants in OECD Countries (DIOC), 2020/21 (provisional).
Note: For educational attainment, low: up to lower secondary education, medium: upper secondary and post secondary non-tertiary (e.g., vocational) education, high: tertiary education.

11.   Compared to their regional peers, Georgian emigrants in OECD countries have tended to be older and lower skilled and have shown less favorable labor market outcomes. Since 1995, Georgia has sent a greater number and proportion of its legal emigrants to OECD and European countries than its regional peers (Figures 10, 11). In 2020/21, the Georgian diaspora in OECD countries had, on average, a higher proportion of females, fewer younger workers (aged 15-24), lower levels of educational attainment, and higher rates of unemployment and inactivity than emigrants from former Soviet Union and Yugoslav countries (Figure 10). Between 1995 to 2022, and among Caucasian and Central Asian peers, Georgia also had the highest proportion of female emigrants to Europe, the lowest share of young emigrants (aged 0-24), and the lowest share of emigrants who left for educational reasons (Figure 11). Thus, Georgian emigration to OECD and European countries has not been a particular brain drain case compared to peers.

Figure 10. Demographics and Emigration in Georgia Compared to Peers

Georgia's population has declined since the Soviet Union's fall, in contrast with CCA peers (except Armenia).

a. Population (in millions)
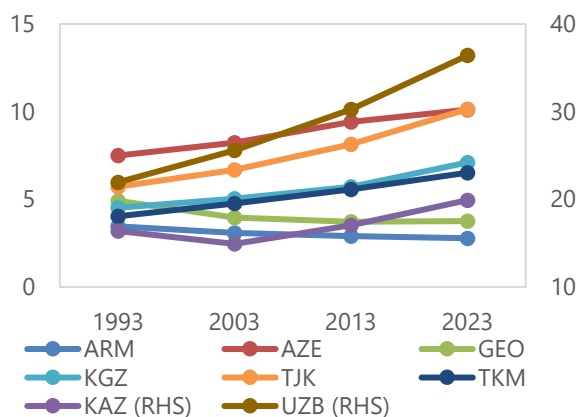
The population is also aging, as in CCA peers, with Georgia having the oldest population in the region.

b. Median Age (in years)

Source: WDI.
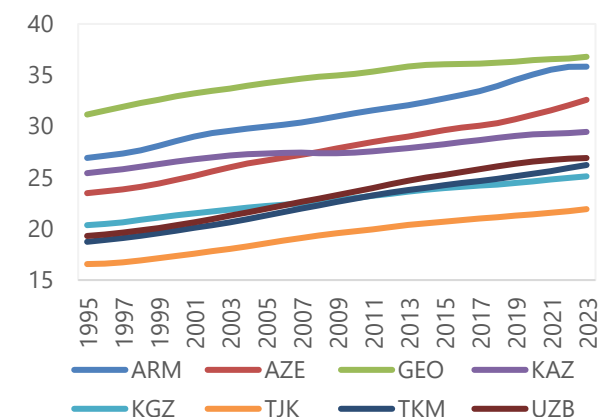
Source: United Nations Population Division (2024).

Since 1995, 9 percent of Georgia's population emigrated to the OECD region, the highest among CCA peers.

c. Legal Emigration Flows to OECD
(cumulative, in percent of population)

In contrast, only 6 percent of Georgia's population emigrated to Russia since 1997, below most CCA peers.

d. Legal Emigration Flows to Russia
(cumulative, in percent of population)
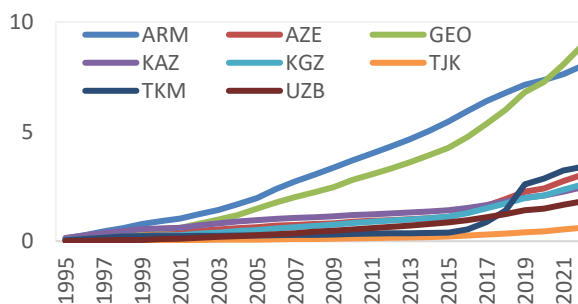
Source: OECD International Migration Database, WDI.
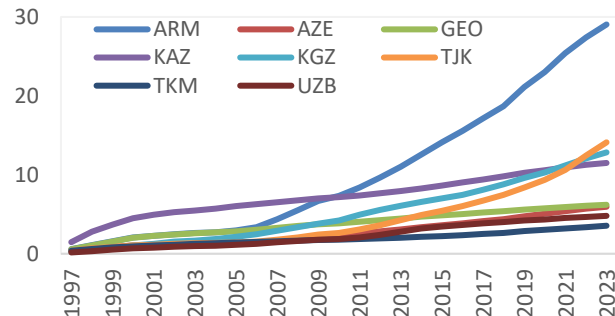
Source: Russian Statistical Bureau, WDI.

Emigration rates might be even higher, as 58 (81) percent of Georgians (Armenians) report having a close relative abroad.

e. Close Family or Relative Living Abroad
(in percent of population)

Large scale emigration will likely persist, with 9 (22) percent of Georgians (Armenians) intending to emigrate permanently.

f. Emigration Intentions
(in percent of population)
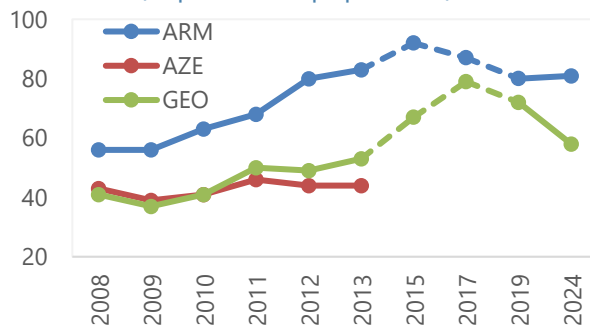
Source: Caucasus Barometer Survey.
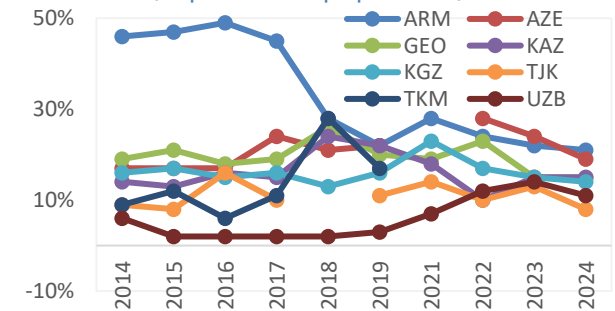
Source: Gallup World Poll.

Figure 10. Demographics and Emigration in Georgia Compared to Peers (Concluded)

Compared to regional peers, Georgian diaspora in OECD countries on average had a higher ratio of females, a lower share of young workers, higher unemployment and inactivity rates, and lower educational attainment in 2020/21.

g. Characteristics of Working Age Emigrants Living in OECD Countries, 2020/21
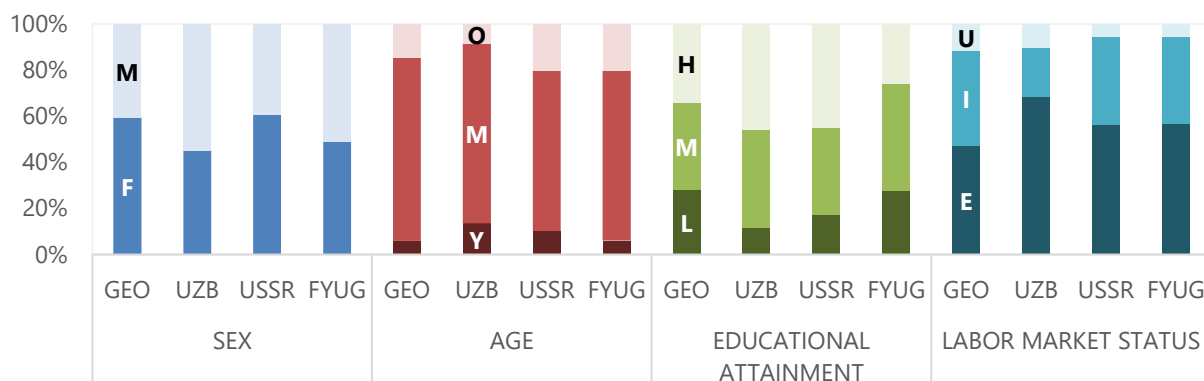
Source: Database on Immigrants in OECD Countries (DIOC), 2020/21 (provisional).
Note: For Sex, F: Female, M: Male; for Age: Y: 15-24 (Young), M: 25-64 (Middle Aged), O: 65+ (Old); for Educational Attainment, L: Low, M: Middle, H: High; for Labor Market Status, E: Employed, I: Inactive, U: Unemployed. USSR: Former Soviet Union Countries (Belarus, Moldova, Russia, Ukraine), FYUG: Former Yugoslav Countries (Bosnia & Herzegovina, Croatia, North Macedonia, Serbia).

Figure 11. First Resident Permits Issued in Europe to Emigrants from Caucasus and Central Asia

Among its CCA peers, Georgia has sent the highest number of legal emigrants to Europe...

a. Total, 2010-23
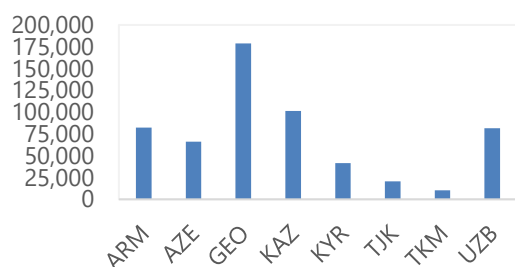
...with the highest proportion of these emigrants being female (along with Kazakstan)...

b. Share by sex, 2010-23

■ MALE ■ FEMALE
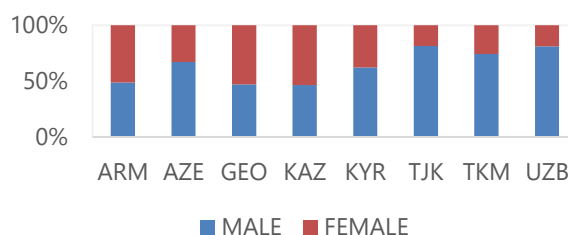
... the lowest proportion of these emigrants being young (aged 0-24)...

c. Share by age, 2010-23

■ 0-14 ■ 15-24 ■ 25-44 ■ 45-64 ■ 65+
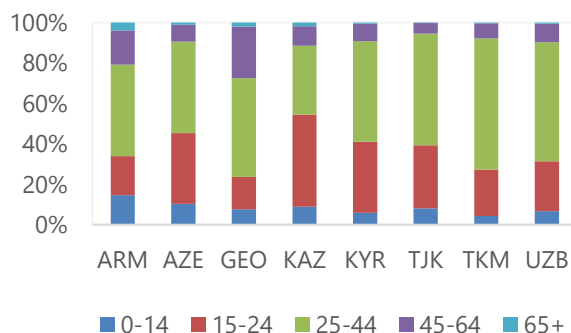
...and the lowest proportion of these emigrants leaving for educational reasons.

d. Share by reason, 2010-23
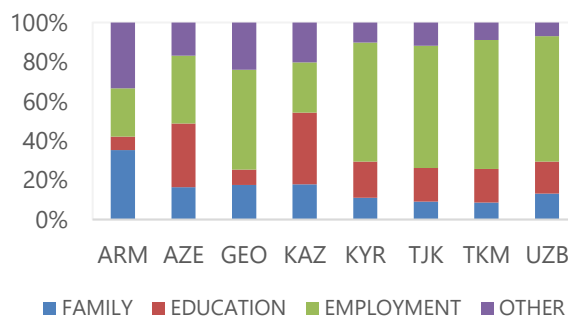
■ FAMILY ■ EDUCATION ■ EMPLOYMENT ■ OTHER

Figure 11. First Resident Permits Issued in Europe to Emigrants from Caucasus and Central Asia (Concluded)

Poland has been a top destination for all CCA countries, along with Western Europe for Caucasian emigrants and Eastern Europe for Central Asian emigrants.

e. Share by destination, 2010-23
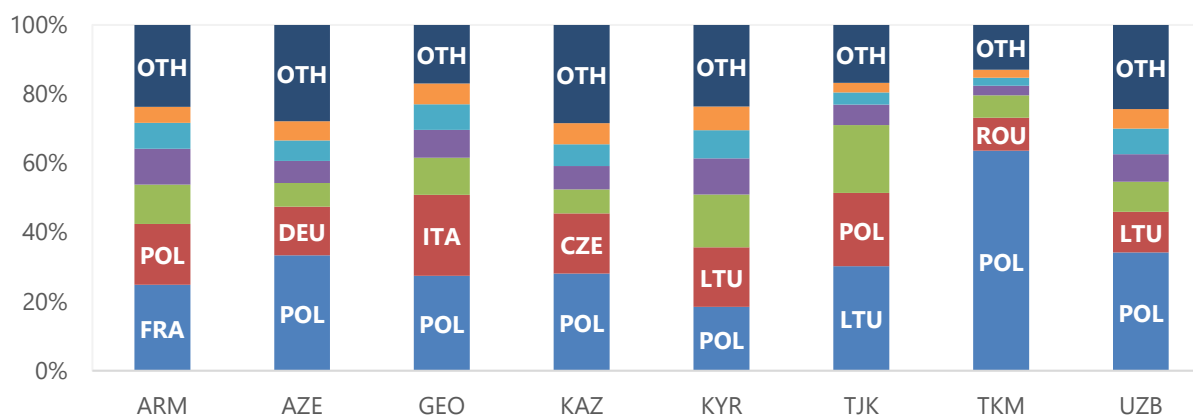
Source: Eurostat (First Residence Permits). Data for Germany cover 2020-23.

C. Labor Market Implications of Emigration from Georgia

12.   Emigration affects the source economy through multiple channels, both negatively and positively (see Walerych, 2020 for a literature review). By affecting the labor supply and changing the composition of the workforce, emigration can potentially alter growth, wage, and fiscal dynamics of the sending country. For instance, a disproportionately high departure of young and well-educated emigrants (brain drain) tends to reduce the stock of human capital and fiscal revenues in the sending country, as these emigrants typically contribute more in taxes than they receive in benefits. Lower levels of human capital can, in turn, reduce productivity and output, while exacerbating inequality by raising the wages of well-educated (skilled) non-migrant workers relative to less educated (unskilled) ones. Nevertheless, the negative effects of emigration are partially offset by an increase in remittances sent back to the country, which raise incomes and consumption of the recipient households; and many migrants eventually return to their home country, bringing valuable skills, experience, and knowledge gained abroad.

13.   Emigration in Georgia does not appear to have caused excessive brain-drain, limiting its adverse effects on human capital. As previously mentioned, Georgian emigrants tend to be older and less educated compared to Georgian non-migrants and emigrants from neighboring countries (Figure 10g). The share of Georgian working-age emigrants in OECD countries with low educational attainment (up to lower secondary) rose from 26 percent in 2015/16 to 30 percent in 2020/21, while the share of those with higher (tertiary) education decreased from 38 percent to 31 percent (OECD, 2022; Figure 8). Meanwhile, within Georgia's local labor market, the share of individuals with high educational attainment remained around 40 percent, while those with low educational attainment decreased from 12 percent to 4 percent during the same period (GEOSTAT,

2025). This trend has contributed to maintaining a relatively stable level of human capital within the country.

14.   Nevertheless, emigration has contributed to a contraction in the Georgian workforce, with potentially negative implications on growth. Although the population has stabilized around 3.7 million since 2014 (Figure 1), the working-age population experienced a 5 percent decline from 2014 to 2023 (Figure 12). This decline was primarily driven by outward migration, as the net migration rate for the working age population was, on average, negative in this period (Figure 2). If policies and preferences remained unchanged, this trend would have resulted in a corresponding annual reduction in labor force participation and supply, and a drag on annual output by 2 percent.[6] As mentioned before, emigration likely has contributed to labor shortages, hindering Georgian business expansion. The EU Business Climate Survey (2024) shows two-thirds of businesses avoid new projects due to a lack of workers.

Figure 12. Georgian Population by Age Group (thousand)	Figure 13. CCA: Old Age Dependency Ratio (in percent)

Figure 12. Georgian Population by Age Group (thousand)

Working Age (15-64)   Child (0-14)   Elderly (65+)

Source: GEOSTAT.
Note: Population estimates as of January 1st.

Figure 13. CCA: Old Age Dependency Ratio (in percent)

ARM   AZE   KGZ   TJK   TKM
GEO   KAZ   UZB   ECA

Source: WDI.
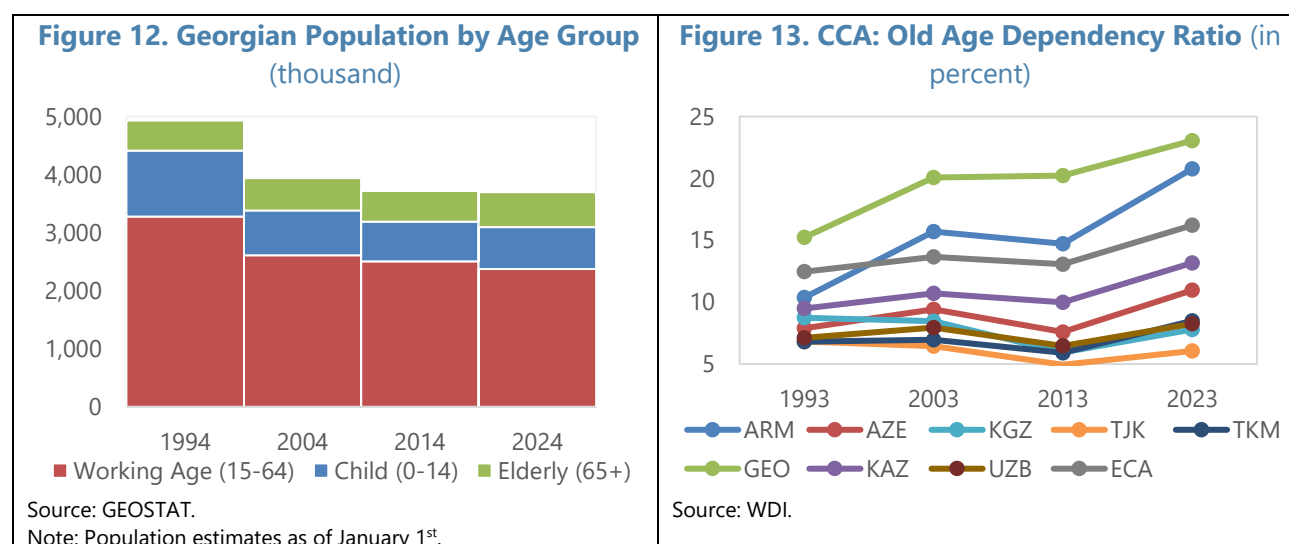
15.   Emigration has also contributed to an aging population, with potentially negative implications on fiscal balances. The old age dependency ratio (the ratio of elderly population over working age population) increased in the past decade, with working age population shrinking and elderly population rising (Figures 12 and 13). This is partly explained by net migration out of Georgia, as those who leave are typically younger compared to those who migrate or return to Georgia (Figure 2). The old age dependency is particularly high in Georgia compared to CCA and developing economy peers, which will likely strain its social welfare and pension systems in the coming years. Nevertheless, the latest fiscal risks statement (MoF, 2024) for Georgia estimates the long-term impact of aging on health and pension spending as manageable.

16.   However, emigration has also led to significant remittance inflows. In 2024, net money transfers to Georgia, which consist largely of remittance inflows, amounted to $3 billon, or 9 percent

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[6] This back of the envelope calculation uses a standard growth accounting exercise, with a labor share in output of around 40 percent in this period (see also IMF (2024) Selected Issues Paper on growth).

of the country's GDP (Figure 14). This represents a more than doubling since 2012 (from $1.2 billion). Currently, the USA is the largest contributor ($560 million in 2024) followed by Italy ($550 million), and Russia ($500 million), in line with the size and socioeconomic characteristics of the Georgian diaspora living in these countries. While Russia's share surged in 2022 following the war in Ukraine, it has now normalized to its pre-war level. The EU's share (mainly from Italy, Germany, Greece, Spain, France, and Poland) has been rising since the visa liberalization agreement in 2017, totaling $1.3 billion in 2024. The size of personal remittances received in Georgia as a share of GDP is comparable to the average of its CCA peers, yet significantly higher than that of Eastern and Central European and developing countries, highlighting Georgia's substantial reliance on remittances (Figure 15).

Figure 14. Net Money Transfers to Georgia
(in thousand dollars)
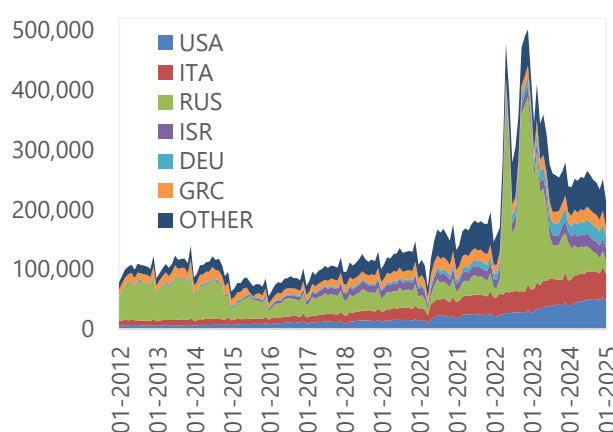
Source: National Bank of Georgia.
Note: Remittances are a subset of money transfers, as the latter includes transfers from non-Georgians too.

Figure 15. CCA: Remittance Inflows
(in percent of GDP)
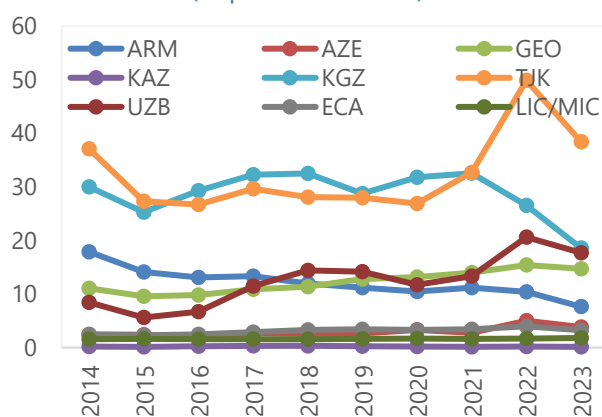
Source: WDI.
Note: ECA—Eastern and Central Europe excluding high income countries, LIC/MIC: low and middle income countries.

17.   Remittance inflows have been a valuable source of household income and foreign currency, comparable to export revenues, tourism receipts, and foreign direct investment (Figure 16). Since they tend to be countercyclical, remittances provide a financial buffer during downturns, as was the case in 2020. At the micro level, the household income and expenditure survey data show that around 6-7 percent of households report receiving remittances, which averaged near GEL 900 (USD 330) per month in 2023 (Figure 17). Remittances make up around 40-45 percent of monthly income for receiving households and the latter earn 25-30 percent more income than those receiving no remittances (PMC, 2022) but

Figure 16. Major Sources of Foreign Currency for Georgia
(in thousand dollars)
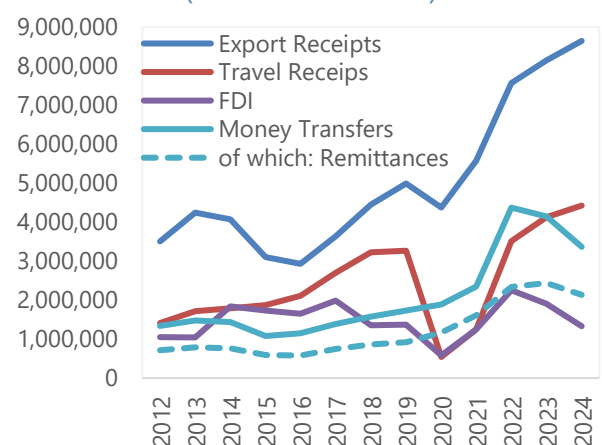
Source: National Bank of Georgia.

have a 20 percent lower probability of employment (Figure 18). Thus, remittance receiving households tend to have less incentives to seek jobs, reducing their participation in the labor force.

Figure 17. Income from Remittances for Georgians
(LHS: in percent of households, RHS: in GEL)

Proportion of households receiving remittances
Monthly average remittances per receiving households (RHS)
Source: PMC Research Center (2022) and Fund staff calculations (for 2022-23).

Figure 18. Income from Hired Employment for Georgians
(in percent of households)

Households not receiving remittances
Households receiving remittances
Source: PMC Research Center (2022) and Fund staff calculations (for 2022-23).

18.   Return migration into Georgia has also been significant, with potential human capital gains from those bringing the skills and experience gained abroad. These returns often occur in the face of financial or physical insecurity, as seen during the pandemic in 2020 (IOM, 2021), when the number of Georgians returning home exceeded those leaving Georgia (Figure 17). Excluding the pandemic, the average number of Georgian returnees has been two thirds of those emigrating since 2012. Following Russia's invasion of Ukraine, Georgia saw a record influx of over 150,000 immigrants per year in 2022-23 (Figure 18), with a majority coming from Russia (German Economic Team, 2023). A significant share of these immigrants were ethnic Georgians returning home along with Russian immigrants, likely contributing to the exceptionally high economic activity.

Figure 19. Return Migration to Georgia
(in persons)

Source: GEOSTAT.

Figure 20. Migration to Georgia by Citizenship, 2022-23

Source: GEOSTAT.
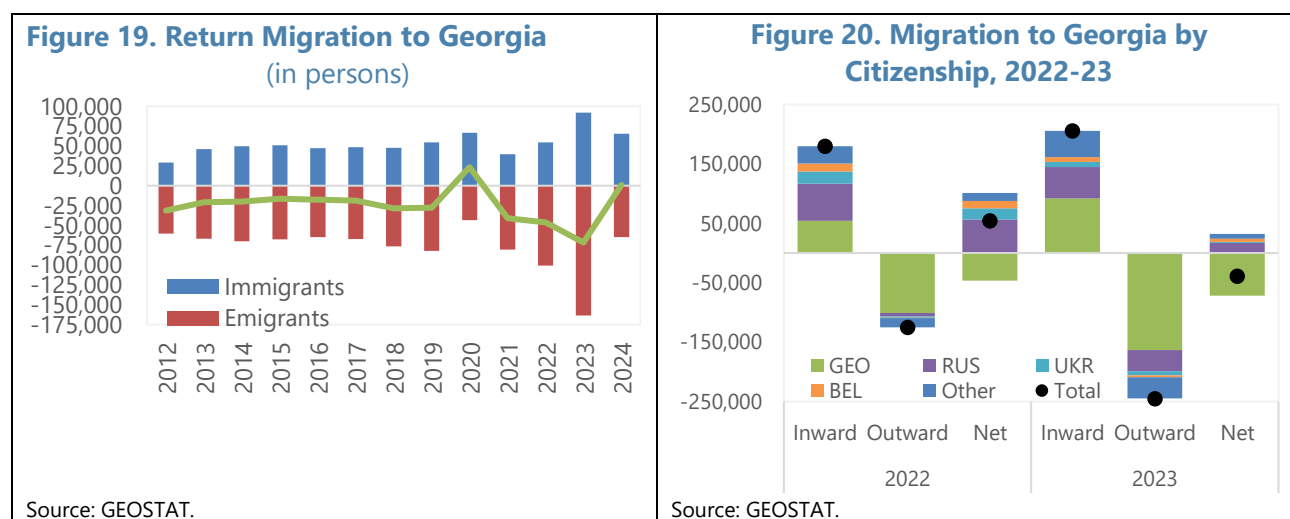
D. Policy Options to Mitigate Challenges and Enhance Opportunities from Emigration

19.   Georgia has a migration strategy for 2021-2030 (SCMI, 2020), the effectiveness of which can be improved by regular progress and impact assessments. The strategy aims to develop a comprehensive migration management system in Georgia in line with EU standards. It seeks to minimize negative and maximize positive effects of migration on the country's development, covering both inward and outward migration and various social, political, and economic aspects. It is implemented through annual action plans, with the latest one for 2024 approved in December 2023. The State Commission on Migration Issues (SCMI), established in 2010 under the Ministry of Justice and comprised of nine government entities, monitors the implementation. However, SCMI's progress and impact assessments seem to have stalled in recent years, with the latest migration profile document published in 2021 (SCMI, 2021).

20.   Improving vocational education, training, and career advancement programs is essential to develop and retain talent.

- Vocational education and training (VET) could help enhance the skills of the domestic workforce and reduce the incentives for skilled workers to emigrate. Georgia already has a VET program, but access, quality, and relevance (partnership with businesses) remain a challenge, with only 4,000 beneficiaries per year, low interest from the private sector, inadequate funding, limited capacity to manage coordination, and low (below 70 percent) employment rate among VET graduates (World Bank, 2022).

- Career development programs, including mentorships, internships, and partnerships with local businesses could provide opportunities and incentives for young professionals to remain in the country. Georgia's State Employment Promotion Program aims to promote competitiveness and employment of job seekers, through vocational and soft skills training, internships (on the job training), employment in public works, and wage subsidies. Administered by the State Employment Promotion Agency (SEPA), it offers career counseling, connects job seekers and employers (via job fairs and portals), and facilitates cross border agreements on circular migration. Still, Georgia's spending on unemployment and active labor market programs (less than 0.01 percent of GDP) remains much lower than those of middle income and OECD peers (average 0.5 percent of GDP). Higher funding could help SEPA strengthen its staffing, evaluation, business partnerships, and regional reach (World Bank, 2022).

21.   Promoting financial literacy and mobilizing the diaspora could help leverage remittances for productive investments, such as in education, healthcare, and small businesses. The household income and expenditure survey (2023) shows that remittance receiving households already spend 60 percent more on education, which is a positive trend that should be encouraged further. The Georgian diaspora could also be mobilized to invest in local businesses and infrastructure projects. Matching programs, like Mexico's *Tres por Uno* and El Salvador's *EduRemesa,* have successfully increased diaspora funding and public spending on local communities and education, respectively (Lynn Lopez, 2015; Ambler and others, 2015).

22.   Reintegration programs and entrepreneurial support could help attract return migration and harness skills and knowledge gained abroad. Korea's approach to diaspora management serves as a model, offering tailored incentives for returnees like relocation grants, job placement services, VET, subsidies for starting businesses, tax exemptions and reductions, and R&D support particularly in high tech industries. This has significantly increased the number of skilled professionals returning to Korea and contributing to local economic development and innovation (Mylonas, 2013). During 2016-20, Georgia facilitated the return of 11,000 migrants, mostly from Europe, under the Assisted Voluntary Return and Reintegration program of the International Organization of Migration (IOM). 4,000 different types of reintegration assistance were provided benefiting 3,400 returnees (SCMI, 2021). Such programs could be expanded and evaluated more frequently.

23.   Developing immigration policies and international partnerships to attract foreign talent could help address labor shortages in key sectors. This includes offering work visas, residency permits, and pathways to citizenship for skilled workers. According to the Ministry of Labor, 42,000 immigrants currently work in Georgia, and potentially double that number if including the shadow economy. Legalizing their work through registry and work permits is essential. Establishing partnerships with other countries can facilitate the exchange of skilled workers and promote knowledge transfer. Global Skill Partnerships, like those in Germany, train migrants in their home country, with funding from the host country, transferring technology and capacity. Both migrants and non-migrants could be trained in these facilities, "turning drains into gains" (Clemens and others, 2018). A bilateral agreement with Germany (signed in December 2023) aims to promote temporary legal employment in sectors like agriculture and logistics. Georgia could adopt similar partnerships with regional peers to address labor shortages and foster long-term collaboration and innovation.

E. Conclusion

24.   The economic impacts of emigration on Georgia are multifaceted. While emigration can lead to human capital loss, it also brings significant benefits through remittances and return migration, boosting incomes, foreign currency, and labor market skills in the local economy. Policymakers need to balance these factors to minimize the adverse impacts and harness the benefits. Policy options include: i) investing in education, vocational training, and career development of young professionals to retain talent; ii) promoting financial literacy of households and mobilizing the diaspora to leverage remittances for physical and human capital investments; iii) encouraging return migration through reintegration programs and entrepreneurial support; and iv) attracting foreign talent through tailored immigration policies and international partnerships.

References

Ambler, K., Aycunena, D., and Yang D. (2015), "Channeling Remittances to Education: A field Experiment among Migrants from El Salvador", American Economic Journal: Applied Economics 2015, 7(2): 207-232 [link]

Caucasus Barometer Survey (2024) [link]

Clemens, M., Huang, C., Graham, J., and Gough, K. (2018). "Migration Is What You Make It: Seven Policy Decisions that Turned Challenges into Opportunities." Center for Global Development [link]

EU (2024), Business Climate Report, Georgia [link]

German Economic Team (2023), "Relocation of People from Russia and Belarus to Georgia: Results of 2nd Survey and Update of Economic Implications". Policy Study. [link] [link]

IMF (2016), Emigration and Its Economic Impact on Eastern Europe, Staff Discussion Note [link]

IMF (2024), Medium-Term Growth Prospects and Policies, Selected Issues Paper [link]

IOM (2021), National Study of Reintegration Outcomes among Returned Migrants in Georgia [link]

Lynn Lopez, S. (2015), "Tres por Uno: The Spatial Legacy of Remittance Policy.", The Remittance Landscape: Spaces of Migration in Rural Mexico and Urban USA, University of Chicago Press [link]

MoF (2024), Fiscal Risks Statement, Ministry of Finance of Georgia [unpublished]

Mylonas, H. (2013), "The Politics of Diaspora management in the Republic of Korea", The Asan Institute for Policy Studies, Issue Brief, Nov. 20, 2013 No:81 [link]

OECD (2022), A Review of Georgian Emigrants [link]

PMC (2022), Emigration and Effect of Remittances on Georgian Economy, PMCG Research Center, Economic Outlook and Indicators, Issue 139, 13.09.2022 [link] [link]

SCMI (2020), Migration Strategy of Georgia 2021-2030, State Commission on Migration Issues [link]

SCMI (2021), Migration Profile of Georgia, State Commission on Migration Issues [link]

Walerych, M. (2020), "The Economic Effects of Emigration: A Literature Review", Social Inequalities and Economic Growth, no. 62 (2/2020) [link]

World Bank (2022), Georgia Human Capital Review [link]

GEORGIA'S LARGE TAXPAYER OFFICE (LTO): REVENUE YIELDS AND TAXPAYERS' BEHAVIORAL CHANGES[1]

Georgia's LTO has delivered significant revenue gains—estimated at 0.4–0.7 percent of GDP—through a combination of enhanced enforcement and improved taxpayer services. Following its re-establishment in 2021, compliance among large taxpayers improved. The LTO's impact has intensified over time, highlighting that tax reforms require sustained implementation to reach full potential. While the LTO raised tax assessments on average, its effects varied across sectors, influenced by factors like availability of paper trails and evasion risks. Further gains could be achieved by enhancing compliance risk management (CRM) and tax enforcement, and expanding the LTO coverage to cover the entire corporate groups and high-net-worth individuals (HNWIs).

A.   Institutional Context

1.   **Large taxpayers are vital for domestic revenue mobilization.** In many countries, including Georgia, a small number of corporations account for a substantial share of corporate taxable income. These taxpayers often exhibit distinct risk profiles and operational complexities, requiring specialized oversight. By focusing on this segment, tax administrations can allocate resources more efficiently, mitigate compliance risks, reduce compliance costs, and strengthen overall revenue collection. Reflecting this approach, 150 countries—including Georgia—have established Large Taxpayer Offices (LTOs) to manage large taxpayers more effectively, implement risk-based compliance strategies, and foster more transparent, cooperative relationships to promote voluntary compliance.

2.   **Tax administration has played a critical role in strengthening revenue collection in Georgia (Figure 1).[2]** The country ranks in the top 30 percent of tax administrations worldwide, with an operational strength index (OSI) of 0.69 in 2022—slightly below the EU average (0.72) and the EU emerging markets average (0.74), but above the emerging markets average (0.59) and CCA average (0.66). Since 2015, when the OSI stood at 0.64, Georgia's tax administration has steadily converged toward EU standards. Its strengths include compliance risk management, use of third-party data, digitalization, service orientation, public accountability, and autonomy. However, weaknesses remain, particularly the lack of a dedicated unit for HNWIs, limited tax enforcement powers, and challenges in human resource management and development.

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[1] Prepared by Jean-Marc Atsebi (FAD).

[2] Tax administration reforms are particularly important in Georgia given legal constraints on tax policy. The Economic Liberty Act (ELA) requires a qualified parliamentary majority and a referendum to permanently raise top tax rates or introduce new taxes.

Figure 1. Performance of the Georgian Tax Administration

Operational Strength of the Tax Administration
(Index, 0 to 1)

Strength of the Tax Administration Practices
(Index, 0 to 1)
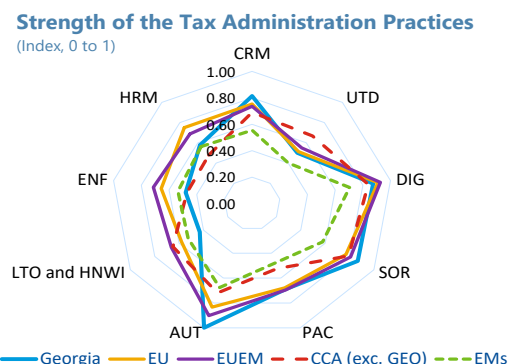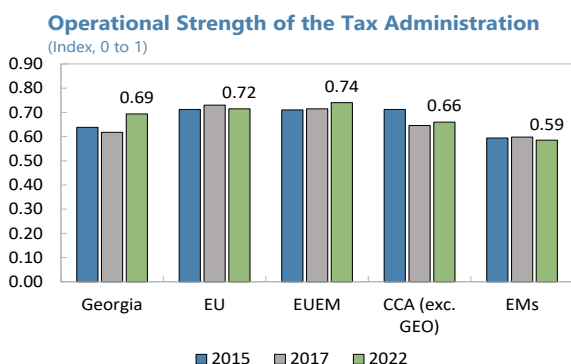
Sources: ISORA, IMF staff calculations

Note: The indices presented measure the strength of tax administration, capturing both overall capacity (left Figure) and performance across specific practices and structural foundations (right Figure). These include compliance risk management (CRM), use of third-party data (UTD), degree of digitalization (DIG), service orientation (SOR), public accountability (PAC), autonomy (AUT), the presence of a large taxpayer office (LTO) and dedicated oversight for high-net-worth individuals (HNWI), tax enforcement powers (ENF), and human resource management and development (HRM).

3. A key recent reform was the re-establishment of the LTO, after the original office was dismantled in 2010. The decision at the time reflected concerns about governance challenges, including risks of political interference, inefficient use of audit powers, and fragmentation of tax administration across multiple entities. Absent the LTO, Georgia relied on rigid audit filters and outsourced audits—approaches that proved less effective and exposed the tax system to revenue risks from major contributors. Supported by the IMF's Fiscal Affairs Department (FAD) and under the 2017 Extended Fund Facility (EFF) program, Georgia committed to re-establishing an LTO with strengthened governance and operational safeguards to address past shortcomings.

4. The new LTO was established with two main objectives: (i) enhancing services for large taxpayers through better communication and consultation, and (ii) improving enforcement through data-driven risk analysis. A new Risk Differentiation Framework (RDF) was introduced to classify taxpayers by risk levels, supporting more targeted audits. Compliance activities are overseen by a Compliance Risk Committee (CRC) chaired by the Director General, and the LTO now includes dedicated Service, Analysis, and Transfer Pricing divisions. However, some aspects of the reforms are proceeding slowly, especially in relation to the capacity to undertake enforced compliance and expand the LTO coverage to consolidated corporate groups and HNWIs.

5. The coverage of the LTO has expanded significantly since its re-establishment, supported by a clear, multi-criteria classification system. Initially, 203 taxpayers were identified in 2021, increasing to 264 following revised thresholds in 2024. VAT turnover is the primary distinguishing criterion, as it allows to identify 74 percent of large taxpayers. To qualify between September 2021 and January 2024, taxpayers had to meet at least one of the following: VAT turnover of 80 million GEL, exports over 40 million GEL, net property value of 150 million GEL, recognized tax

assessments over 20 million GEL, or a workforce of 1,000 employees. All banks were automatically classified, and gambling/payment sectors qualified with a tax payment exceeding 1.5 million GEL. In January 2024, thresholds were raised, increasing the number of LTO taxpayers to 264. New criteria included VAT turnover of 100 million GEL, exports over 50 million GEL, property value of 200 million GEL, tax assessments over 25 million GEL, or a workforce of 1,300 employees. Gambling/payment sectors required tax payment over 2 million GEL.

B. Key Questions, Data, and Stylized Facts

6.   This analysis assesses the revenue impact and behavioral changes following the LTO's re-establishment. The analysis addresses three questions: (i) has the LTO contributed to boosting revenue in Georgia, and if so, by how much? (ii) has it influenced taxpayer behavior either to improve compliance or to avoid scrutiny? And (iii) what can be done to further increase tax revenue? These questions are particularly relevant considering: the 3 percentage point increase in the tax-to-GDP ratio since 2021, the mixed empirical evidence on the effectiveness of LTOs in raising revenues (Ebeke et al., 2016; Basri et al., 2021), and evidence of strategic taxpayer behavior to avoid LTO scrutiny (Almunia and Lopez-Rodriguez, 2018).

7.   To answer these questions, it draws upon detailed anonymized microdata from the Georgian Revenue Service (GRS). The dataset covers 1.45 million active taxpayers from 2017 to 2024 and includes information on LTO selection criteria, tax assessments (DPT, VAT, WHD), taxpayer characteristics (sector, establishments, founders), and enforcement actions.[3] Nominal values are deflated to 2021 using the CPI. The sample is restricted to firm taxpayers with positive VAT turnover, focusing on the top 5 percent of the VAT turnover distribution to ensure comparability. After applying these filters, the final dataset consists of 25,292 taxpayer-year observations, 4,215 firms, and 190 and 235 LTO taxpayers assigned in 2021 and 2024, respectively.

8.   LTO taxpayers are significantly larger, file returns more promptly, and account for a significant share of tax revenue compared to non-LTO taxpayers (Figure 2).[4] On average, their VAT turnover is 16 times higher, representing 44 percent of total VAT turnover while comprising only 5.3 percent of taxpayers. Their final tax assessments are 10 times higher and represent 26 percent of total assessments. LTO taxpayers also have fewer late declarations which is a positive indicator of voluntary compliance. They are mainly concentrated in wholesale and retail trade, manufacturing, and finance.

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[3] DPT stands for Distributed Profit Tax, VAT stands for Value-Added Tax, and WHD stands for Withholding Tax.

[4] These statistics are based on the selected sample, not the general population of taxpayers. Focusing on the general population would not qualitatively change the interpretation.

Figure 2. Comparative Profile of Large and Non-Large Taxpayers in Georgia

Difference in LTO Criteria between LTO an Non-LTO Taxpayers
(million GEL)

Difference in Tax Assessments between LTO an Non-LTO Taxpayers
(million GEL)

Difference in Tax Assessments between LTO an non-LTO Taxpayers
(million GEL)
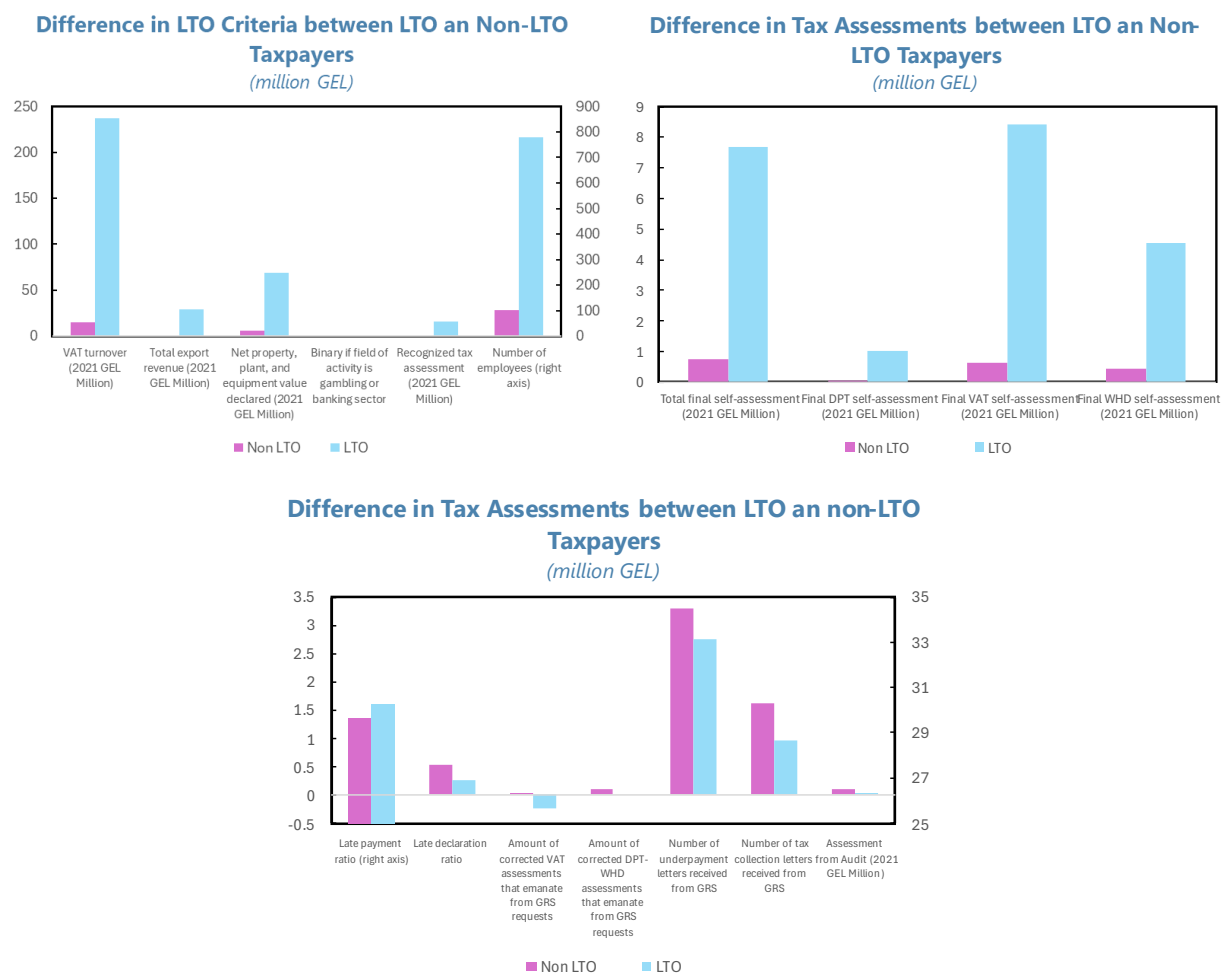
Sources: GRS, IMF staff calculations.
Note: These figures show that LTO taxpayers are larger, key revenue contributors, and file declarations more promptly.

9.   Following the LTO's re-establishment, improvements in tax reporting and payments were notably greater among LTO taxpayers compared to others (Figure 3). LTO taxpayers showed comparatively greater increase in their reported VAT turnover and employee numbers than non-LTO taxpayers, suggesting improved compliance and reporting due to the LTO (a rightward shift in the distribution show in the figure below). This results in a significant increase in tax assessments and accrued tax paid.

Figure 3. Potential Effects of LTO on Tax Reporting and Payments in Georgia

VAT turnover

Employee

Total tax final assessment

Accrued tax paid
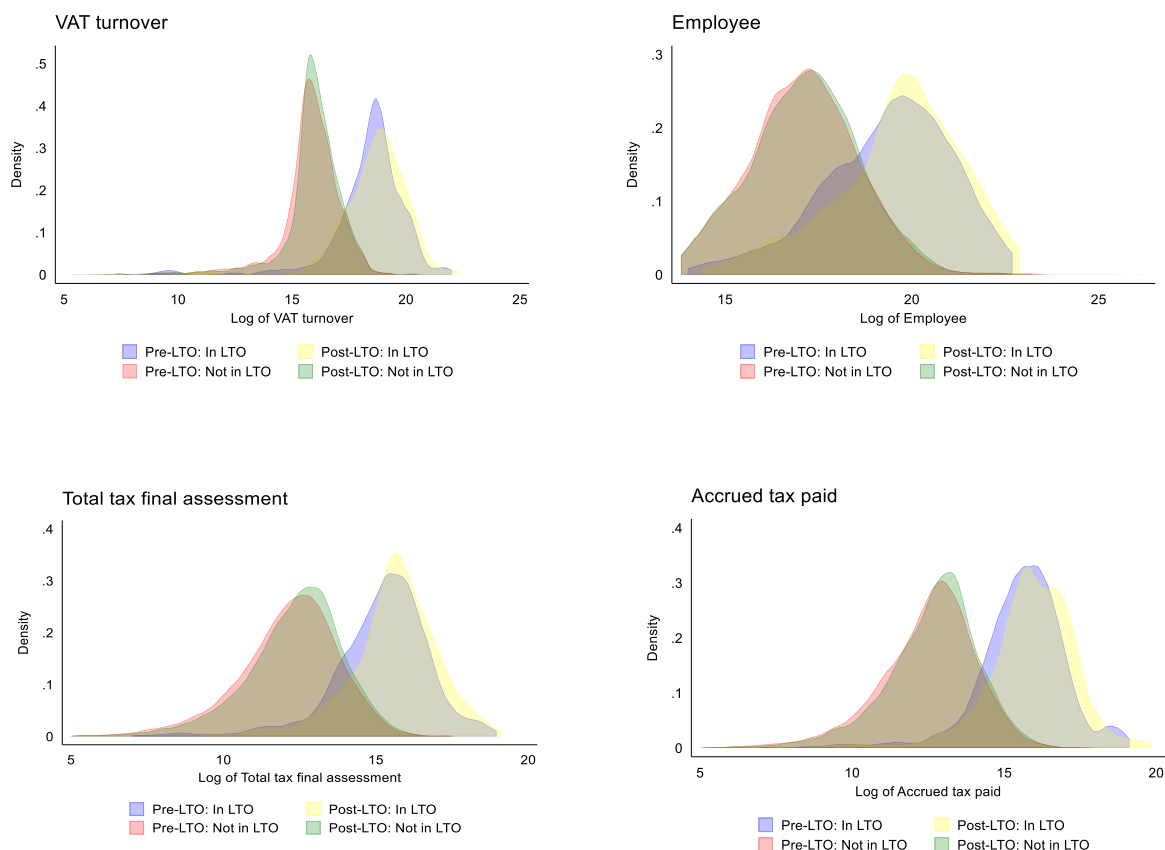
Sources: GRS, IMF staff calculations

C.   Empirical Framework

10.   To estimate the revenue impact of LTO, this analysis applies a weighted difference-in-differences approach. Building on Basri et al. (2021), the analysis compares LTO-assigned taxpayers (treatment group) with those never assigned to the LTO in 2021 or 2024 (control group). The probability of LTO assignment is estimated using selection criteria (VAT turnover, exports, net property value, and employees) and Covariate Balancing Propensity Score (CBPS) weights are applied to ensure perfect balance between groups and mitigate selection bias (Annex Table 1). Common support restrictions are imposed by trimming extreme VAT turnover values to ensure that for every treated unit, there is at least one comparable control unit (Annex Figure 1). The final model includes taxpayer and year fixed effects and focuses on outcomes such as tax assessments and enforcement actions, as specified in the equation below:

$$y_{i,t}^k = \alpha_i + \delta_t + \beta^k \times InLTU_i + \theta X_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where $y_{i,t}^k$ represents the outcome variable k (e.g., final, initial, or measures of tax enforcement or voluntary compliance) for taxpayer i in year t. $InLTU_i = POST_t \times LTU_i$ is a binary indicator variable that equals to 1 if taxpayer i is assigned to the LTO and for the years after LTO establishment and 0 otherwise. $POST_t$ is a binary indicator variable equal to 1 for the years after LTO establishment (2022–24) and 0 before.[7] LTU_i is a binary indicator variable equal to 1 if taxpayer i is assigned to the LTO (treated) and 0 otherwise (control). The coefficient of interest, β^k, represents the difference-in-differences average treatment effect estimate of the LTO effect on the outcome variable k. $X_{i,t}$ is a set of control variables, including the logarithm of VAT turnover, the logarithm of exports, the logarithm of net property value, and the logarithm of the number of employees. α_i and δ_t are taxpayer and year fixed effects, which capture time-invariant characteristics of each taxpayer and account for time-specific shocks that affect all taxpayers in year t, such as the COVID-19 pandemic, respectively. $\varepsilon_{i,t}$ is the error term.

D. The Revenue Yields and Taxpayers' Behavioral Changes from Georgia's LTO

11.   The reintroduction of the LTO in 2021 boosted tax revenue by approximately 0.4 percent of GDP, all while incurring minimal administrative and operational costs, with the impact increasing over time (Annex Table 2 and Figure 4). The average treatment effect estimates show a statistically significant and positive impact across all tax types, both for final and initial assessments.

- **LTO resulted in a substantial increase of 1.4 million GEL in final tax assessments per taxpayer annually**, indicating improved compliance and enforcement. The largest increase occurred in VAT, with an average rise of 666 thousand GEL per taxpayer per year, followed by WHD (558 thousand GEL) and DPT (175 thousand GEL).

- **The total estimated effect on final tax assessments for all LTO taxpayers is around 0.4 percent of GDP.**[8] VAT accounted for 0.21 percent of GDP, WHD contributed 0.17 percent of GDP, and DPT's contribution, though smaller, remained significant at 0.05 percent of GDP.

- **The LTO's operating costs are relatively low, estimated at 7.7 million GEL, a small fraction of the revenue gains, highlighting its cost-effectiveness**.[9]

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[7] Recall that the LTO was introduced in September 2021 and took effect thereafter. The analysis therefore considers the three remaining months of the year 2021 as being part of pre-LTO period. Thus, the years 2022–24 are considered as the post-LTO period.

[8] To put these findings into perspective, we compute the total effect for all LTO taxpayers, rather than limiting it to those within the common support. Given that the LTO taxpayers excluded from the analysis are typically larger than those in the estimation sample, assuming that all LTO taxpayers experience the same increase in tax assessments, in GEL terms, as the treated LTO taxpayers provides a reasonable lower bound.

[9] The net return for the GRS remains significantly positive, as the administrative and operating costs of the LTO are relatively low compared to the revenue gains. The LTO operates with a staff of 47 employees, each earning an average

- **Total initial tax assessments also saw a substantial increase, with an estimated average effect of 1.3 million GEL per LTO taxpayer per year**, compared to 1.4 million GEL for final assessments. This suggests that a significant portion of the revenue gain from LTO assignment is captured in the initial assessment, although further adjustments are made before the final assessment.

- **The LTO's impact strengthened over time, with the largest gains recorded in 2024, underscoring that tax administration reforms take time to reach full effectiveness (Figure 4 and Annex Table 3)**. In 2022, the first year of the new LTO, the effect on tax liabilities was positive and statistically significant, but smaller than in 2024. Specifically, the estimated effect on total final tax assessments increased from 1.1 million GEL per taxpayer in 2022 to 1.9 million GEL in 2024. A similar pattern was seen across most tax types and initial assessments.

Figure 4. Revenue Yields in Georgia from the LTO

Sources: GRS, IMF staff calculations.

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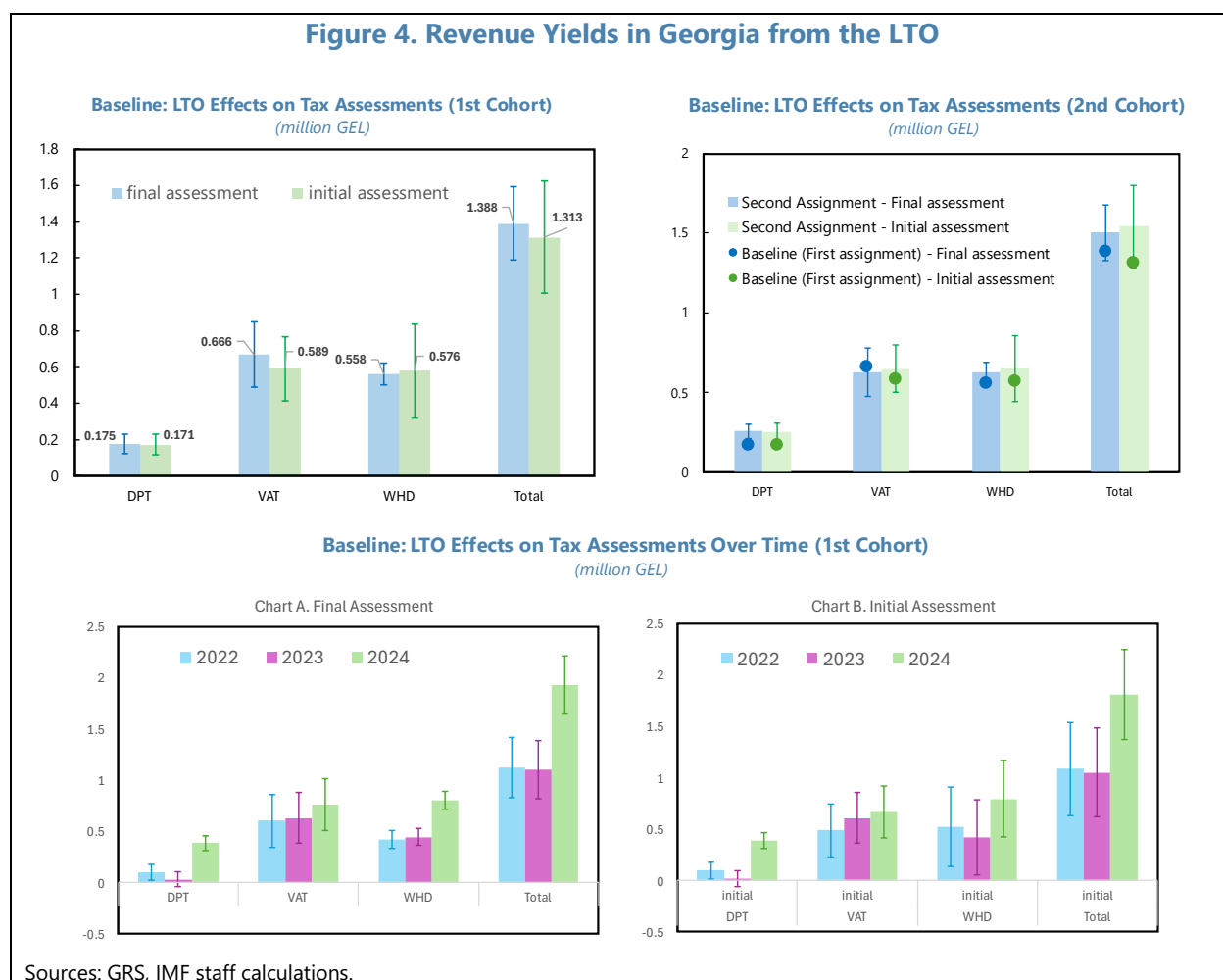
salary of 4,572 GEL, resulting in a total staff cost of approximately 2.6 million GEL. Assuming that other administrative and operational costs (such as capital and goods) are twice as large, the total operating cost amounts to 7.7 million GEL. This represents a mere 2.9 percent of the total LTO effect, underscoring the high cost-effectiveness of the LTO in revenue collection.

12.   Anecdotal evidence supports these findings. A 2023 survey found that 98 percent of large taxpayers were satisfied with the LTO's services, and 80 percent reported that their assigned officer improved their understanding and compliance. On enforcement, the LTO identified 67 high-risk companies (mainly for under-reporting) flagging over 259 million GEL in potential tax losses.

13.   Expanding the LTO to include the 2024 cohort further increased its impact, with tax assessments rising by about 0.7 percent of GDP (Annex Table 4 and Figure 4). Total final tax assessments when both cohorts are considered rose from 1.4 to 1.5 million GEL per taxpayer per year, and initial assessments from 1.3 to 1.5 million GEL compared to increase for the first cohort only. These findings confirm that expanding the LTO significantly enhanced tax collection. Spillover effects also played a role: taxpayers nearing the LTO threshold proactively improved compliance (anticipatory compliance); non-LTO firms aligned their practices to maintain business with LTO taxpayers (business-to-business spillovers); and some firms strategically adjusted their behavior either to enter or avoid the LTO. Together with the higher number of LTOs in 2024, these factors magnified the positive impact of the LTO.

14.   Analysis of firms changing LTO status in 2024 suggests that revenue gains are persistent but some, especially those exiting the LTO, appear to strategically avoid scrutiny (Annex Table 5 and Figure 5). It reaffirms the importance of maintaining strong LTO oversight and suggests that careful management of threshold criteria is crucial to sustain and maximize compliance gains.

- **Taxpayers who remained in the LTO showed consistently large and growing increases in tax assessments,** with a major increase in 2024, reflecting sustained reform, intensified enforcement, and improved compliance.

- **Taxpayers who dropped into the LTO in 2024 also exhibited large and immediate compliance gains.** This highlights the LTO's powerful impact on newly assigned taxpayers and confirms that stricter oversight and better services drive stronger compliance. Limited effects before formal assignment suggest minor anticipatory behavior, especially for VAT and WHD, due to spillovers and perceived enforcement risks.

- **By contrast, taxpayers that dropped out of the LTO showed weaker or even negative trends, especially for DPT and WHD, indicating behavioral responses to avoid LTO scrutiny.** However, VAT compliance remained resilient due to its structural enforcement mechanisms. These behavioral adjustments by taxpayers exiting the LTO may have led to a revenue loss of about 0.1 percent of GDP.

Figure 5. Revenue Yields in Georgia over Time and Behavioral Changes

Baseline: LTO Effects on Tax Assessments Over Time and Behavioral Changes
(million GEL)

Sources: GRS, IMF staff calculations.
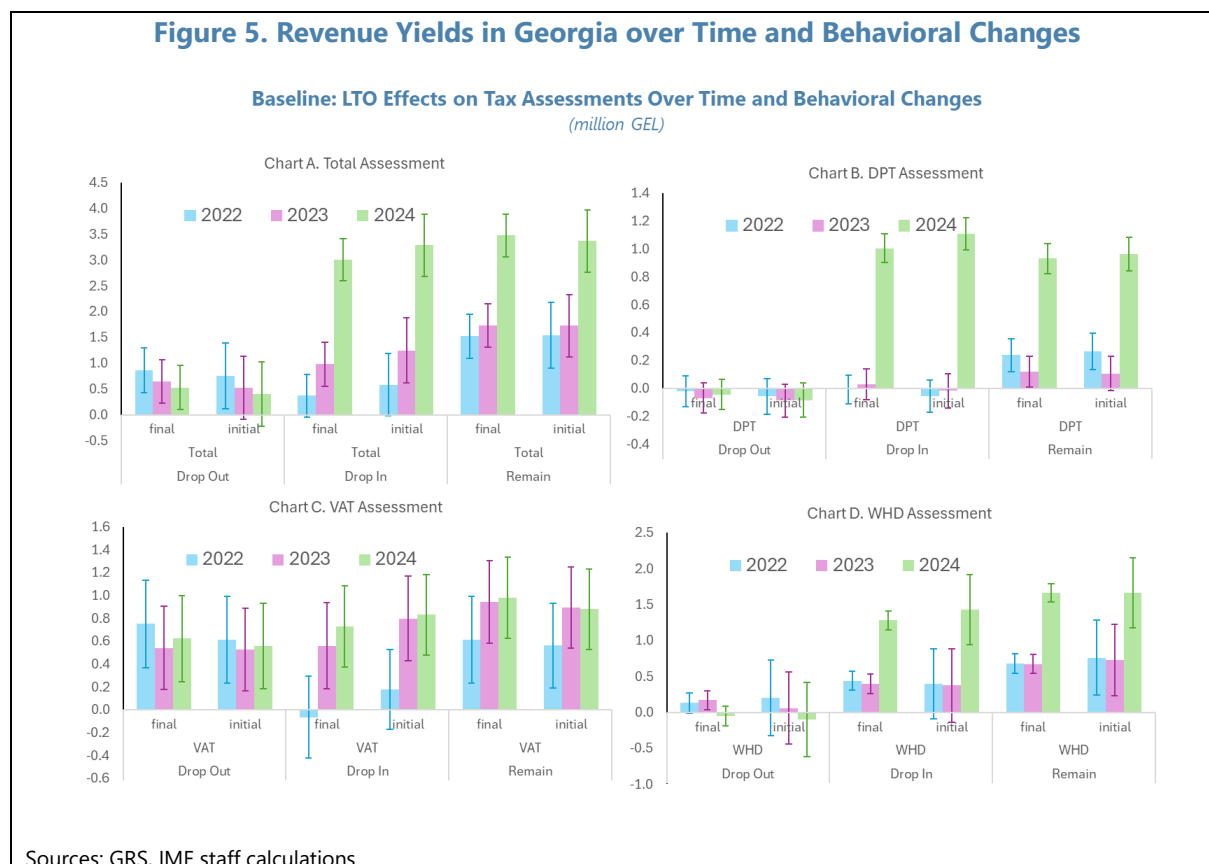
E.   A Dual Approach That Delivers: Enhancing Taxpayer Services and Strengthening Enforcement

15.   The increase in tax assessments under the LTO is driven by two main channels: stronger enforcement and improved voluntary compliance through better taxpayer services. In theory, first, stronger enforcement reduces tax evasion by bringing hidden business activities "on the books." Heightened scrutiny raises the cost of evasion, leading taxpayers to fully declare revenues and operating costs, thereby increasing tax liabilities. Second, the LTO's enhanced taxpayer services—advisory support, education, and assistance—lower taxpayers' compliance costs, encouraging more accurate and voluntary self-assessments.

16.   The LTO has significantly improved compliance, strengthened enforcement, and enhanced administrative efficiency (Annex Tables 6 and 7, Figure 6). LTO assignment increases accrual tax paid and the likelihood of receiving tax collection letters, demonstrating stronger enforcement. At the same time, it reduces the probability of submitting additional DPT and VAT corrections and lowers the probability of audits, indicating improved voluntary compliance and better upfront reporting. Importantly, lower audit needs may suggest that the LTO model achieves compliance gains at lower administrative costs. Furthermore, the analysis confirms that LTO enforcement is effectively targeted at higher-risk taxpayers.

Figure 6. LTO Effects on Tax Enforcement and Compliance Measures in Georgia

Channels: LTO Effects on Tax Enforcement and Compliance Measures
(million GEL)

Channel: LTO Effects on Final Tax Assessments Conditional on Receiving an Underpayment Letter
(million GEL)

Channel: LTO Effects on Final Tax Assessments Conditional on Receiving a Tax Collection Letter
(million GEL)

Channel: LTO Effects on Final Tax Assessments Conditional on Being Audited
(million GEL)

Sources: GRS, IMF staff calculations.

F.   Sectoral Analysis

17.   The impact of the LTO varies significantly across sectors. Industries with stronger paper trails and formalized operations—such as information technology and communication, transportation and storage, and utilities—respond more strongly to LTO oversight, due to easier enforcement and enhanced voluntary compliance. In contrast, sectors with limited documentation or and weaker compliance history, such as wholesale and retail trade, finance, construction, manufacturing, show weaker or even negative responses, consistent with models of persistent evasion habits.

Figure 7. LTO Effects across Sectors in Georgia

Sensitivity: LTO Effects on Tax Assessments by Economic Sectors, Stronger Effects
(million GEL)

Sensitivity: LTO Effects on Tax Assessments by Economic Sectors, Weaker Effects
(million GEL)

Sources: GRS, IMF staff calculations.
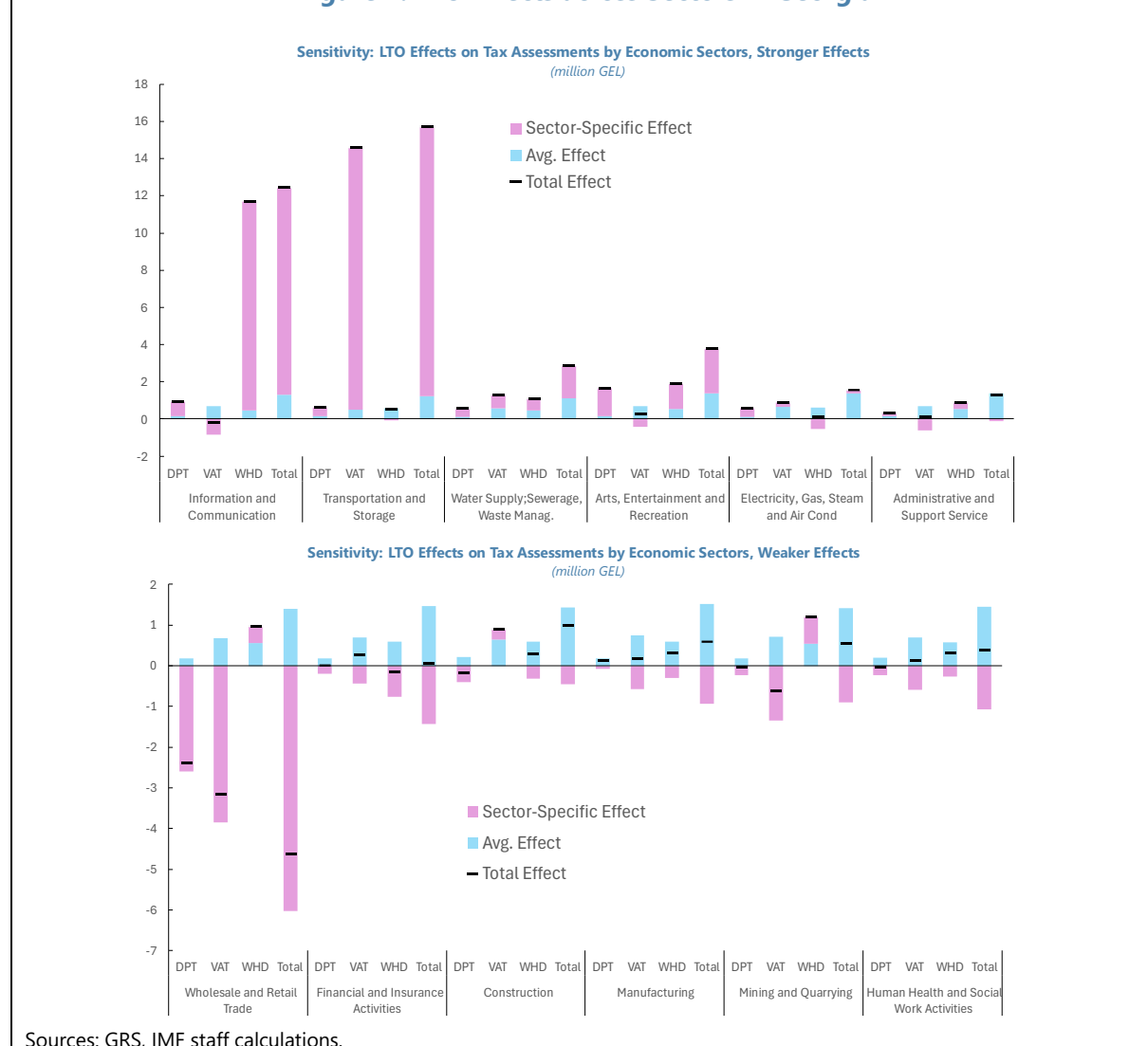
G.   Conclusion and Recommendations

18.   Targeting large taxpayers through the LTO has significantly strengthened revenue collection in Georgia, yielding gains of 0.4 to 0.7 percent of GDP. Sustained success hinges on a risk-based approach, strong enforcement, tailored taxpayer services and communication, and, critically, robust governance. Taxpayers respond to reforms in diverse ways, some adjusting behavior to avoid oversight. This underscores the need for continuous monitoring and targeted strategies to address strategic avoidance, especially in sectors with weak paper trails and higher evasion risks. Going forward, policy efforts should focus on strengthening CRM systems, enhancing enforcement and service orientation, and expanding LTO coverage to include consolidated economic groups.

References

Almunia, M., & Lopez-Rodriguez, D. (2018). Under the radar: The effects of monitoring firms on tax compliance. *American Economic Journal: Economic Policy*, *10*(1), 1-38.

Basri, M. C., Felix, M., Hanna, R., & Olken, B. A. (2021). Tax administration versus tax rates: evidence from corporate taxation in Indonesia. *American Economic Review*, *111*(12), 3827-3871.

Ebeke, C., Mansour, M., & Rota-Graziosi, G. (2016). *The power to tax in sub-Saharan Africa: LTUs, VATs, and SARAs* (No. P154). FERDI Working Paper.

Annex I. Empirical Results

Table I.1. Georgia: Balance Diagnostics in LTO Selection Criteria before and after Sample Weighting

	(I) Unweighted Sample				(II) Weighted Sample				(9) Obs.
	(1) Treated	(2) Control	(3) Std-diff	(4) Var-ratio	(5) Treated	(6) Control	(7) Std-diff	(8) Var-ratio	
Panel A: Common Support [2.5;99.9]. Sample: all years									
VAT turnover	142.5	16.1	1.6	31.5	43.1	43.1	0.0	0.2	21,483
Export	26.8	1.1	0.3	368.6	5.9	5.9	0.0	0.4	21,483
Net property	53.8	6.3	0.6	6.8	49.7	49.7	0.0	0.1	21,483
Employee	572.7	110.1	0.3	0.2	433.0	433.0	0.0	0.1	21,483
Panel B: Common Support [2.5;99.9]. Sample: 2021 year									
VAT turnover	150.3	15.2	1.9	34.9	42.5	42.5	0.0	0.3	2,762
Export	32.8	1.2	0.2	1236.9	3.9	3.9	0.0	7.4	2,762
Net property	57.4	6.1	0.6	8.5	85.2	85.2	0.0	0.3	2,762
Employee	600.5	84.0	0.8	7.4	342.5	342.5	0.0	0.2	2,762

Notes: Rubin (2001) suggests the use the absolute value of the standardized difference (Std-diff) as a balance measure for the first moment, where the balance is defined by absolute values below 0.25. He also suggests the use of the ratio of treated and control variances (Var-ratio) as a balance measure for the second moment, where the balance is defined by values close to 1.0, and variables are out of balance if the variance ratio is greater than 2.0 or less than 0.5.

Figure I.1. Georgia: Common Support Restrictions for VAT Turnover
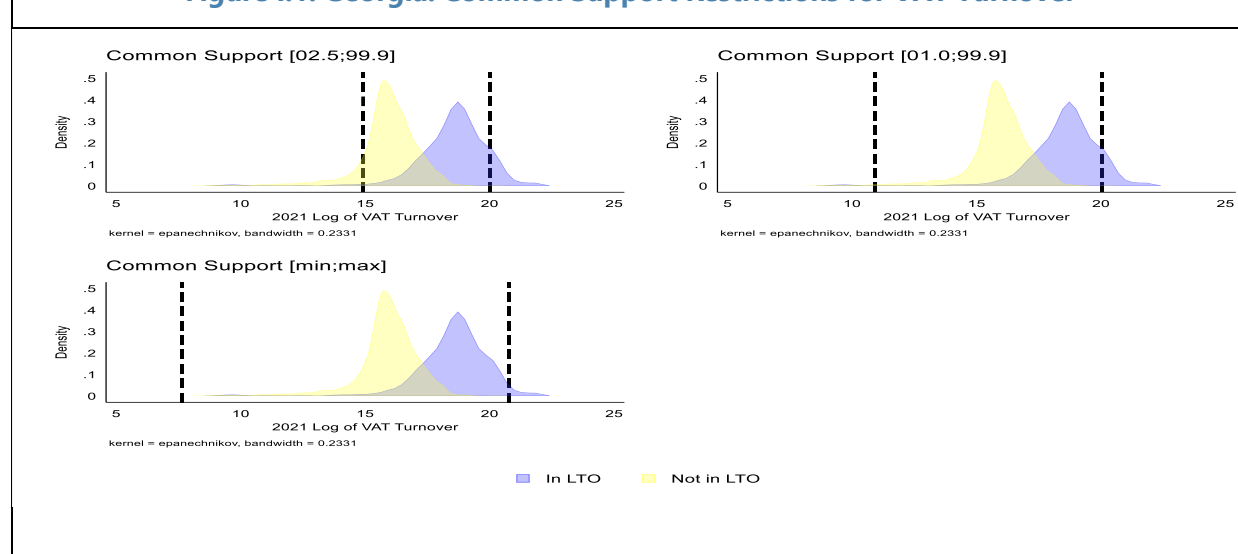
Notes: This figure shows the distributions of VAT turnover for LTO and non-LTO taxpayers before and after LTO introduction in 2021. Dotted black lines indicate the lower bound and upper bound of the percentile common support. For Common Support [02.5;99.9], we dropped taxpayers that fall below the 2.5th percentile and above the 99.9th percentile of the VAT turnover distribution in either the treated or control group. For common support [1;99.9], we dropped taxpayers that fall below the 1st percentile and above the 99.9th percentile of the VAT turnover distribution in either the treated or control group. For common support [min; max], we drop taxpayers that fall below the minimum and above the maximum of the VAT turnover distribution in either the treated or control group.

	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
Table I.2. Georgia: LTO's First Cohort Assignment Effect on Tax Assessments									
	Final Assessment					**Initial Assessment**			
	fDPT	fVAT	fWHD	fTOT		iDPT	iVAT	iWHD	iTOT
lnLTO	0.175***	0.666***	0.558***	1.388***		0.171***	0.589***	0.576***	1.313***
	(0.026)	(0.091)	(0.031)	(0.103)		(0.028)	(0.090)	(0.133)	(0.158)
Observations	20744	21047	21041	21047		15192	20421	19566	20876
# of LTO	165	176	176	176		151	170	172	175
# of Non-LTO	3440	3481	3478	3481		2238	3306	3124	3424
Total Effect (million GEL)	33.237	126.479	106.016	263.787		32.418	111.916	109.476	249.453
Total Effect (Percent of GDP)	0.054	0.205	0.172	0.428		0.053	0.182	0.178	0.405
Pre-treatment Unweighted Diff.	0.517	0.886	2.335	3.707		0.524	1.075	2.248	3.762
P-Value Unweighted Diff.	0.001	0.114	0.000	0.000		0.003	0.057	0.000	0.000
Pre-treatment Weighted Diff.	0.034	-0.514	0.784	0.297		0.048	-0.360	0.676	0.416
P-Value Weighted Diff.	0.340	0.159	0.287	0.719		0.200	0.281	0.387	0.611
Std. Unweighted Difference	0.272	0.139	0.990	0.502		0.268	0.172	0.942	0.518
Std. Weighted Difference	0.047	-0.146	0.201	0.054		0.069	-0.109	0.169	0.078

Notes: This table presents estimates of the LTO's first cohort assignment on tax assessments (in million GEL). Columns 1 to 4 show the effect on final assessments, while columns 5 to 6 show the effect on initial assessments. DPT stands for distributed profit tax assessments, VAT stands for value-added tax assessments, WHD stands for withholding tax, and TOT stands for total tax assessments. The bottom statistics present the number of observations, LTO taxpayers, and non-LTO taxpayers. The total effect in million GEL is obtained by multiplying the average effect per taxpayer per year (given by lnLTO) by the number of LTO taxpayers in the initial database, including those excluded from the analysis for falling outside the common support. The total effect as a percentage of GDP is calculated by dividing the total effect in million GEL by the average real GDP in 2021 prices over 2022–24. Test statistics show the mean differences and associated p-values for each outcome variable when comparing LTO and non-LTO taxpayers in the pre-LTO assignment period (2017–21), alongside the standardized mean differences. Weights are constructed by applying the CBPS to estimate the probability of LTO assignment based on VAT turnover, exports, net property value, and number of employees. Standard errors are clustered at the taxpayer level.

Table I.3. Georgia: LTO's First Cohort Assignment Effect on Tax Assessments Over Time

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Final Assessment				**Initial Assessment**			
	fDPT	fVAT	fWHD	fTOT	iDPT	iVAT	iWHD	iTOT
lnLTO X Year=2022	0.101**	0.602***	0.424***	1.125***	0.097*	0.487***	0.520**	1.083***
	(0.038)	(0.133)	(0.045)	(0.149)	(0.042)	(0.132)	(0.195)	(0.230)
lnLTO X Year=2023	0.033	0.629***	0.443***	1.103***	0.020	0.606***	0.420*	1.048***
	(0.036)	(0.127)	(0.043)	(0.143)	(0.040)	(0.126)	(0.186)	(0.221)
lnLTO X Year=2024	0.386***	0.764***	0.803***	1.931***	0.387***	0.668***	0.791***	1.803***
	(0.036)	(0.129)	(0.043)	(0.145)	(0.040)	(0.128)	(0.188)	(0.224)
Observations	20744	21047	21041	21047	15192	20421	19566	20876
# of LTO	165	176	176	176	151	170	172	175
# of Non-LTO	3440	3481	3478	3481	2238	3306	3124	3424
Effects 2022=2023	0.138	0.869	0.726	0.902	0.137	0.455	0.671	0.898
Effects 2022=2024	0.000	0.320	0.000	0.000	0.000	0.261	0.255	0.011
Effects 2023=2024	0.000	0.385	0.000	0.000	0.000	0.688	0.104	0.005
Total Effect (million GEL)	32.879	126.328	105.768	263.412	31.895	111.530	109.574	249.164
Total Effect (Percent of GDP)	0.051	0.205	0.169	0.423	0.050	0.180	0.176	0.401
Pre-treatment Unweighted Diff.	0.517	0.886	2.335	3.707	0.524	1.075	2.248	3.762
P-Value Unweighted Diff.	0.001	0.114	0.000	0.000	0.003	0.057	0.000	0.000
Pre-treatment Weighted Diff.	0.034	-0.514	0.784	0.297	0.048	-0.360	0.676	0.416
P-Value Weighted Diff.	0.340	0.159	0.287	0.719	0.200	0.281	0.387	0.611
Std. Unweighted Difference	0.272	0.139	0.990	0.502	0.268	0.172	0.942	0.518
Std. Weighted Difference	0.047	-0.146	0.201	0.054	0.069	-0.109	0.169	0.078

Notes: This table presents the year-by-year estimates of the LTO's first cohort assignment on tax assessments (in million GEL). Columns 1 to 4 show the effect on final assessments, while columns 5 to 6 show the effect on initial assessments. DPT stands for distributed profit tax assessments, VAT stands for value-added tax assessments, WHD stands for withholding tax, and TOT stands for total tax assessments. The bottom statistics present the number of observations, LTO taxpayers, and non-LTO taxpayers. The total effect in million GEL is obtained by multiplying the average effect per taxpayer per year (given by *lnLTO*) by the number of LTO taxpayers in the initial database, including those excluded from the analysis for falling outside the common support. The total effect as a percentage of GDP is calculated by dividing the total effect in million GEL by the real GDP in the respective years, averaged over the post-LTO assignment period 2022–24. T-tests show the significance of the differences in the estimates for 2022, 2023, and 2024. Test statistics show the mean differences and associated p-values for each outcome variable when comparing LTO and non-LTO taxpayers in the pre-LTO assignment period (2017–21), alongside the standardized mean differences. Weights are constructed by applying the CBPS to estimate the probability of LTO assignment based on VAT turnover, exports, net property value, and number of employees. Standard errors are clustered at the taxpayer level.

Table I.4. Georgia: LTO's Second Cohort Assignment Effect on Tax Assessments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Final Assessment				**Initial Assessment**			
	fDPT	fVAT	fWHD	fTOT	iDPT	iVAT	iWHD	iTOT
InLTO	0.258***	0.629***	0.631***	1.505***	0.256***	0.650***	0.651***	1.542***
	(0.023)	(0.078)	(0.029)	(0.089)	(0.026)	(0.076)	(0.106)	(0.131)
Observations	23139	23473	23465	23473	16772	22722	21755	23247
# of LTO	245	259	259	259	223	251	251	256
# of Non-LTO	3551	3593	3590	3593	2264	3386	3197	3517
Total Effect (million GEL)	70.983	172.992	173.626	413.827	70.343	178.797	178.922	424.047
Total Effect (Percent of GDP)	0.115	0.281	0.282	0.672	0.114	0.290	0.290	0.688
Pre-treatment Unweighted Diff.	0.483	0.712	2.037	3.206	0.479	0.836	1.957	3.218
P-Value Unweighted Diff.	0.001	0.093	0.000	0.000	0.002	0.049	0.000	0.000
Pre-treatment Weighted Diff.	0.047	-0.479	1.210	0.768	0.047	-0.418	1.139	0.811
P-Value Weighted Diff.	0.116	0.118	0.108	0.357	0.152	0.154	0.152	0.332
Std. Unweighted Difference	0.247	0.127	0.863	0.474	0.244	0.152	0.823	0.485
Std. Weighted Difference	0.065	-0.139	0.302	0.139	0.066	-0.126	0.277	0.149

Notes: This table presents estimates of the LTO's second cohort assignment on tax assessments (in million GEL). Columns 1 to 4 show the effect on final assessments, while columns 5 to 6 show the effect on initial assessments. DPT stands for distributed profit tax assessments, VAT stands for value-added tax assessments, WHD stands for withholding tax, and TOT stands for total tax assessments. The bottom statistics present the number of observations, LTO taxpayers, and non-LTO taxpayers. The total effect in million GEL is obtained by multiplying the average effect per taxpayer per year (given by *InLTO*) by the number of LTO taxpayers in the initial database, including those excluded from the analysis for falling outside the common support. The total effect as a percentage of GDP is calculated by dividing the total effect in million GEL by the average real GDP in 2021 prices over 2022–24. Test statistics show the mean differences and associated p-values for each outcome variable when comparing LTO and non-LTO taxpayers in the pre-LTO assignment period (2017–21), alongside the standardized mean differences. Weights are constructed by applying the CBPS to estimate the probability of LTO assignment based on VAT turnover, exports, net property value, and number of employees. Standard errors are clustered at the taxpayer level.

Table I.5. Georgia: Triple Difference. LTO's Second Cohort Assignment Effect on Tax Assessments over Time and Effects of Threshold Changes								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Final Assessment				Initial Assessment			
	fDPT	fVAT	fWHD	fTOT	iDPT	iVAT	iWHD	iTOT
InLTO X Drop Out X Year=2022	-0.020	0.752***	0.130	0.861***	-0.055	0.614**	0.206	0.760*
	(0.056)	(0.194)	(0.070)	(0.223)	(0.065)	(0.195)	(0.268)	(0.326)
InLTO X Drop Out X Year=2023	-0.067	0.541**	0.171*	0.645**	-0.085	0.528**	0.060	0.525
	(0.054)	(0.186)	(0.067)	(0.213)	(0.060)	(0.185)	(0.256)	(0.312)
InLTO X Drop Out X Year=2024	-0.042	0.623**	-0.048	0.531*	-0.082	0.558**	-0.099	0.403
	(0.055)	(0.191)	(0.069)	(0.219)	(0.062)	(0.191)	(0.263)	(0.321)
InLTO X Drop In X Year=2022	-0.006	-0.063	0.441***	0.370	-0.053	0.180	0.396	0.580
	(0.053)	(0.182)	(0.066)	(0.209)	(0.059)	(0.179)	(0.249)	(0.308)
InLTO X Drop In X Year=2023	0.032	0.559**	0.395***	0.981***	-0.016	0.800***	0.376	1.248***
	(0.056)	(0.192)	(0.070)	(0.220)	(0.062)	(0.188)	(0.261)	(0.323)
InLTO X Drop In X Year=2024	1.005***	0.731***	1.281***	3.007***	1.108***	0.832***	1.430***	3.290***
	(0.053)	(0.182)	(0.066)	(0.209)	(0.059)	(0.179)	(0.249)	(0.308)
InLTO X Remain LTO X Year=2022	0.240***	0.614**	0.683***	1.523***	0.266***	0.563**	0.762**	1.544***
	(0.060)	(0.193)	(0.070)	(0.221)	(0.067)	(0.189)	(0.265)	(0.324)
InLTO X Remain LTO X Year=2023	0.122*	0.942***	0.675***	1.734***	0.108	0.896***	0.729**	1.726***
	(0.057)	(0.184)	(0.067)	(0.212)	(0.063)	(0.181)	(0.252)	(0.311)
InLTO X Remain LTO X Year=2024	0.932***	0.982***	1.665***	3.478***	0.962***	0.882***	1.667***	3.371***
	(0.055)	(0.182)	(0.066)	(0.209)	(0.061)	(0.180)	(0.249)	(0.307)
Observations	23139	23473	23465	23473	16772	22722	21755	23247
# of LTO	245	259	259	259	223	251	251	256
# of Non-LTO	3551	3593	3590	3593	2264	3386	3197	3517
Pre-treatment Unweighted Diff.	0.483	0.712	2.037	3.206	0.479	0.836	1.957	3.218
P-Value Unweighted Diff.	0.001	0.093	0.000	0.000	0.002	0.049	0.000	0.000
Pre-treatment Weighted Diff.	0.047	-0.479	1.210	0.768	0.047	-0.418	1.139	0.811
P-Value Weighted Diff.	0.116	0.118	0.108	0.357	0.152	0.154	0.152	0.332
Std. Unweighted Difference	0.247	0.127	0.863	0.474	0.244	0.152	0.823	0.485
Std. Weighted Difference	0.065	-0.139	0.302	0.139	0.066	-0.126	0.277	0.149

Notes: This table presents the year-by-year estimates of the LTO's second cohort assignment on tax assessments (in million GEL) and threshold changes. Columns 1 to 4 show the effect on final assessments, while columns 5 to 6 show the effect on initial assessments. DPT stands for distributed profit tax assessments, VAT stands for value-added tax assessments, WHD stands for withholding tax, and TOT stands for total tax assessments. The bottom statistics present the number of observations, LTO taxpayers, and non-LTO taxpayers. Test statistics show the mean differences and associated p-values for each outcome variable when comparing LTO and non-LTO taxpayers in the pre-LTO assignment period (2017–21), alongside the standardized mean differences. Weights are constructed by applying the CBPS to estimate the probability of LTO assignment based on VAT turnover, exports, net property value, and number of employees. Standard errors are clustered at the taxpayer level.

Table I.6. Georgia: Channels. LTO's First Cohort Assignment Effect on Measures of Compliance and Enforcement

	(1) Acc. tax paid	(2) Add. DPT	(3) Add. VAT	(4) Add. WHD	(5) Und-pay. Let.	(6) Tax Coll. Let.	(7) Late dec.	(8) Late pay.	(9) Audit
lnLTO	0.869***	-0.126***	-0.054*	0.013	-0.019	0.108***	0.003	-0.004	-0.053*
	(0.111)	(0.028)	(0.026)	(0.031)	(0.028)	(0.025)	(0.017)	(0.025)	(0.022)
Observations	21047	21047	21047	21047	21047	21047	21047	21047	21047
# of LTO	176	176	176	176	176	176	176	176	176
# of Non-LTO	3481	3481	3481	3481	3481	3481	3481	3481	3481

Notes: This table presents estimates of the LTO's first cohort assignment on measures of compliance and enforcement. The outcome variable in column 1 is accrual tax paid. The outcome variables in columns 2 to 4 are binary variables equal to 1 if the taxpayer makes additional DPT, VAT, and WHD assessments, respectively. The outcome variables in columns 5 to 9 are binary variables equal to 1 if the taxpayer receives an underpayment letter, a tax collection letter, makes a late declaration, makes a late payment, or is audited, respectively. DPT stands for distributed profit tax assessments; VAT stands for value-added tax assessments; WHD stands for withholding tax; and TOT stands for total tax assessments. The bottom statistics present the number of observations, LTO taxpayers, and non-LTO taxpayers. Weights are constructed by applying the CBPS to estimate the probability of LTO assignment based on VAT turnover, exports, net property value, and number of employees. Standard errors are clustered at the taxpayer level

Table I.7. Georgia: Channels. LTO's First Cohort Assignment Effect on Tax Assessments Conditional on Enforcement Measures

	(1) fDPT	(2) fVAT	(3) fWHD	(4) fTOT	(5) fDPT	(6) fVAT	(7) fWHD	(8) fTOT	(9) fDPT	(10) fVAT	(11) fWHD	(12) fTOT
Cond	Receive under-payment letter				Receive tax collection letter				Be audited			
lnLTO	0.295***	1.122***	0.637***	2.023***	0.194***	0.721***	0.597***	1.499***	0.180***	0.440***	0.641***	1.249***
	(0.036)	(0.125)	(0.042)	(0.140)	(0.028)	(0.100)	(0.034)	(0.113)	(0.028)	(0.100)	(0.034)	(0.113)
lnLTOXCond	-0.259***	-1.025***	-0.189**	-1.439***	-0.109	-0.404	-0.254**	-0.754**	-0.003	1.524***	-0.344***	1.182***
	(0.054)	(0.188)	(0.064)	(0.212)	(0.069)	(0.248)	(0.084)	(0.280)	(0.075)	(0.269)	(0.091)	(0.304)
Cond	-0.005	0.051	0.002	0.048	0.003	0.052	0.029**	0.084*	-0.008	-0.041	-0.011	-0.060
	(0.009)	(0.031)	(0.010)	(0.035)	(0.009)	(0.032)	(0.011)	(0.036)	(0.010)	(0.037)	(0.013)	(0.042)
CondXPost	0.004	-0.008	-0.034*	-0.037	-0.004	0.039	-0.060***	-0.026	0.004	-0.111	0.008	-0.099
	(0.011)	(0.041)	(0.014)	(0.046)	(0.013)	(0.047)	(0.016)	(0.053)	(0.020)	(0.072)	(0.024)	(0.081)
LTOXCond	0.002	0.512***	-0.009	0.506***	0.057	-0.024	0.186***	0.215	0.040	-0.402**	0.335***	-0.027
	(0.036)	(0.127)	(0.043)	(0.143)	(0.046)	(0.167)	(0.056)	(0.188)	(0.040)	(0.142)	(0.048)	(0.160)
Observations	20744	21047	21041	21047	20744	21047	21041	21047	20744	21047	21041	21047
# of LTO	165	176	176	176	165	176	176	176	165	176	176	176
# of Non-LTO	3440	3481	3478	3481	3440	3481	3478	3481	3440	3481	3478	3481
Pre-treatment Unweighted Diff.	0.517	0.886	2.335	3.707	0.517	0.886	2.335	3.707	0.517	0.886	2.335	3.707
P-Value Unweighted Diff.	0.001	0.114	0.000	0.000	0.001	0.114	0.000	0.000	0.001	0.114	0.000	0.000
Pre-treatment Weighted Diff.	0.034	-0.514	0.784	0.297	0.034	-0.514	0.784	0.297	0.034	-0.514	0.784	0.297
P-Value Weighted Diff.	0.340	0.159	0.287	0.719	0.340	0.159	0.287	0.719	0.340	0.159	0.287	0.719
Std. Unweighted Difference	0.272	0.139	0.990	0.502	0.272	0.139	0.990	0.502	0.272	0.139	0.990	0.502
Std. Weighted Difference	0.047	-0.146	0.201	0.054	0.047	-0.146	0.201	0.054	0.047	-0.146	0.201	0.054

Notes: This table presents estimates of the LTO's first cohort assignment on final tax assessments conditional on enforcement measures. In columns 1 to 4, the conditional variable is "receive an under-payment letter". In columns 5 to 8, the conditional variable is "receive a tax collection letter". In columns 9 to 12, the conditional variable is "be audited". DPT stands for distributed profit tax assessments; VAT stands for value-added tax assessments; WHD stands for withholding tax; and TOT stands for total tax assessments. The bottom statistics present the number of observations, LTO taxpayers, and non-LTO taxpayers. Test statistics show the mean differences and associated p-values for each outcome variable when comparing LTO and non-LTO taxpayers in the pre-LTO assignment period (2017–21), alongside the standardized mean differences. Weights are constructed by applying the CBPS to estimate the probability of LTO assignment based on VAT turnover, exports, net property value, and number of employees. Standard errors are clustered at the taxpayer level.