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Georgia: Selected Issues

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INTERNATIONAL MONETARY FUND

GEORGIA

Selected Issues

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Approved by the Middle East and Central Asia Department

March 7, 2011

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Chapter II: International Reserve Adequacy

The twin crises of 2008–09 brought out Georgia's exposures to a number of external and internal drains. In view of these vulnerabilities, this chapter assesses whether the current level of reserves is adequate, based on a number of metrics and approaches. It concludes that Georgia's current level of reserves appears indeed adequate. Looking ahead, the challenge for the authorities will be to preserve reserve adequacy while meeting their external repayment obligations.

Chapter III: Inflation Trends and Monetary Policy Options

This chapter compares the trends and volatility of inflation in Georgia with those in peer countries, and examines the response of Georgian inflation to demand and supply (including commodity price) shocks. The relatively high volatility of headline inflation in Georgia is mainly due to food inflation, and the large responsiveness to both supply and demand shocks appears short-lived. The chapter then shows that the interest rate transmission mechanism—although improving recently—remains limited, and suggests using a mix of policy rate and reserve requirement changes as a more effective monetary policy instrument.

Chapter IV: The Challenge of Enhancing Tax Productivity in Georgia

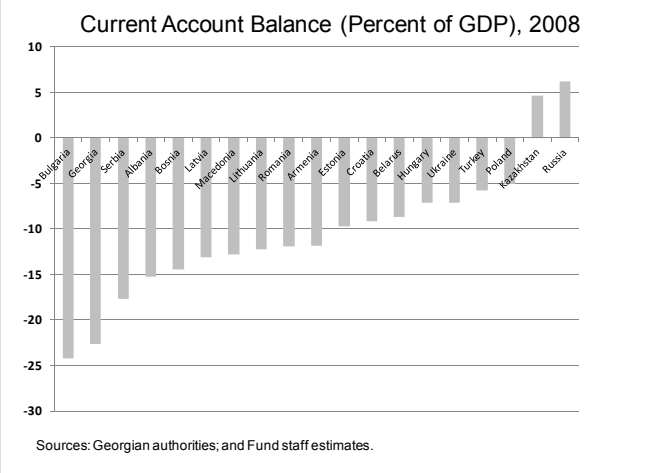
The purpose of this chapter is to assess the scope to increase tax productivity in Georgia by eliminating tax breaks and improving revenue administrative. Our analysis relies on a Georgia-specific decomposition of efficiency gains and on an international comparison. It shows that, at unchanged tax rates, raising the tax-to-GDP ratio and reversing the flattening observed since 2008 presents a challenge. There are few tax breaks in the Georgian tax system and the room to raise CIT and VAT compliances seems limited. Administrative reforms should continue to support PIT.

I. EXCHANGE RATE ASSESSMENT AND COMPETITIVENESS[1]

This chapter explores the impact of the crisis on Georgia's external position. Relying on the CGER macrobalance and external sustainability methodologies, it provides an updated exchange rate assessment; it concludes that, while the lari remains moderately overvalued, the bulk of the major pre-crisis misalignment has been corrected. The chapter also explores recent trends in Georgia's competitiveness: it documents a sluggish post-crisis recovery in export volumes, and highlights the sharp fall in FDI as a potentially relevant factor.

A. Introduction

1. The "twin" crisis of 2008–09 brought about a marked shift in Georgia's external position. The period immediately preceding the crisis was characterized by a surge in private capital inflows—both in the form of FDI and of bank and corporate borrowing. The counterpart of these developments was a sharp widening of Georgia's current account deficit, bringing it at the very high end among comparator countries.



2. Georgia's current account position on the eve of the crisis was widely viewed as unsustainable, and the lari exchange rate as substantially misaligned. All standard exchange rate assessment methodologies pointed to a large lari overvaluation, ranging between 20 and 25 percent.

[1] Prepared by Ioannis Halikias (SPR).

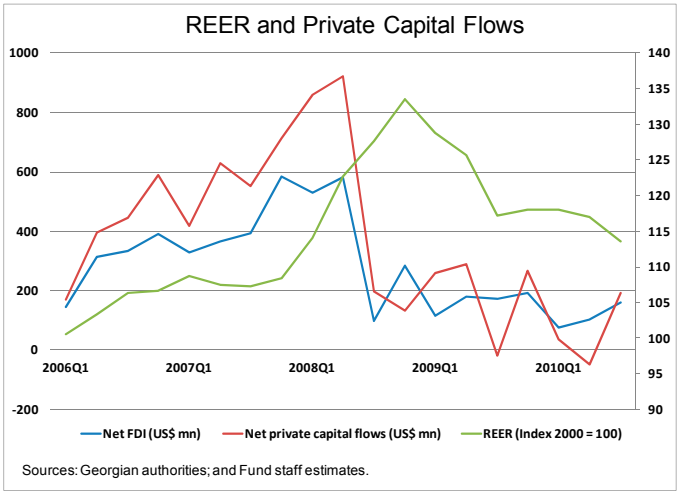
3. The 2008–09 crisis had all the standard features of a sudden stop in capital flows and a current account reversal. Relative to their 2007 peak, net private capital flows collapsed by 15 percentage points of GDP: all major components were affected—although the fall in FDI, at some 10 percentage points of GDP, was particularly pronounced. At the same time, the current account deficit narrowed sharply, with its share in GDP cut in half relative to its pre-crisis level. These developments were accompanied by a sharp lari depreciation.

4. This chapter takes stock of Georgia's post-crisis external adjustment. Specifically, it offers a quantitative assessment of the extent to which the lari's exchange rate correction has brought it close to medium-term equilibrium, and explores developments and future prospects in Georgia's export competitiveness.

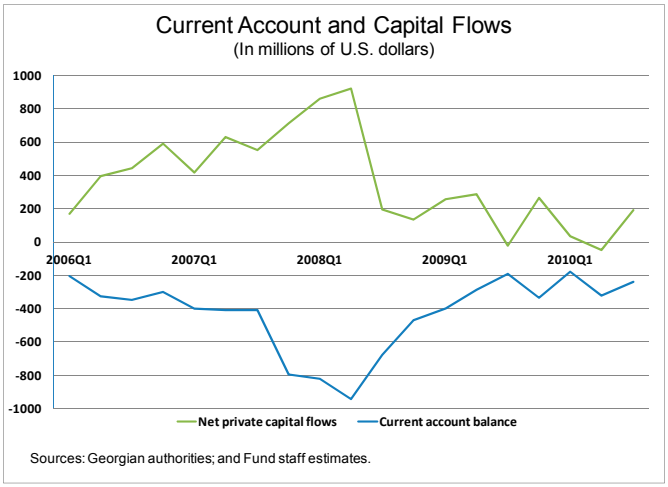
B. Exchange Rate and the External Position—Stylized Facts

5. The crisis brought about a sharp reversal in the lari's exchange rate trends. In the period leading up to the crisis, the lari had experienced a sharp real effective appreciation: at its peak in October 2008, it had appreciated by almost 30 percent in real terms relative to end-2007. In the immediate wake of the crisis, the lari underwent a sharp correction: by mid-2009, it had depreciated by almost 20 percent in real terms relative to its peak. Since mid-2009, movements in the lari's real exchange rate have been much more subdued: it remained broadly stable through May 2010, and depreciated by a further 5 percent since then.

6. The exchange rate has been driven to a large extent by private capital flows. During the pre-crisis period, surging private capital inflows closely mirror the lari's steady real effective appreciation. The collapse in private capital inflows anticipated the crisis by about a quarter; following a brief period of exchange rate defense, the lari entered a period of fairly steady real depreciation.



7. In turn, recent trends point to a strong link between private capital flows and Georgia's current account position. This link is particularly strong in the period immediately preceding the crisis, and during the crisis and its aftermath. The near-mirror-image features of the two series illustrate the sudden stop/current account reversal nature of the crisis.



C. Exchange Rate Assessment

8. This section explores the extent to which the post-crisis correction of the lari exchange rate has brought it closer to medium-term equilibrium. The analysis is conducted on the basis of the CGER's macrobalance (MB) and external sustainability (ES) approaches.[2,3]

MB approach

9. The MB approach is motivated by an intertemporal optimization model of the equilibrium current account, with frictions that inter alia preclude full Ricardian equivalence. On this basis, key determinants of a country's equilibrium current account (or saving-investment norm) include the fiscal position, demographic variables, and medium-term growth potential (all relative to the country's trading partners), as well as (possibly) a country-specific fixed effect to capture possible omitted variables. Additional variables include the oil balance (to capture the impact of oil commodity prices) and, in the specification without fixed effects, the initial net foreign asset position (a predictor of net income flows) and income relative to the U.S. (to

[2] For a detailed description of these methodologies, see L. Lee, G. M. Milesi-Ferretti, J. Ostry, A. Prati, and L. A. Ricci, "Exchange Rate Assessments: CGER Methodologies," *IMF Occasional Paper, 261*, 2008.

[3] On the other hand, the equilibrium exchange rate (ERER) approach was not used. With ERER predicated on the assumption of the exchange rate being at equilibrium on average over the sample period, its application to Georgia would be problematic given limited observations and transition-related structural breaks.

capture potential for convergence). Since Georgia is not part of the CGER exercise, the equation was re-estimated (with and without fixed effects) by including Georgia in the full CGER sample.[4] The parameter estimates are summarized below:

Table I.1. Georgia: Macroeconomic Balance Approach: Current Account Regressions

	Georgia	Coefficients	
	2016 projections	CGER	CGER
Fundamentals		Full sample (fixed effects)	Full sample
(percent of GDP, unless otherwise indicated)			
Fiscal balance	-2.5	0.32	0.39
Old age dependency (percent of population)	26.3	-0.23	-0.20
Population growth (in percent)	0.1	-0.46	-0.35
Oil balance	-5.7	0.31	0.25
Output growth (in percent)	4.4	-0.27	-0.10
Relative Income (in percent of U.S. income)	12.4	…	0.04
Initial net foreign asset position	-102.8	…	0.03
Georgia-specific fixed effect		-2.53	…

Sources: Georgian authorities; and Fund staff estimates.

10. The estimated exchange rate misalignment hinges on comparing the estimated S-I norm with the "underlying" current account position, i.e. the current account corrected for relative cyclical positions, lagged effects of past exchange rate changes, and temporary factors. For the purposes of this exercise, use was made of a medium-term current forecast, projected on the basis of a constant real effective exchange rate.

11. The tabulation below summarizes the key conclusion about the lari's misalignment on the basis of the MB approach:

[4] Data from the October 2010 WEO were used for the estimation.

Table I.2. Georgia: CA Norm and Exchange Rate Assessments

CA Norm (percent of GDP)	
CGER, full sample (fixed effects)	CGER, full sample
-5.2	-3.9

Underlying CA (percent of GDP)	
-7.6	-7.6

Overvaluation (+)/Undervaluation (-) (in percent)	
CGER, full sample (fixed effects)	CGER, full sample
8.9	13.6

Sources: Georgian authorities; and Fund staff estimates

ES approach

12. Under the ES approach, the estimated exchange rate misalignment is based on comparing the underlying current account with the current account balance that stabilizes a country's net foreign asset (NFA) position at its current level—in the case of Georgia the last available observation being the end-2009 level. While the choice of the NFA level to be stabilized is admittedly somewhat arbitrary, the ES approach establishes a ceiling for the current account deficit that avoids an explosive NFA path—a plausible condition for medium-term equilibrium.

13. The tabulation below summarizes the key conclusion about the lari's misalignment on the basis of the ES approach:

Table I.3. External Sustainability Approach (In percent of GDP, unless otherwise noted)	
2009 NFA	-101.2
Nominal growth rate (in USD)	5.8
Underlying CA	-7.6
CA norm using 2009 NFA	-5.6
CA gap	-2.0
Elasticity	-0.27
Misalignment (In percent, - = undervalued)	7.3
Sources: Georgian authorities; and Fund staff estimates.	

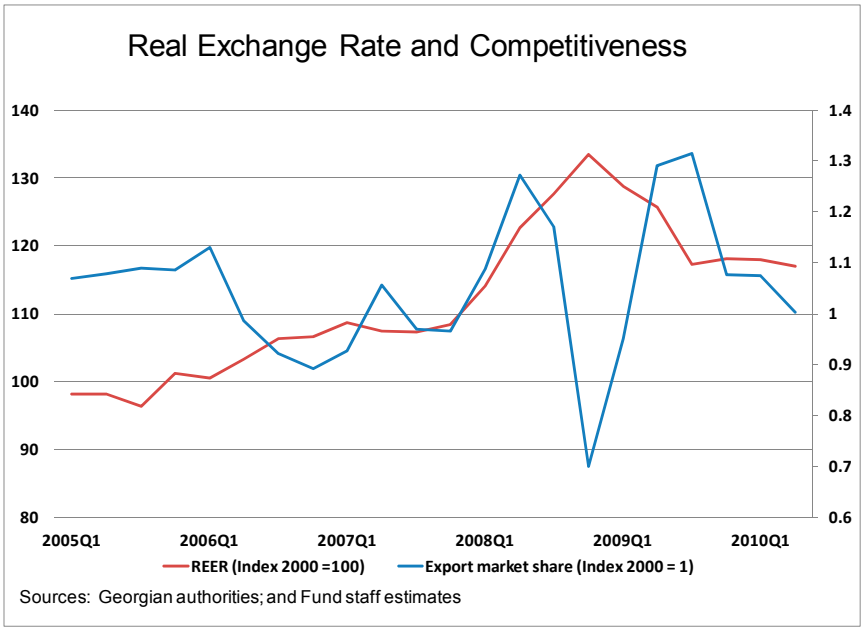
14. The results under the MB and ES approaches paint a broadly consistent picture. While some overvaluation persists, the post-crisis lari exchange rate correction has reduced its degree of misalignment to between ½ and ⅓ of its pre-crisis level, bringing it much closer to medium-term equilibrium. This implies that the lari is now close to levels that do not pose substantial risk of macroeconomic tensions—at least barring further shocks.

D. Export Competitiveness

15. This section assesses the extent to which the exchange rate developments described above have had a bearing on Georgia's export competitiveness. It also explores additional, non-exchange-rate-related, factors that may be relevant for export competitiveness and its prospects.

16. The analysis focuses on changes in Georgia's export market shares, as captured by the growth in export volumes relative to the real growth in Georgia's export markets. The extent to which export market shares are sensitive to exchange rate movements has been viewed with some skepticism, given the composition of Georgia's export basket—and in particular the large share of metals, where Georgia can be plausibly viewed as a price-taker in international markets.

17. The chart below summarizes recent real exchange rate and export market share developments. It is worth noting that, the sharp lari real appreciation during most of 2008 was accompanied by major export market share losses. Symmetrically, the lari's correction in the wake of the crisis was accompanied by substantial export market gains: by mid-2009, Georgia had essentially recovered its pre-2008 export market share peaks. While these developments suggest that the real exchange rate played its role as a transmission variable during the crisis, a number of other factors could also have contributed to the evolution of export market shares around the crisis period.

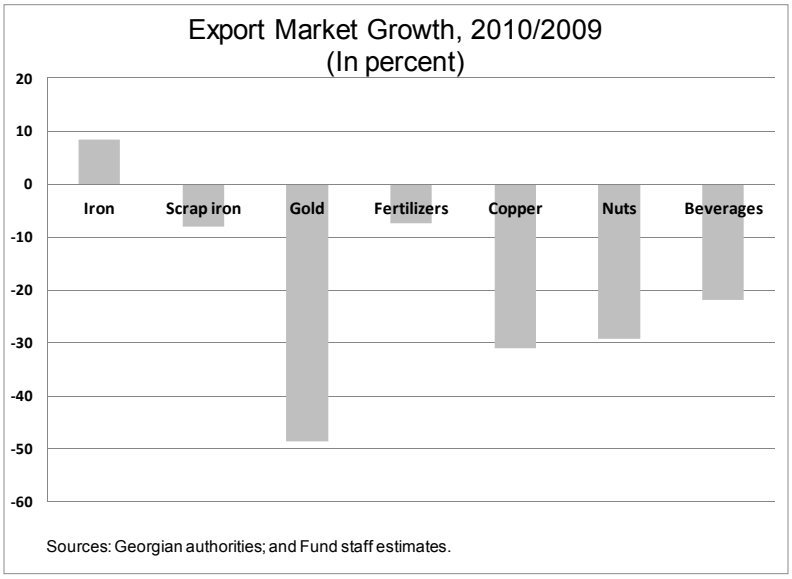


18. In particular, the large (albeit largely temporary) disruptions in trade flows directly caused by the conflict could be partly responsible for the sharp loss of market shares in the last quarter of 2008 and their strong recovery during the first half of 2009. Disentangling the quantitative impact of such factors from the impact of exchange rate movements is not straightforward.

Moreover, the negative correlation between the real effective exchange rate and export market shares is far from perfect. Lack of (or even positive) correlation prior to the crisis should not be surprising, and is in fact quite typical for economies in an early transition phase: the Balassa-Samuelson hypothesis suggests that a rising relative price of tradables to nontradables (or a real appreciation) can be quite compatible with export market gains. The trends during the recovery from the crisis may be more problematic: from late 2009 on, Georgia has experienced renewed export market losses, even as the real exchange rate has remained broadly stable. While it is perilous to generalize from just a few observations, this would suggest that additional, non-exchange-rate-related, factors may be relevant for Georgia's export performance. From a policy perspective, this would suggest that, while allowing the real exchange rate to return fully to medium-term equilibrium would help support export performance, additional constraining factors may need to be addressed.

19. A couple of candidate factors that could be constraining efforts can probably be dismissed, at least in a forward-looking sense. First, it is conceivable that the crisis, and in particular its conflict component, could have entailed loss of access to traditional export markets, which may be difficult to recover. While it is difficult to test this hypothesis directly, trends in the market shares of the main categories of Georgia's sectors during 2009–10 provide little

support: losses in market shares during 2010 appear quite generalized, rather than concentrated on a few categories that could be destined for specific export markets.



20. Second, it could be argued that domestic financing constraints may have disproportionately impacted the export sector. This hypothesis is plausible, given that Georgia suffered one of the deepest credit contractions among crisis countries. While recent data of credit by sector are not available, the importance of this factor is also likely to be limited. In the first place, the deepest phase of credit contraction took place during the crisis itself, when Georgian exporters were making substantial market gains. Also, looking ahead, even if domestic credit constraints played a transitory role, the rebound in domestic credit (including its foreign exchange component that may particularly relevant for exporters) since mid-2010, would minimize such concerns. Similar considerations would apply to other, non-credit-related, supply-side constraints that may have impeded faster export volume growth during the last quarter of 2009 and the first half of 2010.

21. A more promising hypothesis relates to the changing composition of capital inflows, and in particular the sharply declining share of FDI. While net external borrowing by the banking and corporate sectors recovered quickly from its crisis trough, and was supplemented by increased official lending flows, FDI has continued to stagnate—indeed, it is estimated to have declined by an additional 1 percentage point of GDP in 2010 compared to 2009. FDI can affect export performance through a variety of channels:

- Directly, as foreign investors benefit from conditions in the host country to generate exports;

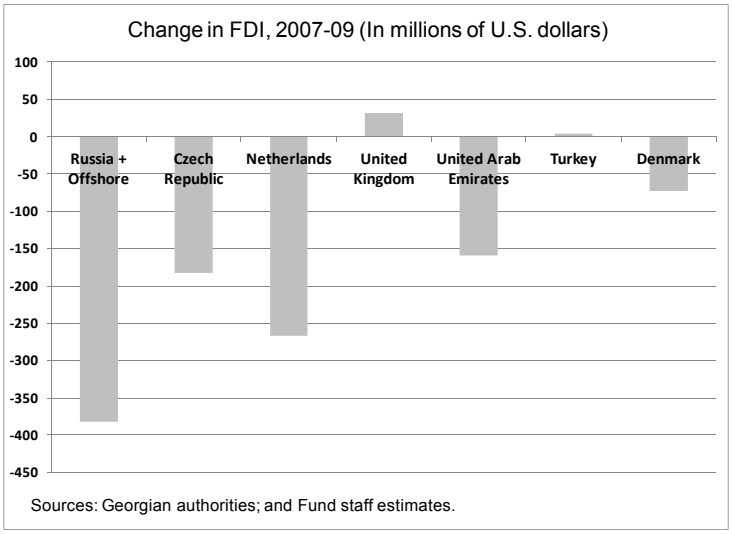
- Indirectly, via raising the productivity of the export sector through improved technology, know-how, or managerial techniques.

The remaining section explores the potential role of FDI and its prospects in greater detail.

E. Role and Prospects of FDI

- It is widely recognized that FDI played an important role in supporting Georgia's export performance during the pre-crisis period. From a narrow perspective, a substantial share of FDI flowed directly into Georgia's main export industries—over 20 percent into mining and metal industries alone, and over 30 percent if tourism is added. More broadly, FDI tended to flow predominantly to sectors that tend to facilitate technology diffusion—more than 85 percent of the total was accounted for by the tradable sector, including energy and transport. Given its pre-crisis export-promoting role, it is quite likely that its sharp decline has had an important impact on post-crisis export performance.

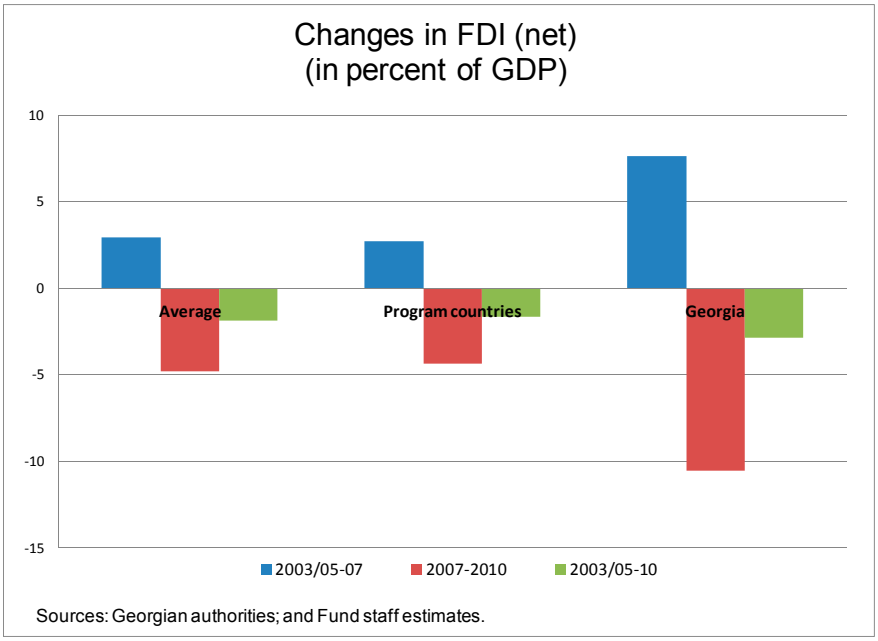
- Beyond the decline in the overall volume of FDI, major changes in its composition since the crisis have hampered its potential to support export growth. It is striking that the only sector that has managed to attract (substantially) higher inflows since the 2007 peak has been real estate, whose share in total FDI has risen from an insignificant 1.5 percent pre-crisis to some 25 percent currently. If one adds construction (which suffered minimal losses) and other services, the share of FDI flowing to sector with minimal export-promoting or technology-diffusing potential is currently as high as 60 percent.



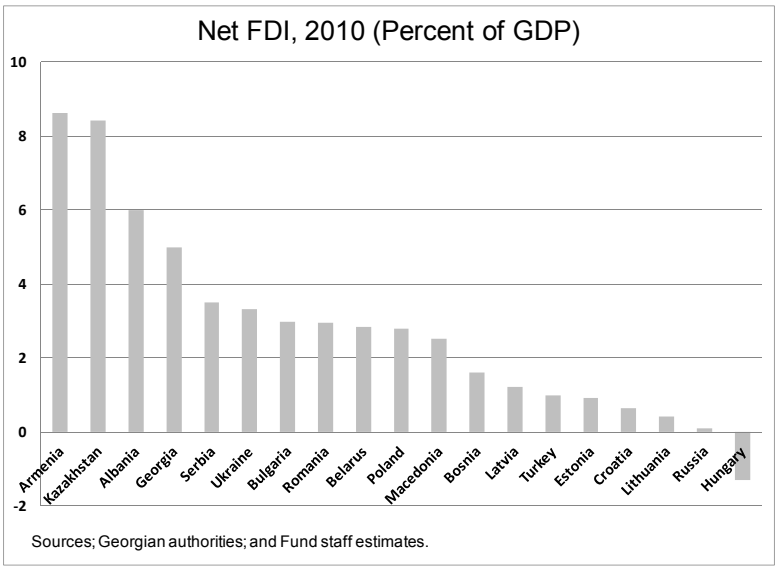
22. Given the important links between FDI and export performance in Georgia's case, the prospects for a recovery of FDI (and an improvement in its composition) for Georgia's export competitiveness are of considerable importance. While such a recovery of FDI has been central to the authorities' strategy, there are good reasons for concern. As the sectoral discussion above

suggests, the fact that FDI has declined the most, and has yet to recover, in precisely those sectors that have traditionally been the most dynamic, makes the prospect of a strong FDI rebound in the near term highly dubious.

23. Looking at Georgia's FDI performance in a broader emerging market context adds to the concerns about near-term prospects. The fact that Georgia's FDI inflows keep declining well after most other crisis-affected economies have turned the corner and are experiencing rising FDI flows, and more broadly when capital flows from advanced to emerging markets have been rising for more than a year, raises issues about the pace of FDI recovery over the medium term.



24. At the same time, it should be noted that, while the decline in Georgia's net FDI inflows from their pre-crisis peak has been one of the sharpest among the group of crisis-affected countries, its *level* as a share of economic activity remains above average relative to comparator countries. Viewed in this way, it was Georgia's *pre-crisis* FDI level that constituted an outlier, and recent trends have brought it closer to the norm among Georgia's peer group. This perspective adds caution against expecting an exceptionally fast rebound in Georgia's FDI inflows in the near term.

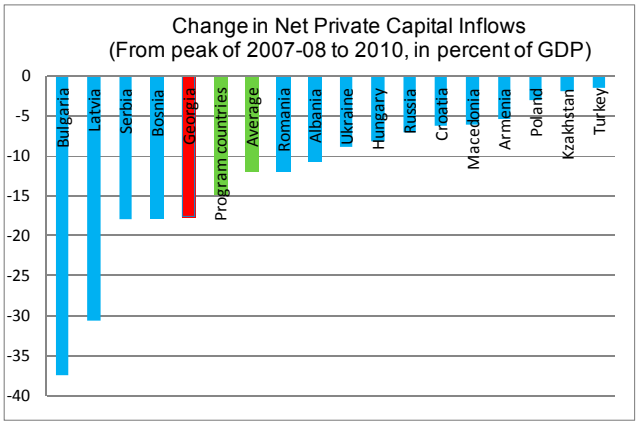


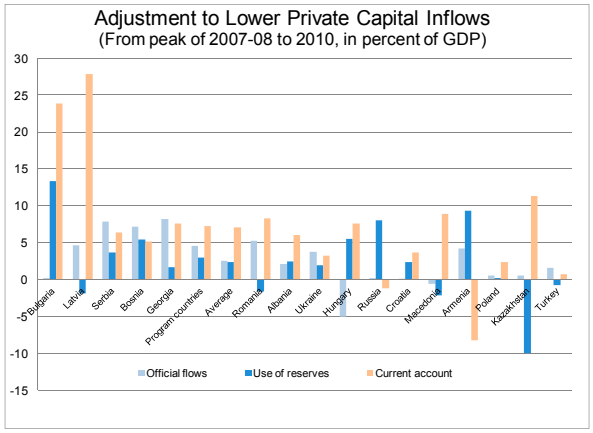
25. In the absence of a substantial recovery of FDI, fostering alternative mechanisms to support export competitiveness becomes an important policy priority. This would involve diverting domestic resources, including through greater exchange rate flexibility, via higher domestic investment toward the tradable sector, and more broadly toward sectors with substantial technology-diffusing potential.

II. International Reserve Adequacy [1]

The twin crises of 2008–09 brought out Georgia's exposures to a number of external and internal drains. In view of these vulnerabilities, this chapter assesses whether the current level of reserves is adequate, based on a number of metrics and approaches. It concludes that Georgia's current level of reserves appears indeed adequate. Looking ahead, the challenge for the authorities will be to preserve reserve adequacy while meeting their external repayment obligations.

1. **During the twin crises of 2008–09 Georgia's foreign exchange reserves were exposed to a number of external and internal drains**. Its exports declined by 21 percent from peak to trough. Bank deposits declined by more than 20 percent in late 2008-early 2009, while deposit dollarization increased sharply. FDI declined from 16.4 percent of GDP in 2007 to an estimated 5 percent of GDP in 2010. At the same time, Georgia did not experience significant outflows from the liquidation of debt and equity holdings by nonresidents, since the size of these holdings was quite limited.

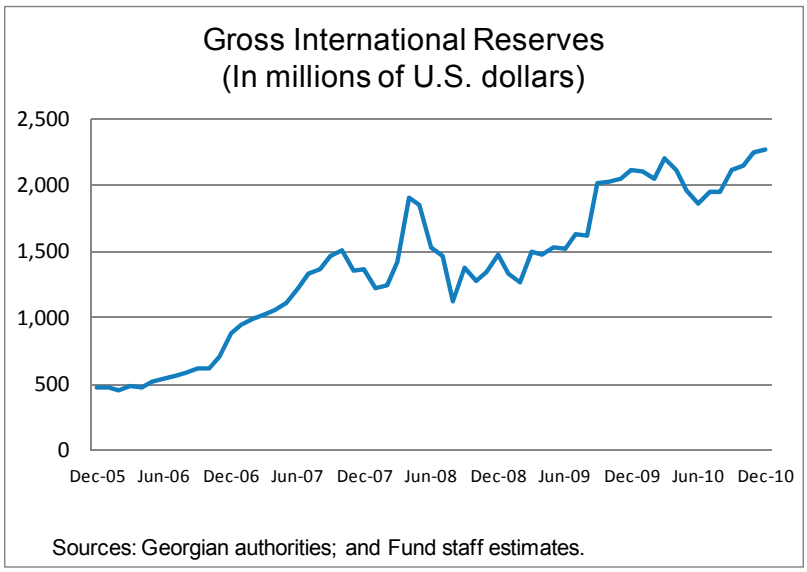




Sources: October 2010 WEO; and Fund staff estimates.

2. **Through a combination of current account adjustment and official financing mobilization, Georgia was able to limit the impact of these drains on its international reserves.** Compared to its peer countries, the adjustment of Georgia's balance of payments to lower net private capital flows relied more heavily on the mobilization of official financing. This mobilization, along with a significant adjustment of the current account (which contracted from 25.5 percent of GDP, excluding official transfers, in 2008 to 12.5 percent of GDP in 2010), allowed Georgia to start rebuilding international reserves (albeit slowly) in the immediate aftermath of the conflict with Russia.

[1] Prepared by Edouard Martin (MCD).



3. In view of Georgia's vulnerabilities, this note assesses whether the current level of reserves is adequate, based on a number of metrics and approaches.

A. Traditional Reserve Adequacy Indicators

4. **Based on traditional reserve adequacy indicators, the current level of international reserves appears adequate.** But for the aforementioned dip in mid-2008, international reserves have increased steadily over the last few years, from USD 474 million at end-2005 to USD 2,257 million at end-2010. As a result, traditional reserve adequacy indicators have improved markedly. They are now in line with those of peer countries and comfortably meet widely used rules of thumb:

- The ratio of gross international reserves (GIR) to (prospective) months of imports was 3.8 at end-2010, above the recommended level of 3 months;
- The ratio of GIR to broad money was 68 percent, well above the 20 percent considered the upper value of a conventional range for this ratio;
- The ratio of reserves to short-term external debt at remaining maturity was 160 percent, well above the 100-percent Greenspan-Guidotti threshold.[2]
- Reserves represented 126 percent of foreign exchange deposits.

[2] This ratio would drop to 121 percent if one assumes that 20 percent of liabilities to direct investor are short-term liabilities. Owing in part to the fall of FDI, the growth of these liabilities came to a halt during the crisis, as they increased by USD 36 million in 2009, compared with close to a USD 1 billion increase in 2007.

Table II.1. Georgia: International Reserves Coverage

	2005	2006	2007	2008	2009	2010
GIR in percent of						
Prospective months of imports	1.3	1.8	2.2	3.4	4.2	3.8
Broad money	44	57	54	58	77	68
Total foreign currency deposits	101	120	117	103	144	126
Short-term external debt by remaining maturity (excl. intercompany loans)	128	124	138	101	169	160
Short-term external debt by remaining maturity (incl. intercompany loans)	98	101	101	78	126	121
GIR and banks' liquid foreign assets in percent of						
Broad money	56	66	61	69	89	80
Total foreign currency deposits	126	139	132	123	165	148
Short-term external debt by remaining maturity	160	144	155	121	193	188
Memorandum items (in USD million):						
Gross international reserves	474	881	1,361	1,480	2,111	2,263
Commercial banks' liquid foreign assets	118	138	173	288	310	404

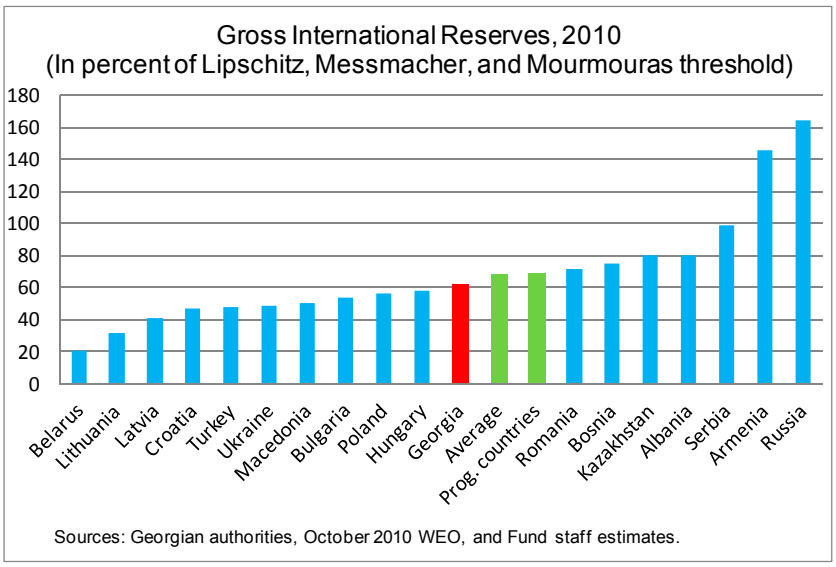
Sources: Georgian authorities; and Fund staff estimates.

B. Composite Reserve Adequacy Indicators

5. **The current level of reserves appears also adequate based on composite indicators.** While traditional indicators essentially focus on one of the potential drains on reserves (e.g. capital flight for broad money, or sudden stop for short-term debt), composite indicators capture the simultaneous impact of several of these drains, as often occurs during a crisis:

- The composite indicator proposed by Wijnholds and Kapteyn (2001) takes into account both external (sudden-stop) and internal (capital flight) potential drains. For countries with flexible exchange rates, this indicator looks at the reserve coverage relative to the sum of 100 percent of short-term debt at remaining maturity and up to 10 percent of broad money. Based on a recommended threshold of 100 percent, at end-2010, NBG's gross reserves were 29 percent higher than this indicator (2 percent higher if one takes into account short-term intercompany loans).

- The composite indicator proposed by Lipschitz, Messmacher, and Mourmouras (2006) builds on that of Wijnholds and Kapteyn by taking into consideration the need to finance import consumption in the event of a drop in revenues. It looks at reserve coverage relative to the sum of 100 percent of the prospective external debt service, 10 percent of broad money, and 20 percent of imports of goods and services. Although, at end-2010, reserve coverage based on this indicator was 63 percent (compared a suggested threshold of 100 percent), this ratio had increased significantly over the last 5 years and was in line with those of peer countries.



- IMF staff (see IMF, 2011) recently developed a new composite indicator, complementing the previous ones by also taking into account the potential drain on reserves stemming from the sale by nonresidents of their long-term debt and equity portfolio holdings. For a country with a floating exchange rate, the reserve coverage is measured relative to an indicator based on the sum of 30 percent of short-term debt at remaining maturity, 10 percent of other medium- and long-term debt and equity liabilities, 5 percent of broad money, and 5 percent of exports of goods and services. At end- 2010, Georgia's reserve coverage based on this indicator was 157 percent, slightly above the 100–150 percent range generally considered adequate. Georgia's high ratio is explained by its limited exposure to portfolio outflows and the fact that this indicator does not take into account the potential drains that could stem from a decline in FDI. While the potential for such a decline is less important than during the run-up to the crisis, it remains significant.

Table II.2. Georgia: Composite Indicators

	2005	2006	2007	2008	2009	2010
GIR in percent of						
Wijnholds and Kapteyn threshold	99	102	110	86	138	129
Lipschitz, Messmacher, and Mourmouras threshold	33	40	45	48	69	63
IMF composite indicator	58	84	97	87	111	157
Memorandum items (in USD million):						
Gross international reserves	474	881	1,361	1,480	2,111	2,263
Wijnholds and Kapteyn threshold	477	863	1,237	1,722	1,524	1,749
Lipschitz, Messmacher, and Mourmouras threshold	1,424	2,200	3,029	3,095	3,079	3,610
IMF composite indicator	817	1,052	1,406	1,708	1,904	1,442

Sources: Georgian authorities; and Fund staff estimates.

C. Propensity to Withstand Country-Specific Shocks

6. **To complement the information provided by the traditional and composite reserve adequacy indicators, we assess the resilience of international reserve to country-specific stress scenarios**. These scenarios assume a deposit flight and/or a sharp rise in deposit dollarization, two important pressure points during the 2008–09 twin crises. Deposits are assumed to decline by 30 percent, similar to what was observed in the aftermath of the August 2008 conflict (when deposits declined by 29 percent in exchange rate-adjusted terms from end-July 2008 to mid-May 2009). Deposit dollarization is assumed to increase by 15 percent, similar to what happened during the second half of 2008 and early 2009 (when deposit dollarization increased from 60 percent at end-June 2008 to 77 percent at end-February 2009). This would bring dollarization from its current level of 71 percent to about 86 percent, a level last seen in early 2004, prior to the pick-up in structural reforms.

7. **The current level of reserves would allow the NBG to withstand such shocks.** Faced with increased dollarization, banks would reduce their liquidity in lari (including their holdings of NBG certificate of deposits) to increase their foreign asset holdings. The resulting impact on NBG's international reserves would be partly offset by the fact that, for an unchanged overall level of deposits, banks would need to increase their overall required reserves (as reserve requirements are higher for fx deposits than for lari deposits). In the case of a decline in deposits, we make the extreme assumption that the central bank would eliminate the reserve requirement on fx liabilities to provide liquidity in dollars. Alternatively, the NBG could provide banks with additional liquidity in lari and convert it in dollars through fx intervention. Under all of these cases, the loss of reserves could be met comfortably with the present level of reserves. In the

most extreme case, GIR would decline by about USD 800 million, and NFA by about USD 400 million.[3]

Table II. 3. Georgia: Impact on Reserves of Country-Specific Shocks

		Deposit loss			
		0		30%	
Dollarization	71%	GIR	2,556	GIR	1,800
		NFA	1,128	NFA	775
	86%	GIR	2,470	GIR	1,773
		NFA	985	NFA	748

Sources: Georgian authorities; and Fund staff estimates.

D. Model-based Approach to Reserve Adequacy

8. **Recent models assume that policymakers determine the level of reserves by weighing the costs and benefits of holding reserves:**

- Jeanne and Rancierre (2006) apply this approach to the case where the main benefit of holding reserves is to allow policymakers to smooth domestic absorption in the event of a sudden stop, while its main (opportunity) cost corresponds to the reserves' lower yield compared with longer-term investments. They derive an optimal level of reserves, which is a function of: the short-term external debt-to-GDP ratio; the probability of a sudden stop; the size of the drop in output that might result from a sudden stop; and the interest rate term premium. The model is calibrated by using past experiences of sudden stops in emerging economies.

- Obstfeld, Shambaugh, and Taylor (2007) use a similar approach but put more emphasis on the importance of financial stability and financial openness in explaining reserves holdings in a context of globalized capital markets. They link the observed reserve stocks to: broad money; financial openness; the ability to access foreign currency markets though debt markets; and exchange rate regime.

9. **Georgia's international reserves are currently broadly in line with the optimal levels suggested by these models.** Reserves at end-2010 were about 20 percent higher than the level

[3] The central bank's NFA decline is less than the decline in its GIR owing to the decline in the commercial banks' foreign exchange required reserves with the central bank.

suggested by the Jeanne-Rancierre.[4] They were also about 2 percent lower than suggested by Obstfeld, Shambaugh, and Taylor. These results are highly sensitive to the value of some variables, such as the opportunity costs of holding reserves and the probability of sudden stops in the Jeanne-Ranciere model, and the exchange regime in the Obstfeld, Shambaugh, and Taylor model.

E. Conclusions

10. **In summary, Georgia's current level of reserves appears adequate.** This level is broadly in line with those of peer countries and well above most traditional and composite indicators. The current level of reserves would also allow Georgia to withstand serious country-specific shocks. Lastly, it is slightly higher than the optimal level of reserves suggested by a model-based approach.

11. **In the medium term, the challenge for the authorities will be to preserve reserve adequacy as the central bank meets its repayment obligations to the Fund**. The medium-term framework presented in the staff report, which notably envisages a significant reduction of the current account and the external refinancing of the government's external debt obligations, is consistent with this objective.

Table II.4. Georgia: Medium-Term Reserve Adequacy

	2010	2011	2012	2013	2014	2015	2016
GIR in percent of							
Wijnholds and Kapteyn threshold	129	126	94	120	122	140	127
Lipschitz, Messmacher, and Mourmouras threshold	63	67	54	61	60	67	63
Jeanne and Rancierre model	119	117	89	112	116	135	126
Obstfeld, Shambaugh, and Taylor model	98	105	92	85	81	85	85
Memorandum items (in USD million):							
Gross international reserves	2,263	2,780	2,590	2,488	2,462	2,730	2,902

Sources: Georgian authorities; and Fund staff estimates.

[4] We assume an opportunity cost of holding reserves of 2 percent and a probability of sudden stops of 10 percent per year.

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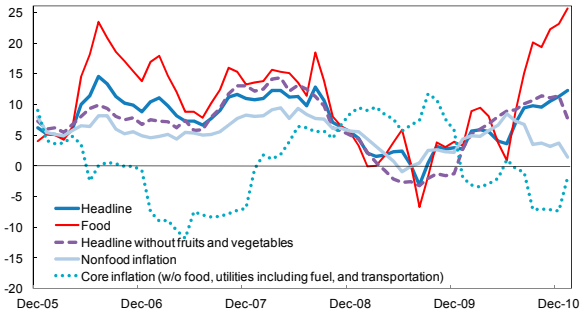
III. Inflation Trends and Monetary Policy Options[1]

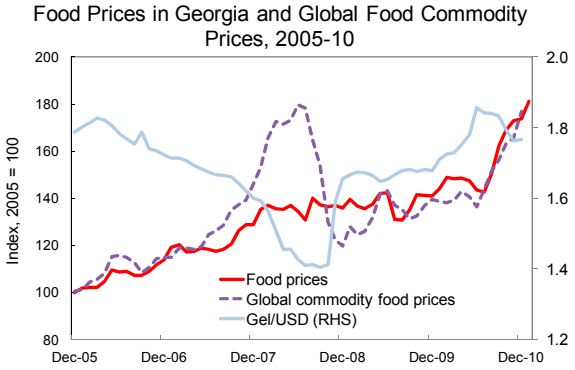
This chapter compares the trends and volatility of inflation in Georgia with those in peer countries, and examines the response of Georgian inflation to demand and supply (including commodity price) shocks. The relatively high volatility of headline inflation in Georgia is mainly due to food inflation, and the large responsiveness to both supply and demand shocks appears short-lived. The chapter then shows that the interest rate transmission mechanism—although improving recently—remains limited, and suggests using a mix of policy rate and reserve requirement changes as a more effective monetary policy instrument.

A. Inflation Trends in Georgia and Comparison with Peers

1. **The recent increase in inflation in Georgia is due to a sharp rise in food prices, mostly in response to the rise in global commodity prices.** The commodity price rise has been strong, sustained, and broad-based, owing to emerging markets' stronger-than-anticipated economic growth, sluggish supply response (in part because of bad harvests, e.g., wheat harvests in the CIS countries), and low levels of inventories. Unlike the previous large spike in global food prices that occurred at a time of strong lari appreciation, which buffered the external prices' impact on domestic food prices, the current episode is associated with only a modest appreciation of the lari vis-à-vis the dollar, leading to a very large increase in domestic food prices. At the same time, nonfood and core inflation remain subdued.



Source: Georgian authorities.



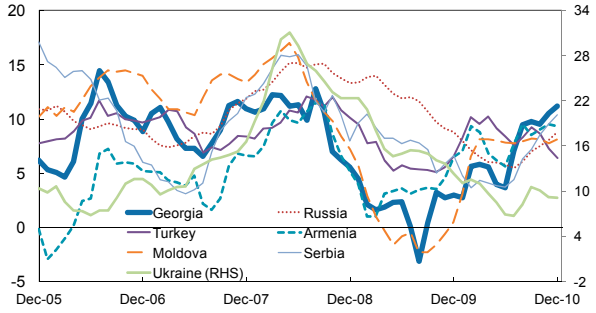
Sources: Georgian authorities, IMF's INS, and IMF's Commodity Price System.

2. **The surge in headline and food inflation in 2010 was large compared to peers.** Headline and food inflation reached the highest level amongst regional peers by end-2010, in

[1] Prepared by Alina Luca (MCD).

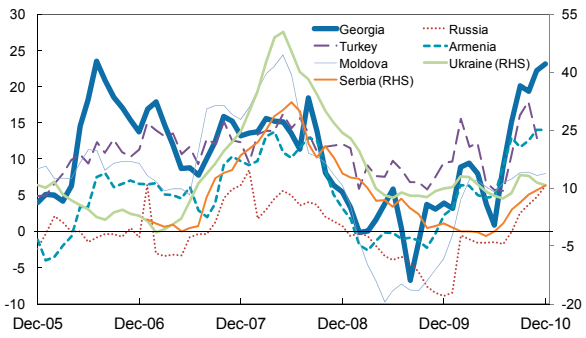
part due to the steep decline experienced during the crisis (base effect). Headline inflation averaged 4.3 percent in Georgia over 2008–09, about half of the peers' inflation level.

Headline CPI Inflation in Georgia and Peers, 2005-10
(Year-on-year, in percent)



Source: IMF International Financial Statistics.

Food Inflation in Georgia and Peers, 2005-10
(Year-on-year, in percent)



Sources: Central banks' websites; and Fund staff estimates.

3. **The immediate effect of changes in commodity prices on Georgia's headline inflation is sizable.** The large short-term pass-through from changes to commodity prices onto headline inflation, the highest among the peers considered, combined with a large exchange rate pass-through, suggests that commodity price hikes are expected to contribute more to inflation in Georgia than in peer countries. Inflation persistence, however, appears limited, while seasonality is very pronounced, as in the CIS countries.

Table III.1. Pass-Through from Changes in the World Commodity Prices (in USD terms) and the Exchange Rate (domestic currency per USD) on Headline Inflation 1/

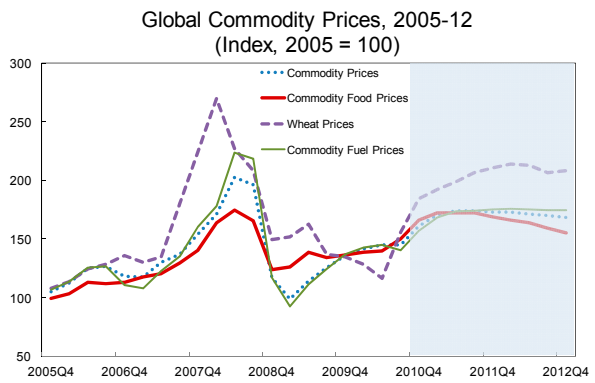
	Global commodity prices pass-through			Exchange rate pass-through		
	Correlation	Short-term effect	Long-term effect	Correlation	Short-term effect	Long-term effect
Georgia	0.07	0.04	0.07	0.26	0.07	0.13
Armenia	0.06	0.02	0.05	0.13	0.08	0.14
Moldova	0.06	0.02	0.11	0.31	0.11	0.43
Russia	0.10	0.01	0.04	0.19	0.03	0.11
Serbia	0.09	0.02	0.01	0.14	0.06	0.01
Turkey	0.00	0.02	0.05	0.20	0.03	0.07
Ukraine	0.05	0.03	0.06	0.22	0.06	0.16

Sources: International Financial Statistics, and Fund staff estimates.

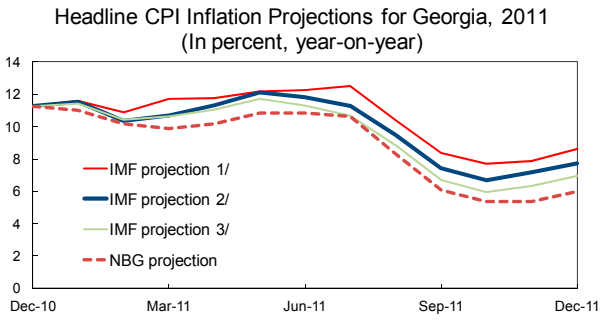
1/ The contemporaneous correlation and the short-term (ST) and long-term (LT) effects are calculated using monthly data for the period 1999-2010. Reported correlations are contemporaneus correlations over the entire period considered, while ST and LT effects are the average estimated ST and LT pass-through from commodity price and exchange rate changes onto headline inflation, based on the regression of changes in the monthly headline inflation on its two lags, the contemporaneous monthly change in the global commodity prices and its two lags, the contemporaneous monthly depreciation vis-à-vis the USD and its two lags, monthly dummies, and a constant.

4. **Staff projects inflation to remain high in the first quarter of 2011, but stabilize and then decline substantially by end-year.** World food and fuel commodity prices are expected to stabilize in mid-2011, but uncertainty around this projection and the exposure to new supply shocks remains high, in part due to low global levels of inventories and the ongoing turmoil in the Middle East. While food prices are expected to decline modestly since mid-2011, wheat prices, however, are projected to increase by 14 percent in 2011 and remain elevated through 2012. Assuming no further shocks to commodity prices and moderate depreciation of the lari vis-à-vis the dollar, staff projects year-on-year inflation to remain high in Q1 2011, but decline slightly in Q2 2011 and significantly afterwards on the back of base effects and stabilization in global commodity prices.[2]

[2] A first projection was based on forecasted changes in selected global commodity prices (cereals, meat, sugar, vegetable oil, and fuel) and changes in the lari to USD exchange rate, and by assuming complete and immediate (within the month) pass-through to the respective domestic commodity prices and on two additional components (bread and transportation), which have a large pass-through from wheat and fuel prices. It also assumed limited core and fruits and vegetable inflation, contributing about 1 and 2.5 percentage points, respectively, to the 2011 inflation. A second set of projections was derived based on forecasted global commodity prices, the NEER/bilateral USD exchange rate, and their estimated pass-through to headline inflation within a period of one quarter, while also controlling for seasonal effects. The specification that takes into account seasonality and includes the NEER, which captures more broadly changes in external prices, is staff's central projection (IMF projection 2 in the chart below).



Source: IMF's Commodity Price System.



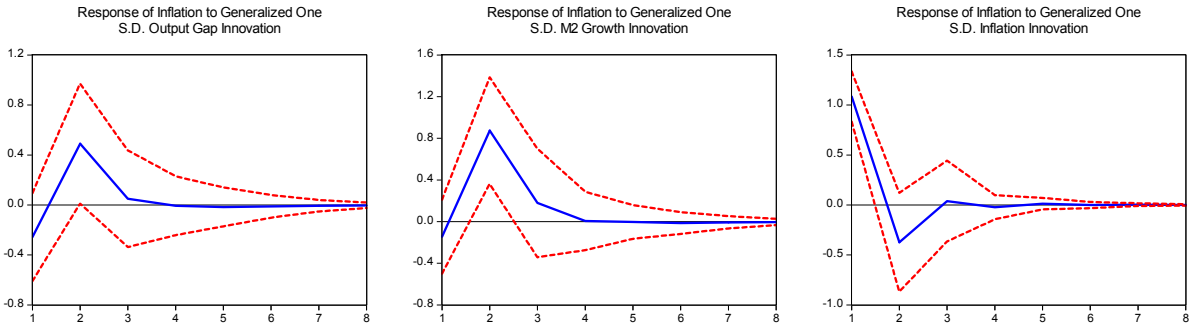
Sources: Georgian authorities, and Fund staff estimates.

1/ Projections based on NBG's component-by-component model applying the IMF 's projected selected commodity prices and lari-to-USD exchange rate.
2/ Projections based on a model with global commodity prices, the NEER, and seasonal effects.
3/ Projections based on a model with global commodity prices, the lari-to-USD exchange rate, and seasonal effects.

5. **In addition to responsiveness to supply shocks (external and domestic costs of production), inflation appears to react significantly to demand shocks, but all effects are relatively short-lived.** We estimate a vector autoregressive (VAR) model that captures the response of annual inflation to domestic demand conditions (output gap and M2 growth) and domestic and external supply conditions (the industrial producer price index, world commodity prices, and the nominal effective exchange rate).[3] Granger causality tests and impulse response simulations indicate responsiveness to both supply and demand shocks. In particular, inflation appears to react strongly on the back of demand shocks, as captured by changes in the output gap and the growth rate of M2. While supply shocks invariably have a very quick impact on prices, the effect of demand shocks unfolds with a delay of about half a year. There appears to be limited persistence in the response to both demand and supply shocks, and limited intrinsic inertia after stripping away the various extrinsic determinants.

[3] We use a 1-lag model with quarterly data for the period 2005–10. All variables except the output gap are measured as quarterly percentage changes. The model's responses to shocks are generalized impulses estimated based on Pesaran and Shin (1998). Similar results are obtained with the Cholesky decomposition following the ordering commonly assumed in the literature, which implies that monetary policy shocks have no contemporaneous effects on any other variable.

Impulse Reponses of Inflation to Output Gap, M2 Growth and Own Shocks



Sources: Fund staff estimates.

6. **Inflation volatility appears indeed higher in Georgia compared to peers, mostly on the back of food inflation.** Past measurement issues related to prices of seasonal product do not seem to have contributed significantly to enhanced volatility, as most food volatility is due to the non-seasonal products (food excluding fruits and vegetables). Nonfood inflation is generally less volatile than that of peers.

Table III.2. Georgia and Peer Countries: Inflation Volatility, 2005-10

	Georgia	Armenia	Moldova	Russia	Serbia	Turkey	Ukraine
Headline inflation volatility (standard deviation over a 12-month rolling interval)	2.38	2.28	2.51	1.33	2.30	1.36	3.01
Food inflation volatility (standard deviation over a 12-month rolling interval)	4.36	3.24	4.57	2.61	5.87	2.26	6.39
Non-food inflation volatility (standard deviation over a 12-month rolling interval) 1/	1.57	1.90	1.82	1.78	1.17	1.49	3.30
Food share in the CPI basket (current weight)	0.39	0.48	0.35	0.32	0.34	0.26	0.50

1/ Historical non-food inflation is calculated using current weights for all countries except Georgia.

Sources: Central banks' websites, and Fund staff estimates.

7. **The high volatility/low persistence of inflation in Georgia should facilitate the disinflation effort in 2011.** Barring further increases in commodity food and fuel prices, staff forecast suggests that headline inflation is likely to decline to about 8 percent by end-2011. Risks consist mostly of cyclical factors: the closing of the output gap and a strong money supply growth in early 2011 could put upward pressures on inflation with a lagged effect by end-2011, at a time when pressures from commodity prices are expected to dissipate. A faster-than-

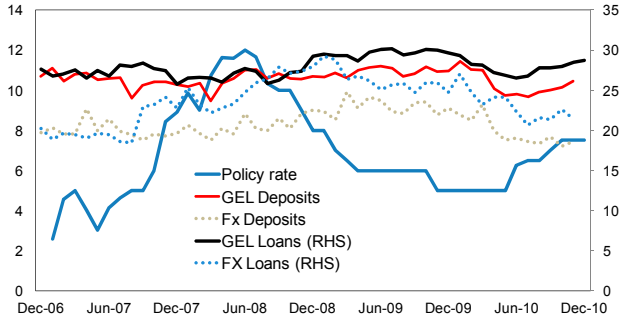
projected depreciation of the lari would also add to these pressures, given the large exchange rate pass-through.

8. **Should there be a need for further tightening—in the case when, absent new shocks, inflation deviates from the projected path—the authorities could use a mix of interest rate and reserve requirement hikes.** The more advanced emerging markets (e.g., Brazil, Peru, Turkey), facing currently a resurgence of large capital inflows, have employed reserve requirements to fight inflation without attracting further inflows. Countries with lower traction of the interest rate channel (e.g., Moldova and Serbia) have also used reserve requirements as a more blunt measure to contain inflation.

B. The Interest Rate Pass-through in Georgia

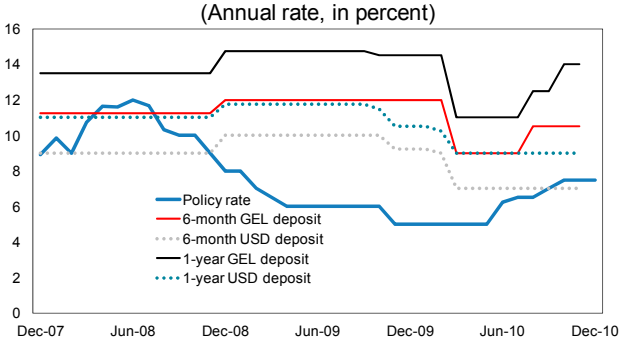
9. **Recent monetary developments in Georgia point to an incipient pass-through from policy rate changes to lari deposit and credit rates.** Large policy rate cuts from mid-2008 to late-2009 appear to have had very limited impact on the deposit and credit rates. Following the April 2010 reform of the central bank refinancing window and standing facilities, and the normalization of the liquidity and credit conditions, the policy rate appears to have gained some traction on lari deposit and credit rates. The foreign exchange/USD rates remain unaffected, as one might expect.

Policy Rate and Deposit and Lending Rate on New Household Deposits and Loans, 2006-10
(Annual rate, in percent)



Sources: National Bank of Georgia, and Fund staff estimates.

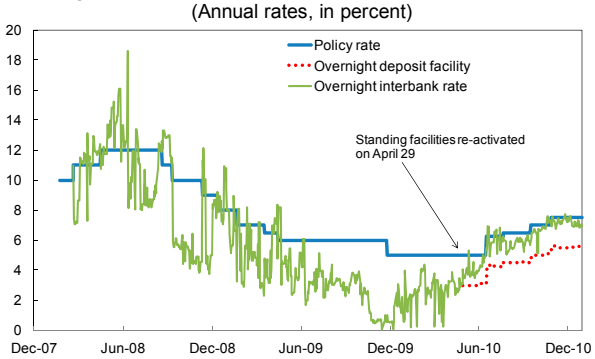
Policy Rate and Bank of Georgia's Offer Rates on New 6-month and 1-year Household Deposits, 2007-10
(Annual rate, in percent)



Sources: Bank of Georgia, National Bank of Georgia, and Fund staff estimates.

10. **While the pass-through on the deposit and lending rates remains limited, the traction on the interbank rate has improved significantly since April 2010.** The short- and long-term effects of changes in the policy rate on the overnight interbank rate become positive and relatively large when including data since April 2010 (see table below). Since then, the interbank rate has been mostly below the policy rate (7-day refinancing loan rate) and within the interest rate corridor. Its volatility has declined substantially, owing also to increased liquidity of the interbank market, which remains nevertheless limited and below the pre-crisis level.

Overnight Interbank Rate and the Interest Rate Corridor, 2007-10
(Annual rates, in percent)



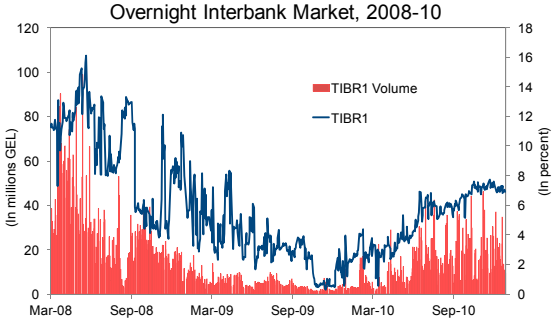
Sources: National Bank of Georgia; and Fund staff estimates.

Table III.3. Correlation between Changes in the Policy Rate and Changes in Money Market Rate 1/

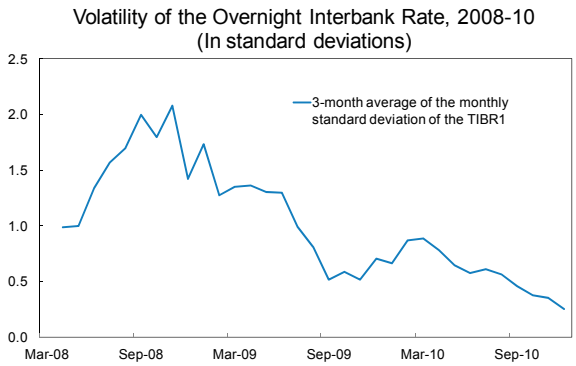
	Contemporaneous correlation	Short-term effect	Long-term effect
Advanced	0.29	0.81	0.96
Emerging	0.30	0.74	0.59
LICs	0.23	0.29	0.40
Georgia 2008-March 2010	-0.02	-1.04	-0.34
Georgia 2008-2010	0.06	0.32	0.81

Sources: Mishra, Montiel, and Spilimbergo (2010); Georgian authorities; and Fund staff estimates.

1/ The contemporaneous correlation and the short-term and long-term effects are calculated using monthly data, following Mishra, Montiel, and Spilimbergo (2010). The second column reports the contemporaneous correlations over the period considered, while the third and fourth columns report the average estimated short-term and long-term effects of policy rate changes on the interbank rate, based on the regression of changes in the interbank rate on its two lags, the contemporaneous change in the policy rate and its two lags, and a constant.

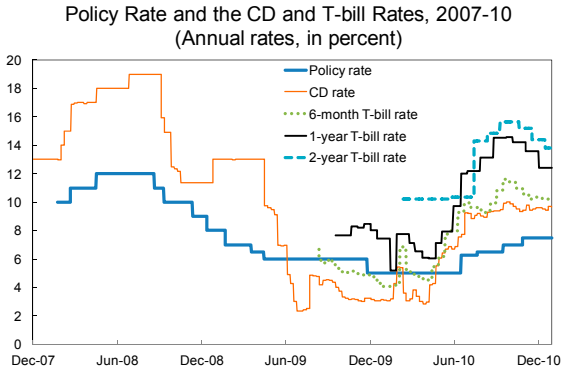


Sources: National Bank of Georgia; and Fund staff estimates.



Sources: National Bank of Georgia, and Fund staff estimates.

11. **The policy rate has been catching up with market rates, but is now more synchronized.** The initial decline in the policy rate in early 2010 and the subsequent monetary tightening appear to have been anticipated by the CD and T-bill rates (see chart). Granger causality tests conducted on monthly data from mid-2009 to end-2010 confirm that the policy rate responds to changes in the 6-month and 1-year T-bill rates, and not the other way around, but the causal relationship is less evident since April 2010.



Sources: National Bank of Georgia; and Fund staff estimates.

12. **The response of lari deposit and lending rates to policy rate changes has strengthened under the impulse of recent improvements in the monetary policy framework, but it remains weak, calling for continued efforts to deepen financial markets.** The lack of leverage of the authorities over the on-shore foreign exchange rates in the context of a highly dollarized economy represents a key impediment to the conduct of monetary policy. This, combined with the current weak pass-through on lari rates, make the case for complementing policy rate changes with other instruments—in particular, reserve requirements on foreign exchange liabilities, which also have the merit of fostering de-dollarization—for enhanced monetary policy effectiveness. Further deepening of the financial markets is required to facilitate the transition to an inflation targeting regime in the medium term.

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IV. THE CHALLENGE OF ENHANCING TAX PRODUCTIVITY IN GEORGIA[1]

The purpose of this chapter is to assess the scope to increase tax productivity in Georgia by eliminating tax breaks and improving revenue administrative. Our analysis relies on a Georgia-specific decomposition of efficiency gains and on an international comparison. It shows that, at unchanged tax rates, raising the tax-to-GDP ratio and reversing the flattening observed since 2008 presents a challenge. There are few tax breaks in the Georgian tax system and the room to raise CIT and VAT compliances seems limited. Administrative reforms should continue to support PIT.

A. Introduction

1. **Between 2003 and 2007, tax collection increased dramatically in Georgia**, with the tax-to-GDP ratio (including social security contributions) rising by 11 percentage points in only four years. This remarkable performance is attributable to a series of macroeconomic and structural factors, including major revenue administration reforms to curb tax fraud and evasion, a clampdown on smuggling, and a drastic overhaul of the tax and customs legislations.

2. **This rising trend was interrupted by the 2008 conflict and the financial crisis**. The tax-to-GDP ratio fell by 2 percentage points of GDP between 2007 and 2010. Supply effects expected from the 2008–10 tax cuts[2] failed to materialize in a context of lower compliance and weaker import growth. In addition, tax revenue gains from administrative measures were concentrated in the period prior to the crisis, when most high-yielding measures were implemented (fight against corruption, creation of a financial police, amnesty on undeclared tax arrears, and establishment of a revenue service). Since then, administrative improvements have focused on more complex reforms, like risk-based audits, whose yields will be realized over a longer horizon.

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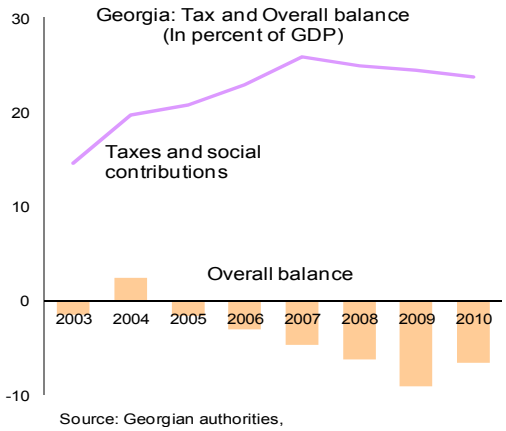
[1] Prepared by Luc Eyraud (FAD) and Nia Sharashidze (Resident Representative Office). This chapter benefited from the comments of Pridon Aslanikashvili, Edward Gardner, Jack Grigg, Giorgi Kavlashvili, Tsotne Kavlashvili, Rusudan Kemularia, Oana Luca, Edouard Martin, John Norregaard, David Owen, and Victoria Perry.

[2] Corporate income tax in 2008, personal income tax in 2009, interest and dividends in 2009 and 2010.



Source: Georgian authorities,

3. **As part of fiscal consolidation efforts, the Georgian authorities perceive the need to raise tax efficiency.** In 2010, the authorities embarked on an ambitious fiscal adjustment program to bring the fiscal deficit below 3 percent of GDP by 2013, from 9.2 percent in 2009. Concerned that tax increases would undermine the economic recovery and deter private investment, the authorities chose to base the consolidation on expenditure compression and adopted a constitutional amendment in December 2010 subjecting tax rate hikes to referendum. Consequently, economic policy increasingly focuses on raising the yield of existing taxes rather than modifying their rate or introducing new taxes.

B. Is there Room to Raise Tax Productivity in Georgia?

4. **Tax productivity, measured by the ratio of actual to potential tax receipts, can be enhanced by eliminating tax breaks[3] or improving tax compliance[4]**. In order to disentangle these two factors, we apply the simple decomposition described in Box 1.

5. **There is limited room to increase productivity by removing tax breaks from the Georgian tax code.** Since the major reform of 2005, the authorities have adopted a broad base-low rate approach to taxation. Table IV.1 shows that the scope to raise efficiency through tax policy is marginal for PIT and CIT. Some exemptions exist for VAT (education, health, private investment), which however are justified by economic and social considerations. In early 2011, the authorities continued to broaden tax bases, by harmonizing personal income tax rates.

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[3] In this chapter, "tax break" refers to all forms of tax saving, including tax exemptions, tax credits, tax deductions, and reduced rates.

[4] Compliance is defined as the degree to which taxpayers comply with tax laws. Full compliance means that individual citizens report their income voluntarily, calculate their tax liability correctly, and file a tax return on time, so that actual receipts are equal to tax obligations derived from the law.

Box IV.1. Tax Productivity Measurement and Components

- The productivity of a given tax is defined as the ratio of actual receipts to the theoretical liability, which is the revenue collected under full compliance, a single rate, and no tax break.[1]
- We compute productivity rates for the three major taxes—personal (PIT) and corporate (CIT) income tax and VAT—which account for more than 80 percent of total tax collection in Georgia. The tax liability is measured as the product of the standard rate —defined as the rate paid by a majority of taxpayers— and the tax base measured from national and budget accounts. Actual receipts are corrected for one-off payments.
- Tax productivity indicators suffer from several limitations: (i) Consumption, as measured by the National Accounts (NA), can deviate substantially from the VAT base. To overcome this issue, we measure public consumption from budget data and exclude untaxed items—in particular public wages. (ii) The CIT base is given by the net operating surplus from NA. The treatment of depreciation in NA differs from that of the tax law, which incorporates the possibility of accelerated depreciation. This shortcoming is not addressed by our study. (iii) Usually, economists abstain from computing PIT productivity rates, in view of the difficulty to define a meaningful "standard" rate in a progressive framework. This issue is less relevant for Georgia, where the PIT is a proportional tax with only two rates (until 2010). (iv) Lags to submit tax returns and pay taxes raise problems in relating tax payments to underlying economic activity. In Georgia, PIT is collected at source. CIT requires a more complex approach since part of the CIT due on a given year's profit is collected during the first quarter of the following year. Using monthly data, we recompute annual CIT payments to make them consistent with profit data.
- In order to assess the scope for efficiency gains through tax policy or tax administration measures, we break down the scope for tax productivity gains into two components:

$$\underbrace{1-PR}_{\text{Scope for prod. gains}} = \underbrace{(CR-PR)}_{\text{Tax policy}} + \underbrace{(1-CR)}_{\text{Tax administration.}}$$

With: PR =Productivity rate = Actual tax/Potential, and CR =Compliance rate = Actual tax/Potential reduced by tax breaks.[2]

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[1]Because of the assumptions of no tax break and single rate, the theoretical liability is larger than the tax obligation determined by the tax law.

[2]Assessing the impact of tax breaks is a tricky task. Our assumptions, which were discussed with the authorities, are not reported in the paper but are available upon request from the authors.

Table IV.1. Georgia: The Scope to Increase Tax Productivity
(In percent of the tax potential)

		2007	2008	2009	2010 (3Q)
PIT	Scope for PR gains	25	27	36	37
	Tax policy	2	2	1	1
	Tax administration	23	25	34	36
CIT	Scope for PR gains	62	54	36	N/A
	Tax policy	2	2	3	N/A
	Tax administration	60	51	32	N/A
VAT	Scope for PR gains	39	37	32	28
	Tax policy	15	15	16	17
	Tax administration	24	22	16	11

Source: Fund staff calculations.

* In 2007 the distance between actual PIT receipts and the tax potential amounted to 25 percent of the potential, as a result of small tax breaks (2 percent) and a compliance gap estimated at 23 percent.

6. **PIT compliance was hit by the crisis but remains relatively high**. PIT compliance deteriorated in 2009–2010, which is a standard feature in times of crisis, observed in many countries. Some of the loss will be recovered with the pickup in growth, but tackling under-declaration of personal income should remain an objective of tax administration. The recent reform of rental income declaration and payment constitutes another step in this direction. At the same time, it should be noted that our compliance is based on income as measured by national accounts which may diverge from taxable income.

7. **The CIT and VAT compliance rates have increased markedly since 2007**. Although CIT compliance was initially low in 2007, it improved very significantly in 2008 and 2009. This improvement appears justified, but at the same time the speed at which the correction occurred might have required measures likely to have strained the relationship between businesses and the tax authorities. More recently, improved tax dispute mechanisms and the appointment of an ombudsman should ensure that the tax regime remains business-friendly and conducive to entrepreneurship—a cornerstone of Georgia's economic policy since the rose revolution. VAT's compliance has also increased over time from an already high level, reflecting the adoption of reforms such as electronic invoice systems, or new customs clearance procedures. According to our calculations, VAT collection accounts for 80 to 90 percent of the potential, although productivity may be overestimated by measurement errors of private investment in the national accounts.

C. Georgia among Peer Countries: Insights from an International Comparison

8. **In order to put Georgia's tax performance into perspective, we compare tax rates, shares and productivities in a sample of European countries**. Table IV.2 reports summarized information (detailed tables are available in the Appendix). Tax productivities are now computed by dividing the revenues share by the standard rate. This method—used for international comparison purposes—is not without shortcomings, as nominal GDP is an imperfect approximation of the tax base; in the case of CIT, differences in profit-to-GDP ratios may distort cross-country comparisons. No result is reported for PIT, as most countries have progressive systems, with no meaningful standard rate.

Table IV.2. Georgia: Tax Rates, Shares, Productivity in Comparator Countries (2009)

		Top Rate (in percent)	Revenue Share (percent of GDP)	Tax Productivity (percent of potential)
PIT	Georgia	20.0	6.2*	NA
	Central and Eastern Europe 1/	22.2	3.7	NA
	Western Europe 2/	44.6	10.5	NA
SC	Georgia	0.0	0.0	NA
	Central and Eastern Europe	35.2	9.0	NA
	Western Europe	33.7	12.0	NA
CIT	Georgia	15.0	2.6*	17.4
	Central and Eastern Europe	16.6	2.5	15.2
	Western Europe	26.7	2.7	10.3
VAT	Georgia	18.0	10.5*	58.3
	Central and Eastern Europe	19.2	8.9	46.0
	Western Europe	19.8	7.2	36.3

Source: IMF Staff calculations.
* Excludes one-offs
1/ Albania, Armenia, Azerbaijan, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kazakhstan, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Ukraine, Turkey.
2/ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Luxembourg, Malta, Netherlands, Portugal, Spain, Sweden, United Kingdom.
Source: IMF Staff calculations.

9. **Owing to the absence of social contribution, wage taxation is low in Georgia.** The pure income tax component of wage taxation appears to be relatively high by international standards (as measured in relation to GDP), reflecting Georgia's flat rate, broad base, and some administrative features (source taxation or e-filing, for instance). However, the absence of social contribution represents a large revenue shortfall. Once social contributions are included, the share of wage taxation in Georgia is only half of that in neighboring countries and almost one-fourth of Western Europe's.

10. **CIT productivity is slightly above the average of Eastern and Central European countries,** mostly because Georgia does not have any major exemption for this tax. This result should however be qualified, as the share of capital income varies across countries and is relatively high in Georgia. Gross operating surplus amounted on average to 42 percent of GDP over 2007–2010.

11. **International comparison confirms that VAT productivity is very high in Georgia.** Georgia has one of the highest productivity rates in Eastern and Central Europe and outstrips Western Europe by almost 20 percentage points, reflecting the absence of reduced rates. The VAT-to-GDP ratio is respectively 1.5 and 3 percent higher than in the two samples of comparators, with tax rates on average 2 percentage points lower.

D. Conclusions and Policy Implications

12. **There appears to be limited room to raise CIT and VAT compliances**. Among the three taxes under consideration, CIT productivity has experienced the highest increase in recent years, bringing it slightly above international average. Further push could have adverse effects on business confidence and should be avoided. VAT efficiency is already very high compared to other taxes as well as by international standards, and it seems unlikely that there remain untapped productivity margins.

13. **At unchanged tax rates, raising the tax-to-GDP ratio and reversing the flattening observed since 2008 presents a challenge.** There are few tax breaks in the Georgian tax system and the existing ones have strong justifications, especially for VAT. Administrative reforms should continue to support PIT, although the economic upturn will naturally help recover part of the past productivity losses.

14. **Relative to comparator countries, Georgian PIT and VAT rates are on the low side**. This is particularly true of wage taxation, which is considerably reduced by the absence of social contributions. The VAT rate is 2 percentage points below the European average and VAT constitutes an effective instrument to raise revenues given its high efficiency and non-distortionary nature. Should the expenditure-based fiscal consolidation prove difficult to implement during the upcoming election years, raising the VAT rate would appear to be an attractive policy option.

Appendix

Table IV.3. Personal Income Tax

Country	Lowest Nominal Rate 09 (in percent)	Highest Nominal Rate 09 (in percent)	PIT Revenue (In Percent of GDP) 09
GEORGIA	12	20	6.2
Central and Eastern Europe			
Albania	10	10	2.3
Armenia	10	20	1.9
Azerbaijan	10	35	1.7
Bulgaria	10	10	2.9
Croatia	15	45	3.1
Czech Republic	15	15	3.6
Estonia	21	21	5.7
Hungary	18	36	7.3
Kazakhstan	…	10	1.7
Latvia	23	23	5.4
Lithuania	15	15	4.1
Macedonia	10	10	2.1
Moldova	…	18	2.4
Montenegro	12	12	4.1
Poland	19	32	4.6
Romania	16	16	3.5
Russia	13	35	4.3
Serbia	12	15	4.6
Slovakia	19	19	2.4
Slovenia	16	41	5.9
Ukraine		15	4.9
Turkey	15	35	4.0
Unweighted Average	14.7	22.2	3.7
Western Europe			
Austria	36.5	50	10
Belgium	25	50	12.2
Denmark	5.5	62.3	26.5
Finland	8.5	30.5	13.4
France	5.5	40	7.5
Germany	15	45	9.7
Greece	15	40	5.1
Italy	23	43	11.7
Luxembourg	8	39	7.7
Malta	15	35	6.3
Netherlands	2.5	52	8.6
Portugal	10.5	42	5.7
Spain	24	43	7
Sweden	32	56.7	16.4
United Kingdom	10	40	10.4
Unweighted Average	15.7	44.6	10.5

Source: Country authorities, European Commission, OECD, IMF Staff calculations.

Table IV.4. Social Security Contributions

Country	Total Social Security Contributions 1/. 09 (in percent)			Total SSC Revenue, 09 (In Percent of GDP)
	Employee	Employer	Total	
GEORGIA	0.0	0.0	0.0	0.0
Central and Eastern Europe				
Albania	11.2	21.7	32.9	4.3
Armenia	3.0	15.0	18.0	3.3
Azerbaijan	3.0	22.0	25.1	1.7
Bulgaria	12.1	16.8	28.9	6.5
Croatia	20.0	16.7	36.7	12.0
Czech Republic	11.0	34.0	45.0	15.4
Estonia	2.6	33.3	35.9	7.2
Hungary	17.0	27.0	44.0	13.2
Kazakhstan	10.0	4.0	14.0	1.5
Latvia	9.0	24.1	33.1	8.9
Lithuania	9.0	31.0	40.0	12.5
Macedonia	28.0	28.0	56.0	8.8
Moldova	6.0	23.0	29.0	9.3
Montenegro	17.5	14.5	32.0	8.9
Poland	22.7	17.6	40.4	11.3
Romania	16.2	27.8	44.0	9.7
Russia	0.0	34.2	34.2	5.4
Serbia	10.4	27.2	37.6	11.3
Slovakia	22.1	16.1	38.3	12.8
Slovenia	17.9	17.9	35.8	14.8
Ukraine	2.85	36.3	39.2	10.5
Turkey	12	22	34.0	n/a
Unweighted Average	12.0	23.2	35.2	9.0
European Union				
Austria	17.2	25.2	42.4	16.6
Belgium	13.1	24.8	37.8	20.6
Denmark				1.0
Finland	7.1	20.4	27.5	13.0
France	9.8	32.7	42.5	16.3
Germany	19.3	19.6	38.9	15.4
Greece	11.6	22.1	33.7	12.8
Italy	9.2	30.2	39.4	13.9
Luxembourg	12.4	11.4	23.8	12.2
Malta	10.0	10.0	20.0	6.2
Netherlands	22.5	17.5	40.0	13.6
Portugal	11.0	23.8	34.8	9.0
Spain	6.3	31.1	37.3	12.2
Sweden	7.0	23.4	30.4	10.9
United Kingdom	11.0	12.8	23.8	6.8
Unweighted Average	11.9	21.8	33.7	12.0

Source: Country authorities, European Commission, OECD, IMF Staff calculations.

1/ Includes old age, disability, and survivors; sickness and maternity; work injury; unemployment; and family allowances.

Table IV.5. Corporate Income Tax

Country	Nominal Corporate Income Tax Rate 09 (In percent)	Tax Revenue (In Percent of GDP) 09	Revenue Productivity 1/
GEORGIA	15	2.6	17.4
Central and Eastern Europe			
Albania	10	1.7	17.0
Armenia	20	3.4	16.9
Azerbaijan	25	3.8	15.4
Bulgaria	10	2.5	25.0
Croatia	20	2.8	14.2
Czech Republic	20	3.6	18.2
Estonia	21	1.8	8.6
Hungary	16	2.1	13.1
Kazakhstan	20	7.6	37.8
Latvia	15	1.6	10.7
Lithuania	20	1.8	9.0
Macedonia	10	1.1	11.0
Moldova	0	0.7	n/a
Montenegro	9	1.9	21.1
Poland	19	2.3	12.1
Romania	16	2.6	16.3
Russia	20	3.2	16.2
Serbia	10	1.1	10.7
Slovakia	19	2.5	13.2
Slovenia	21	2.0	9.7
Ukraine	25	3.6	14.4
Turkey	20	1.9	9.5
Unweighted Average	16.6	2.5	15.2
Western Europe			
Austria	25	1.9	7.6
Belgium	33	2.5	7.6
Denmark	25	2.5	10.0
Finland	26	2	7.7
France	33.3	1.3	3.9
Germany	15	0.7	4.7
Greece	25	2.4	9.6
Italy	27.5	2.4	8.7
Luxembourg	21	5.5	26.2
Malta	35	6.7	19.1
Netherlands	25.5	2.1	8.2
Portugal	25	2.9	11.6
Spain	30	2.3	7.7
Sweden	26.3	3	11.4
United Kingdom	28	2.8	10.0
Unweighted Average	26.7	2.7	10.3

Source: Country authorities, European Commission, OECD, IMF Staff calculations.

1/ Revenue productivity =Total CIT revenue as percentage of GDP divided by the CIT nominal rate.

Table IV.6. VAT

Country	Reduced Rates 09 (In percent)	Standard Rate 09 (In percent)	Tax Revenue (In percentage of GDP), 09	Revenue Productivity 1/
GEORGIA		18	10.5	58.3
Central and Eastern Europe				
Albania	…	20	9.5	47.5
Armenia	…	20	9.1	45.6
Azerbaijan	…	18	5.8	32.3
Bulgaria	7	20	9.0	45.0
Croatia	10	22	14.9	67.7
Czech Republic	10	19	7.1	37.4
Estonia	9	18	8.7	48.3
Hungary	5/18	25	8.4	33.6
Kazakhstan	…	12	n/a	n/a
Latvia	10	21	6.0	28.6
Lithuania	5/9	19	7.4	38.9
Macedonia	5	18	8.6	47.8
Moldova	5	20	12.7	63.5
Montenegro	7	17	12.6	74.1
Poland	3/7	22	7.4	33.6
Romania	5/9	19	6.7	35.3
Russia	10	18	9.1	50.6
Serbia	8	18	10.5	58.3
Slovak Republic	6/10	19	6.7	35.3
Slovenia	8.5	20	8.4	42.0
Ukraine		20	9.3	46.3
Turkey	8/1	18	9.6	53.3
Unweighted Average	8.45	19.2	8.9	46.0
Western Europe				
Austria	10	20	8.1	40.5
Belgium	6/12	21	7	33.3
Denmark	…	25	10.1	40.4
Finland	9/13	22	8.8	40.0
France	2.1/5.5	19.6	6.8	34.7
Germany	7	19	7.4	38.9
Greece	5.5/11	19	6.4	33.7
Italy	4/10	20	5.7	28.5
Luxembourg	3/6/12	15	6.2	41.3
Malta	5	18	7.8	43.3
Netherlands	6	19	7	36.8
Portugal	6/13	20	7.1	35.5
Spain	4/8	20	4.1	20.5
Sweden	6/12	25	9.7	38.8
United Kingdom	5	15	5.8	38.7
Unweighted Average	6.6	19.8	7.2	36.3

Source: Country authorities, European Commission, OECD, IMF Staff calculations.

1/ Revenue productivity =Total VAT revenue as percentage of GDP divided by the VAT standard rate in percent.