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Strengthening Institutional Capacity to
Compile and Analyze Financial
Soundness Indicators for Investment
Climate Assessment.

ISET Policy Institute

Financial Soundness Indicators (FSI): GEORGIA¹

Executive Summary

The economic turmoil that rippled across the world in the wake of the Global Financial Crisis of 2008 has once again brought into focus a simple axiom - a robust and healthy financial system is not only necessary, but also a critical component of successful economic development for any country. The Financial Soundness Indicators (FSI) developed by the International Monetary Fund (IMF), is one such tool for monitoring financial soundness. The FSI data is regularly compiled and reported by member countries, including Georgia. The aim of the FSIs is to assist the governments and private sector stakeholders in assessing the strengths and weaknesses of the country's financial system.

The purpose of this report is to present the FSI data in a way that is accessible and easy to interpret by a wide array of stakeholders, and help them analyze the economic implications underlying the FSI concepts. The report presents a “birds eye view” of Georgia's financial system and its' standing relative to other countries in the world and the developing countries in Europe/Central Asia. Additionally, the report analyzes the potential banking sector weaknesses, which if unchecked could stun growth and undermine further financial deepening.

The conclusions of the present report can be summarized in several major points. On the strengths side:

- Georgia's financial sector, mostly represented by commercial banks, generally exhibits **adequate capitalization levels**, especially since the national standards for capital adequacy are more conservative than the Basel I standards. With respect to banks' capitalization, Georgia's performance is even stronger than countries like Norway, Netherlands, Poland, Turkey, Hungary and the United States.
- By international standards, Georgian banks also exhibit **comfortable levels of liquid assets to total assets ratio**. The asset/liability structure is **overall well matched according to maturities**, although the issue is complicated by the fact that nearly all term deposits can be demanded before maturity date. In addition, judging by the share of non-performing loans in total loans, the **asset quality of Georgian banks is arguably high**, (in this respect Georgia outperforms many of its peers – countries like Ukraine, Slovenia, Romania, Bulgaria etc.), although with some important caveats outlined in the report.

On the weaknesses side, Georgia's economy as a whole is plagued by several financial markets related problems:

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- High cost of finance;
- Prevalence of short-term financing;
- High dollarization of deposits and currency induced credit risk;
- Low levels of financial depth; and
- Undeveloped capital markets.

These problems are interrelated, and in some cases form part of a vicious cycle in which one weakness contributes to and reinforces the other.

The report highlights several major reasons behind high cost of finance. Among them - low levels of domestic savings, especially in local currency; high cost of foreign financing, given moderate country risk ratings for Georgia; and the high perceived risk of doing business in Georgia, despite the low levels of nonperforming loans ratios.

The last point in particular highlights the problem with taking the established measures of asset quality at face value. The quality of assets underlying the liabilities of Georgian banks suffers from low diversification of loans among regions and economic sectors and the lack of reliable information about the creditworthiness of the borrowers, especially businesses. Incidentally, lack of efficient credit reference agencies coupled with low reporting standards of businesses also contribute to the prevalence of short-term financing and prevent financial deepening.

The analysis of investment climate presented in the report highlights the lack of experience in the line of business, lack of qualified management and personnel, and issues with financial literacy of the bank clients as some of the main obstacles to securing bank credit. High leverage ratios among the qualified borrowers appear to be one of the obstacles to securing credit as well. The report points to the lack of developed capital markets and lack of alternative ways to finance capital as one of the primary reasons behind high leverage ratios.

Uncertainty about property rights and the legal status of borrowers' collateralizable assets also adds to the perception of risk and raises borrowing costs. This issue in particular is highlighted in the report's growth diagnostic analysis, as well as in the interviews with local businesses and banks.

In addition, the Georgian banking system appears vulnerable to sudden movements in real estate market prices, as a high proportion of loans are secured on commercial real estate. Furthermore, domestic borrowers whose revenues are in local currency, but whose liabilities are dollarized, are highly vulnerable to exchange rate fluctuations, and thus present a credit risk to the banks.

The report concludes by suggesting policy actions to help alleviate the problems of the financial system and tackle the high borrowing cost.

Policy recommendations encompass both long and medium-run horizons. In the medium run, facilitating property registration, improving credit information sharing mechanism, ensuring security of bank deposits and legislating improvements in reporting standards for firms could go a long way towards increasing domestic savings, reducing the cost of borrowing and improving the credit risk profile of banks' clients.

Among the long-run measures, the government needs to pay particular attention to diversifying the industrial base of the country, setting clear development goals to encourage banks to finance innovation, and creating a solid legal base for developing capital markets as an alternative source of firms' financing.

Some financial sector problems, such as low domestic savings may not be fixed easily, as they would require reducing the income and wealth inequality among the population. Government's economic strategies aimed at job creation and inclusive growth could become part of a long-term solution.

Finally, the policy prescriptions include recommendations on what the government should refrain from doing. Given the high concentration of the banking sector in Georgia, it may be tempting to attribute high cost of finance to monopolistic pricing behavior of major banks. However, the authors of the report think that the focus of such policies would be counterproductive.

Evidence from the report points to a rather high level of competitiveness among banks despite the high industry concentration. Competitive behavior is supported mainly by the relatively low barriers to entry into the Georgian financial market, and the threat of competition. Furthermore, introduction of deposit insurance and other depositor protection measures could indirectly help reduce market concentration, as such guarantees may encourage depositors to put their savings in smaller and systemically less important banking institutions.

1 Background

Financial systems of developing and emerging markets of Europe and Central Asia have been among those hard hit by the financial crisis of 2008. The ripple effect of the banking crises in Western Europe and the United States nearly devastated the highly leveraged and cash strapped banking systems in Iceland, Ukraine, the Baltic states, Slovakia, and Hungary, to name a few.

The Georgian banking system may have been “lucky” in the sense that the turbulence on the financial markets did not result in the similar scale bank bailouts and bank runs that were witnessed for example in neighboring Ukraine. At least in part this may have been due to conservative capital buffers held by Georgian banks. Another factor was strong shareholders support. Yet, the global financial crisis had severe economic consequences even in Georgia. In 2009 the country’s GDP growth dropped to -4%, from the average of 9.3% since 2003. The recovery of 2010-2012 raised the growth rate to the average of 7%. The levels of foreign direct investment have also declined to 6.9% of GDP in 2010 from the earlier peak of 17.2% in 2007. Domestic lending to private sector has flattened out and remained well below the regional average. To compare, in 2012 Georgia’s lending to the private sector stood at 34.5% of GDP while in the developing economies of Europe and Central Asia, the share of private lending in GDP was 49.9%

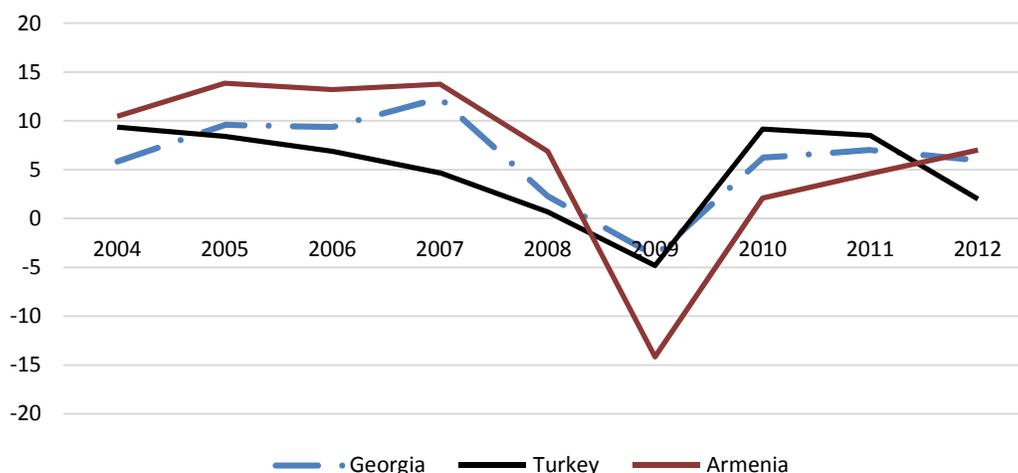
Since the 2008 crisis, the international regulatory and advisory authorities called for the improvement of the financial regulations and supervision worldwide, and proposed reforms to rectify problems in the areas where systemic weaknesses were exposed. These reforms are reducing liquidity risk of banks, increasing capital adequacy and capital structure transparency, and placing safeguards against the buildup of leverage. Yet, any financial system’s transparency remains in jeopardy until the immediate stakeholders, such as governments, private enterprises, as well as individuals, have the capacity to follow and monitor the developments in the financial sector.

This report aims to provide a broad and comprehensive overview of the Georgian financial sector’s health using mainly the FSIs compiled by Georgia under the IMF guidelines (Appendix 3). In addition, we discuss the constraints facing the financial sector in Georgia, focusing on the available growth opportunities and structural changes needed to overcome financial bottlenecks.

2 Macroeconomic Environment

The Georgian economy expanded significantly over the last decade. After the 2003 Rose Revolution, the new government was able to implement radical reforms in business regulatory regime as well as in macroeconomic management, substantially improving economic performance. Starting from 2003 until the financial crises of 2008, the average annual growth rate was 9.3%. In 2009 growth decreased to -4%. This decline was driven in part by the global crisis and in part by the armed conflict with Russia in 2008. Figure 1 shows the benchmarking of Georgian growth. Despite the double negative shock in 2008, Georgia's growth performance was comparable to that of other countries in the region (Armenia and Turkey).

Figure 1: GDP Growth Rates, 2004-2012
(%)



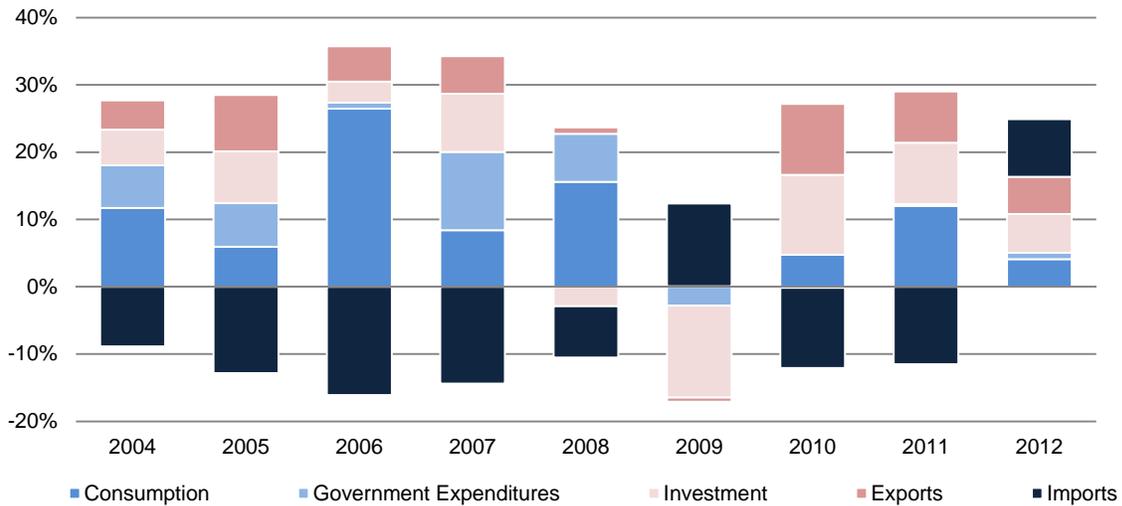
Source: World Development Indicators and International Financial Statistics.

The country's economy started to recover in 2010 but slowed down again in the fourth quarter of 2012. This was primarily due to changes in the government, as the opposition coalition "Georgian Dream" came in to power, and the wave of reforms created a long period of political uncertainty. According to the latest National Statistics office of Georgia (GeoStat) estimate, the annual growth rate in 2013 was 3.1%. This deceleration was mainly driven by a slowdown in private investment, weak credit growth, and budget underspending.

Financial intermediation experienced a significant decline during 2008-2009 but contributed positively to the economic recovery starting from 2010. The largest contributors to the post-crisis growth were trade, manufacturing, transport and communication, financial intermediation, and construction sectors.

On the demand side, investment (both public and private), private consumption and exports slowed down significantly in 2009, but recovered subsequently in 2010 (Figure 2).

Figure 2: Contribution of GDP Components to Growth (Nominal), 2004-2012

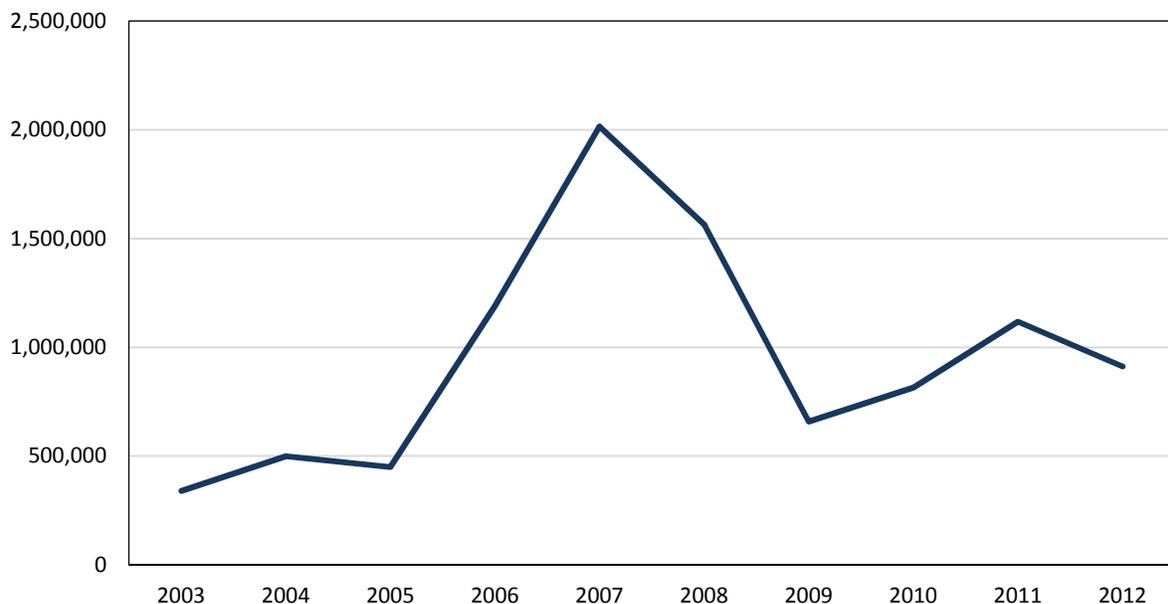


Source: National Statistics Office of Georgia (GeoStat).

Since 2003, Georgia relied on foreign direct investment as the main source of foreign capital. Foreign direct investment constituted about 12% of GDP in 2007 and this contribution declined during and after 2008 (Figure 3). In 2011, the same indicator was 4.6% and decreased to 3.3% of GDP in 2012. The latest decline was associated mainly with the political uncertainty following the 2012 transfer of power.

Figure 3: Foreign Direct Investment, 2003-2012

(\$ thousand)

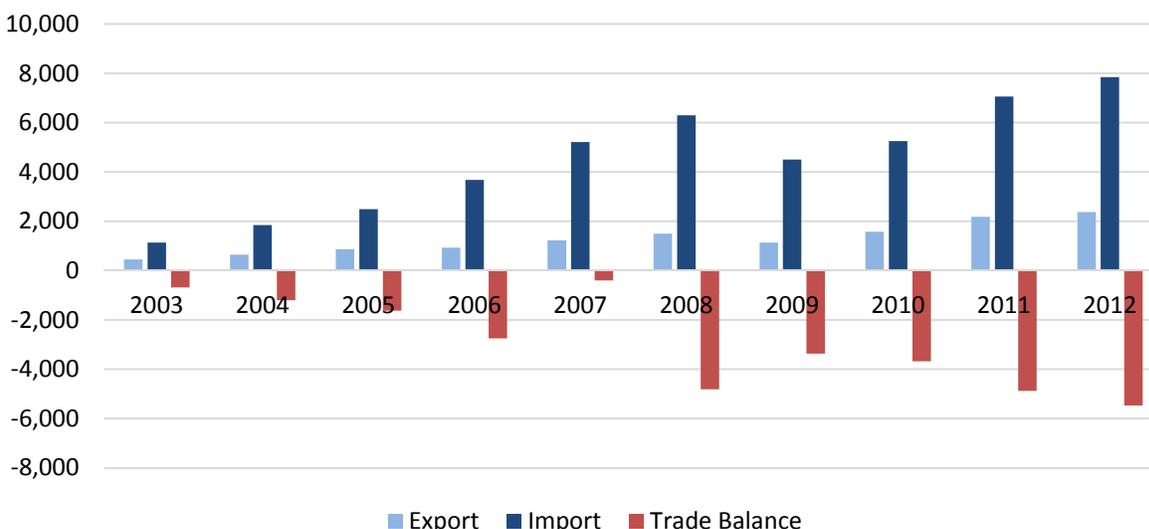


Source: National Statistics Office of Georgia (GeoStat).

Despite the growth gains of 2004-2007, the unemployment rate in Georgia remained very high. The official unemployment rate in 2012 was 15%. The urban unemployment stood even higher at 26% compared to the rural unemployment of 7%. The low rates of unemployment among the rural population could be explained by self-employment in the agricultural sector and subsistence farming. The self-employment statistics may therefore hide the real extent of unemployment in the rural areas. Unemployment of 32.2% for 2012 is the highest among young people in the 20-24 age range

As for the external sector, the Georgian economy remains highly dependent on imports (Figure 4). While the total trade turnover has increased, the trade deficit kept growing, maintaining the country's status as a net borrower from the rest of the world.

Figure 4: Export, Import, Trade Balance, 2003-2012
(\$ million)



Source: National Statistics Office of Georgia (GeoStat)

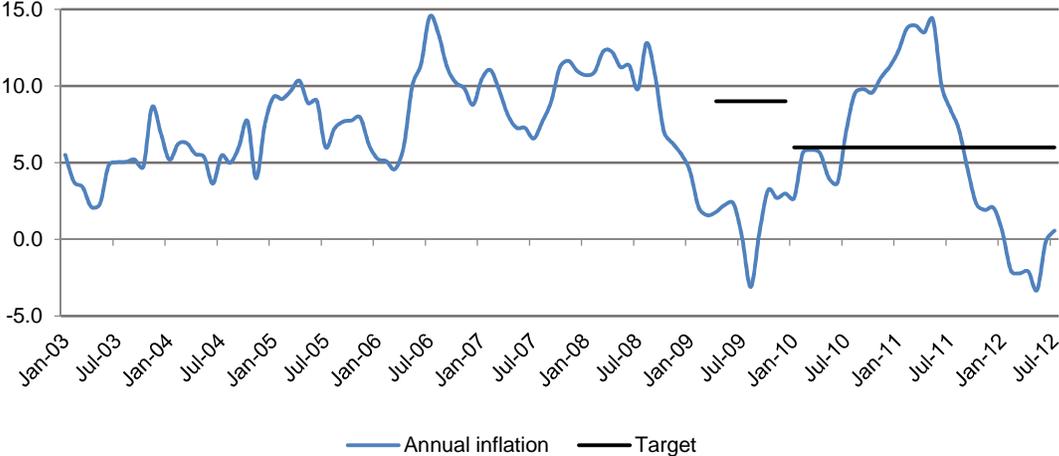
Since the Rose Revolution, the Georgian government managed to attract significant amounts of external financing and as a result, the country's external debt has increased. External debt currently stands at about 79% of the total government debt of Georgia. This figure, however, is still not too high compared to other countries in Europe (United Kingdom at 90%, Germany at 83%, Hungary at 74%, and Poland at 55%). Starting from 2003 the debt share of GDP (debt burden) at 44.9% was decreasing and in 2007 reached 16.8%. However, after the 2008 crises, both the absolute values of external debt and debt burden have increased. In 2013, external debt was already 27% as a share of GDP.

Despite the evidence of increased debt burden, the Georgian government's fiscal stance since 2010 can be described as prudent. After the budget deficit reached 9.3% of GDP in 2009, the government embarked on a policy of fiscal consolidation, managing to cut down the deficit to 3.3% of GDP in 2011. Currently, the overall projected government debt as a share of GDP in Georgia stands at 33.7% (in comparison for instance with Poland's 57.6% or Hungary's 79.8% of GDP).

The average weighted interest rate on the public debt portfolio is 1.9%, and most of the debt is long-term in nature.

Georgia managed to overcome high inflation rates of the early and mid-1990s, and has stabilized price level growth. In June of 2013, inflation rate stood at 0.20%, as reported by the National Bank of Georgia (NBG). The average inflation rate in 1996-2013 was 5.52%, ranging from 59.31% in 1996 to -3.30% in May of 2012.

Figure 5: CPI Inflation, 2003-2012



Source: National Statistics Office of Georgia (GeoStat).

In 2009, NBG adopted an inflation targeting monetary policy regime. At the current stage, the inflation target is set at 6% for the medium term (for the years 2011-2014) and 3% in the long run (Figure 5).

Overall, Georgia’s growth performance in the last decade has been quite impressive, and the macroeconomic environment remained stable despite the global economic crisis. Nevertheless, jobless growth remained a persistent problem. High unemployment rates coupled with generally high skilled labor premiums reported by the firms highlight the need for new skills and new training programs to jumpstart growth in high-productivity sectors.

3 Georgian Financial Sector Structure and Trends

3.1 Overview of the Financial Sector Structure

Georgian financial sector is mostly comprised of deposit-taking banking institutions. Insurance and microfinance institutions comprise a small proportion of the total financial sector, and indirect financing through stock exchange is not prevalent among the Georgian companies. In order to assess the country's financial soundness, the current report will therefore mostly focus on the banking sector financial analysis.

The law on the National Bank of Georgia (NBG) defines the following financial sector representatives that are either subject to supervision or to a simple registration procedures at NBG: a commercial bank, non-bank depository institution, insurance undertaking, reinsurance undertaking, brokerage company, independent registrar of securities, asset managing company, central depository, specialized depository, stock exchange, microfinance organization, founder of non-state pension scheme, insurance brokerage company, accountable company, qualified credit institution, money transfer agent, currency exchange points.

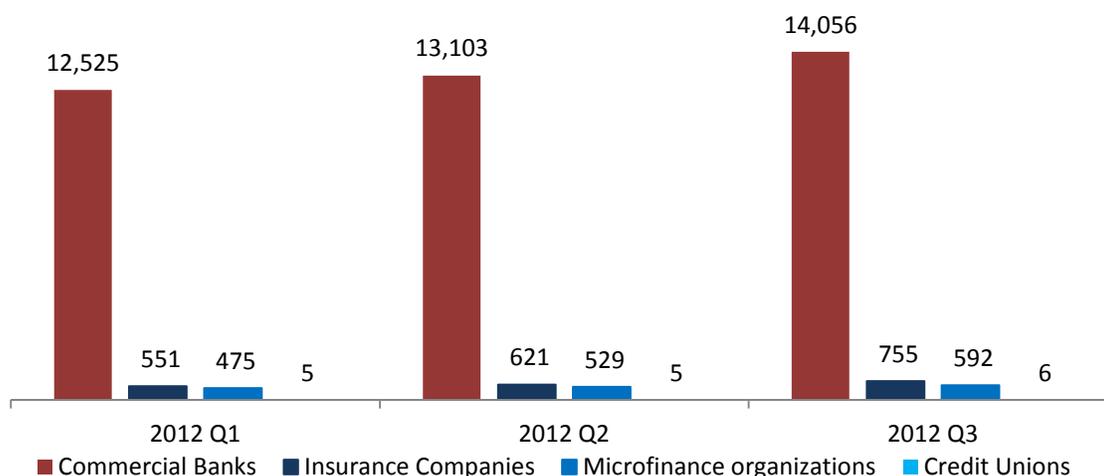
As of February 2013, the sector structure is given in Table 1. Although a significant number of financial institutions other than commercial banks is active on the market, the latter comprises the biggest asset share of the sector– around 95% (Figure 6).

Table 1 : Number of Financial Institutions, January 2013

Commercial Banks	20
Non-Bank Depository Institutions	18
Microfinance Organizations	61
Exchange Bureaus	1020
Stock Exchanges	1
Insurance Companies	15
Pension Funds	6

Source: National Statistics Office of Georgia (GeoStat).

Figure 6: Assets of Financial Institutions
(million GEL)



Source: National Bank of Georgia (NBG).

Commercial banks in Georgia are mostly engaged in traditional banking activities, i.e. deposit-taking and crediting with negligible trading book and asset securitization (Table 2). This implies the possibility of a more straightforward assessment of the financial sector risks. Although 20 banks operate on the sector, most of the financial sector assets are concentrated in the several largest banks of Georgia. In particular, the 37% and 26% of assets belong to the two largest banks in Georgia (Figure 7). The 82% of the assets are concentrated in the 5 largest banks of Georgia and the rest, 18%, is represented by the remaining 15 banks.

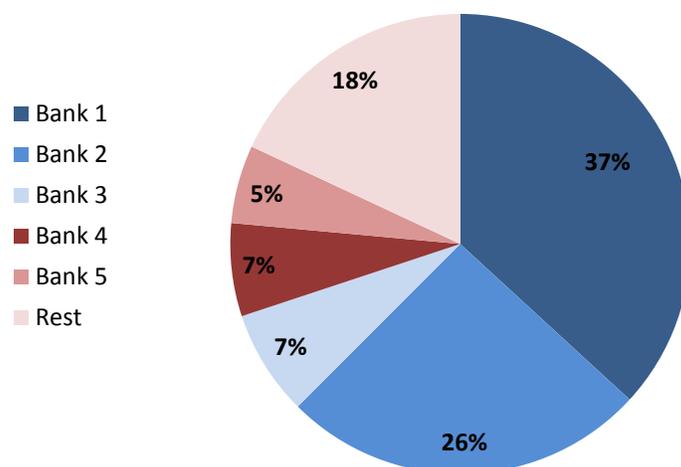
Table 2: Balance Sheet, as of December 2012

	Thousand GEL	Share (%)
Cash	740,685	5%
Balances on Correspondent Accounts	2,544,320	18%
Securities for Dealing Operations	11,111	0%
Investment Securities	1,078,033	8%
Net Loans	8,124,213	57%
Loans to Government	284	0%
Loans to Non-Financial Sector and Households	8,711,798	61%
Interbank Loans	21,173	0%
Loan Loss Reserves (-)	-609,041	-4%
Accrued Interest and Dividends Receivable	115,674	1%
Equity Investments	369,406	3%
Fixed Assets	990,278	7%
Other Assets	380,981	3%
Total Assets	14,354,701	100%

Liabilities	11,964,638	83%
Deposits of Banks	553,503	4%
Non-bank Deposits	7,649,851	53%
Demand Deposits	3,269,793	23%
of which, General Government Deposits	173,040	1%
Term Deposits of Legal Entities	1,310,111	9%
of which, General Government Deposits	247	0%
Term Deposits of Individuals	3,069,947	21%
Accrued Interest and Dividends Payable	172,321	1%
Borrowed Funds	3,266,420	23%
Other Liabilities	322,543	2%
Equity Capital	2,390,064	17%
Paid-in Capital	849,327	6%
Capital Reserves	1,132,016	8%
Retained Profits	408,721	3%
Total Liabilities and Equity Capital	14,354,701	100%

Source: National Bank of Georgia (NBG).

Figure 7: Bank Assets, Q3 2012



Source: National Bank of Georgia (NBG).

Direct financing is not a common source of funding for Georgian companies. This is well shown in the average daily turnover ratio in the Securities Market FSI indicator which measures the number of securities bought and sold during a trading period divided by the average number of securities outstanding at the beginning and the end of the trading period. Turnover ratio is equal to 0.3, which shows rather low depth of the market due to low trade volumes.

3.2 Macroeconomic Environment - Impact on the Financial Sector

Macroeconomic environment is an important component of financial soundness in Georgia. Moderate country rating (Table 3) implies high cost of funds for Georgian commercial banks. High reliance on external funding poses some risks to the system liquidity especially in times of stress. However, with the support from international financial institutions and financially-strong shareholders, funding needs have usually been met in times of stress. For instance, during the 2008 financial crisis, Georgian banks maintained high resilience and no major bailouts were necessary, unlike in many economies worldwide. This was largely due to NBG policy, shareholder support and high prevailing prudential ratios of commercial banks.

Table 3: Georgia Country Rating

Country	Fitch		Moody's		S&P	
	Rating	Outlook	Rating	Outlook	Rating	Outlook
Georgia	BB-	Stable	Ba3	Stable	BB-	Stable

Source: Fitch, Moody's, S&P public data.

Small market size as reflected in the total country GDP and commercial banks' asset size prevents significant economies of scale and thus negatively affects banking sector profitability. Low real sector penetration of Georgian banks further exacerbates the economies of scale problem (Figure 8).

The challenges in the country's macroeconomic environment described above imply shorter funding maturities for the Georgian banks. This, in turn, implies the prevalence of short-term lending and prevents banks from expanding their financing opportunities based on the existing client base.

To answer these challenges, strategic long-term government policies need to be discussed and implemented. For example, lending to the real sector could be facilitated by government policies to increase industry's share in the economy. Such policies could potentially improve the demand for bank financing on the part of the domestic firms. At the same time, the increase in banks' exposure to diverse sectors could lead to a decrease in the firms' market 'betas'², thus reducing the firm's cost of capital, and further encouraging lending.

In addition, the right policies can also help Georgian banks take advantage of the current situation by expanding their client base to include the borrowers in need of long-term financing.

As per NBG data, average maturity of loans is currently 15.8 months, while average interest rates are 19.4%. Savers refrain from saving in the domestic currency, GEL, for long-term, while

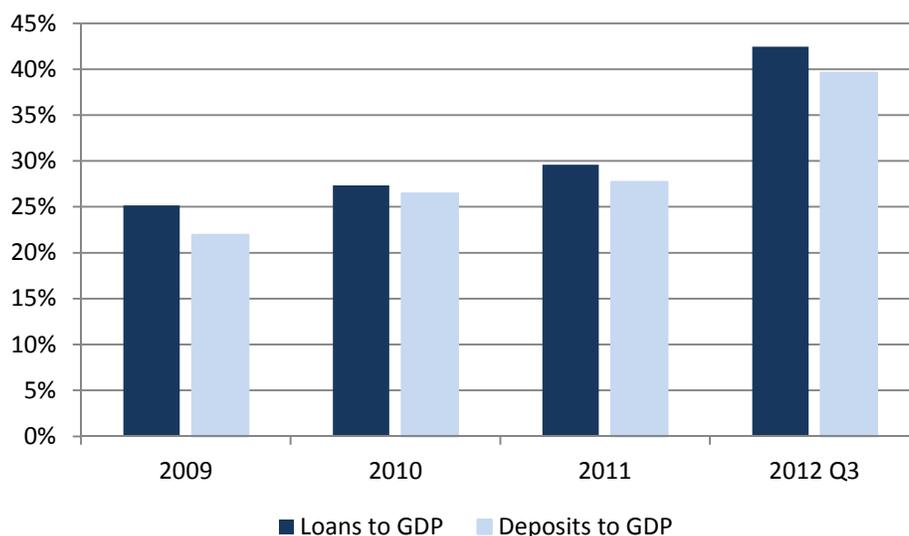
² A correlated volatility of the value of the firm relative to the volatility of the market portfolio value. A lower market beta implies greater stability for a particular firm.

wholesale lenders lend only in foreign currency.³ In the meantime, the Central Bank has only short-term lending facilities in GEL⁴. Hence, long-term funding in local currency is virtually non-existent, and the market does not give opportunities for currency transformation because of the absence of currency derivative products.

As a result, long-term financing is only denominated in foreign currency, implying foreign currency induced credit risks.

As presented in Figure 8, loan to GDP and deposits to GDP ratios are equal to 42.5% and 39.6% by the end of 2012 Q3 respectively, reflecting the low level of financial depth in the country. This, however, does not imply low indebtedness of the population, as individual borrowers exhibit quite high debt to income ratios stemming from short-term lending.

Figure 8: Loans and Deposits to GDP Dynamics



Source: National Bank of Georgia (NBG) and National Statistics Office of Georgia (Geostat).

Low financial literacy and lack of transparency on the financial products offered by the market are both contributing factors to low financial market penetration and asset quality. For example, throughout the last distress period (financial crisis of 2008) the highest deterioration in asset quality was observed for credit cards, which were the least transparent of financial products at that time. Less internet/computer-friendly environment reflecting low literacy also implies high costs to commercial banks as financial literacy affects the use of various banking services, in

³ This situation arises from the limitations brought about by the currency structure of liabilities. Regulations oblige banks to limit their open FX position to 20%. Moreover, credit in foreign currency is cheaper in terms of the nominal interest rate. This, and the lack of significant devaluations in recent years, encourage consumers to take FX induced risk.

⁴ NBG does not lend long term to commercial banks. Its main monetary policy instrument is the one week refinancing loans that are disbursed to commercial banks on an auction basis.

particular internet banking. The heavy reliance on the traditional ways to conduct transaction with banks contributes to the high costs of financing.

Another important factor contributing to high cost of finance in Georgia is the low financial reporting standards among Georgian companies.⁵ The substandard financial reporting significantly complicates loan evaluation for commercial banks leading to higher administrative costs and lower asset quality. In this environment, the development of stock exchange becomes infeasible, which at present is poorly capitalized (See Box 3 for the review of economic literature on these issues).

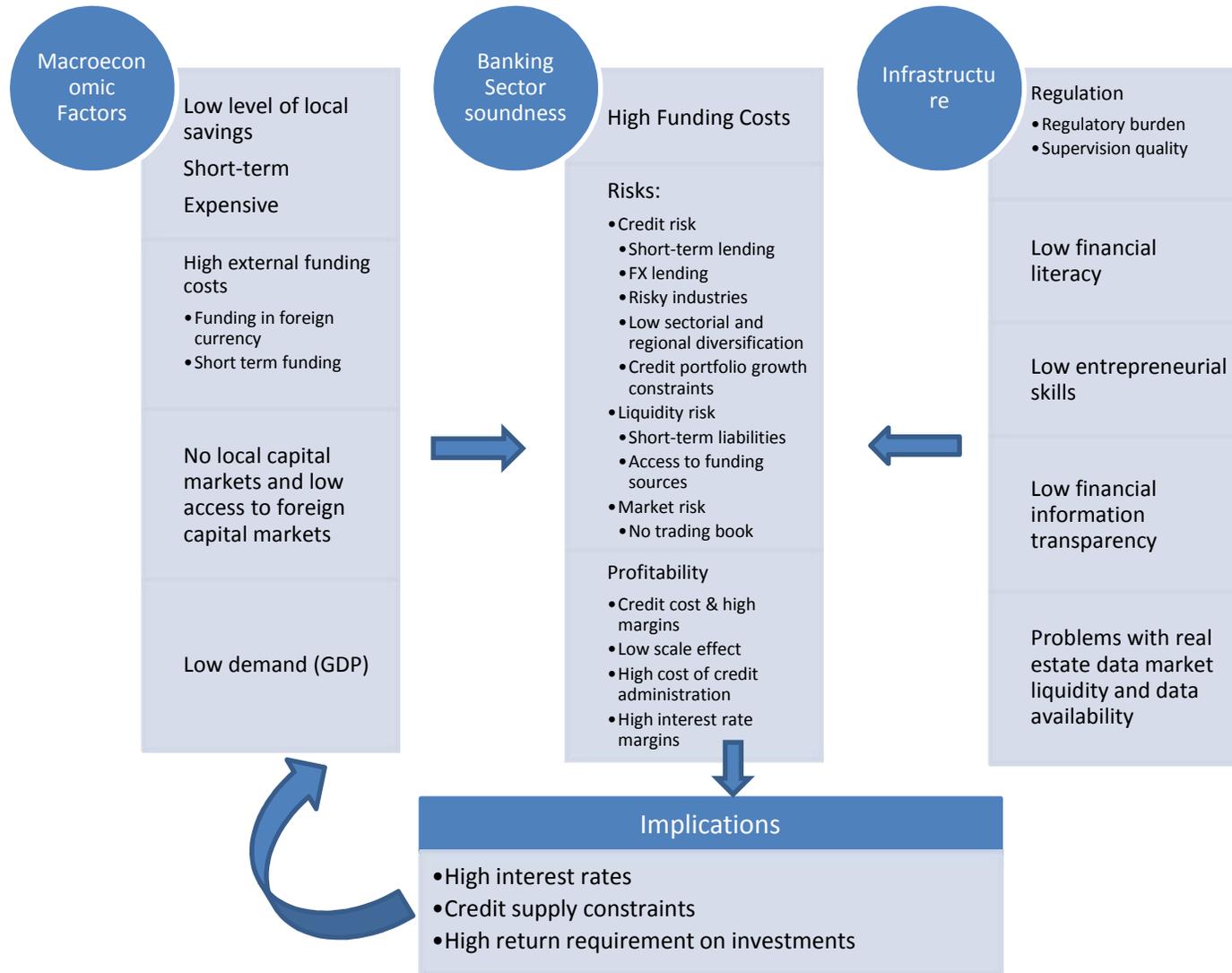
Overall, the interrelationship between macroeconomic factors, commercial bank performance, and financial depth could be summarized in the following way (Figure 9):

- Influence of macroeconomic/systemic factors on the financial sector
 - Low level of local savings and their short maturity, as well as reliance on foreign funding, translates into short-term lending by banks. High debt service ratios and foreign currency induced credit risks of the domestic borrowers adversely impact asset quality of the banking sector and raise the specter of the liquidity risk.
 - Undeveloped capital markets imply that no source of additional funding exists for local corporations, which in turn necessitates their reliance on indirect financing, and contributes to the higher leverage of the firms. These factors also adversely impact the banks' asset quality. Development of local capital markets could mitigate these problems, and provide a much-needed source of liquidity for Georgian banks as well as corporations.
- Impact of soft infrastructure on the financial sector
 - Although high prudential ratios, such as liquidity and capital adequacy provisions, help safeguard the banking sector's soundness and resilience, they also imply higher operating costs for the banks. This, in turn, negatively impacts banking sector profitability and growth;
 - Low financial literacy among the general population, and lack of in-depth knowledge of accounting standards among entrepreneurs have a negative impact on both the asset quality and profitability of the commercial banks;
 - Better financial information transparency standards and a better credit information sharing mechanism could decrease the administrative costs and have a positive impact on bank profitability. Such measures could also help lengthen the maturity of bank credit to the private sector (Box 3).
- Market outcomes
 - Funding constraints, high cost of funds, and low economies of scale in the banking sector create inefficiencies and result in high market interest rates;
 - Due to the low levels of domestic industrial development, banks are reluctant to diversify their portfolio across economic sectors and across regions. This results

⁵ Despite a government initiative to create an independent financial reporting and audit supervision agency, evidence on substantive implementation of recommendations and quality improvement remains missing.

- in high interest rates for new industries. In the absence of clear development goals of the country, banks are understandably reluctant to commit to finance innovation;
- The overall country risk and the relatively high risks associated with the banking sector further drive lending interest rates upward, as investors require high return on their capital.
 - Self-fulfilling macroeconomic outcomes
 - High interest rates and the low supply of financing to diverse industries keeps demand at low levels and undermines growth potential. Additional financing to firms via stock exchange is unavailable due to the inefficiency of the small market size.

Figure 9: Macroeconomic Environment Impact on Financial Sector



Source: Author's framework.

3.3 Ownership Trends

The Georgian banking sector ownership structure has been improving in recent years. Several years ago, bank ownership was mostly concentrated in the hands of local individual investors. Currently, the largest bank of Georgia is listed on the London Stock Exchange, and significant portion of the shares of the second largest bank is owned by international financial institutions. Foreign banks and holdings are majority owners in large domestic banks, while other institutional investors are represented in the ownership of various Georgian banks. Some significant acquisitions are listed in Table 4.

Table 4: Bank-Ownership-Related Changes

2000	On May 26, the International Finance Corporation (IFC) and the German Investment and Development Company (DEG) became the holders of shares at TBC Bank, with participation of 10% each. ⁶
2001	Commerzbank becomes a shareholder of a Georgian Bank – MBG. ⁷
2005	In January the major strategic shareholders of ProCredit Bank IMI AG, which owns 39% of the shares, changed its name to ProCredit Holding AG. Since then, the holding has increased its shares in Procredit bank Georgia. ⁸
2006	Bank Republic entered into agreement with Societegenerale Group and EBRD on acquiring 70% of the BR shares. ⁹
	Bank of Georgia lists its shares in the form of GDRs on the London Stock Exchange (LSE: BGEO)
2009	EBRD, FMO, JP Morgan and Ashmore became the shareholders of TBC Bank. ¹⁰
2010	Oikocredit, Ecumenical Development Co-operative Society U.A., came in as the first foreign shareholder of the Bank Constanta.
2012	China's Xinjiang Hualing Industry & Trade (Group) Co. Ltd (the "Hualing Group") acquired 90% equity stake in JSC Basisbank. ¹¹

⁶http://tbcbank.ge/en/about/bank_overview/history/?id=370

⁷History of Procredit Bank, Georgia. (n.d.).

http://procreditbank.ge/index.php?lang=ENG&item_id=25&component=STATIC_CONTENT&menu_id=14&sub_menu_id=48#2001E (accessed 7 April 2014).

⁸History of Procredit Bank, Georgia. (n.d.).

http://procreditbank.ge/index.php?lang=ENG&item_id=25&component=STATIC_CONTENT&menu_id=14&sub_menu_id=48#2001E (accessed 7 April 2014).

⁹http://www.republic.ge/index.php?sec_id=304&lang_id=ENG

¹⁰http://tbcbank.ge/en/about/bank_overview/history/?id=1924

¹¹History of Basis Bank. (n.d.). http://basisbank.ge/en/about_bank/history/ (accessed 7 April 2014).

JSC Bank of Georgia's UK incorporated holding company Bank of Georgia Holdings PLC is listed on the main market of the London Stock Exchange (BGEO LN) since February 2012.¹²

Such a trend in ownership structure reflects increasing trust towards the Georgian financial sector on the part of foreign investors, as well as an opportunity for better integration into the global financial market. Sound and experienced global investors bring their expertise to the local market, which can in turn lead to product diversification, better risk governance and improved corporate governance practices.

3.4 Capital Adequacy of the Sector

Georgian commercial banks are adequately capitalized as reflected in the following financial soundness indicators:

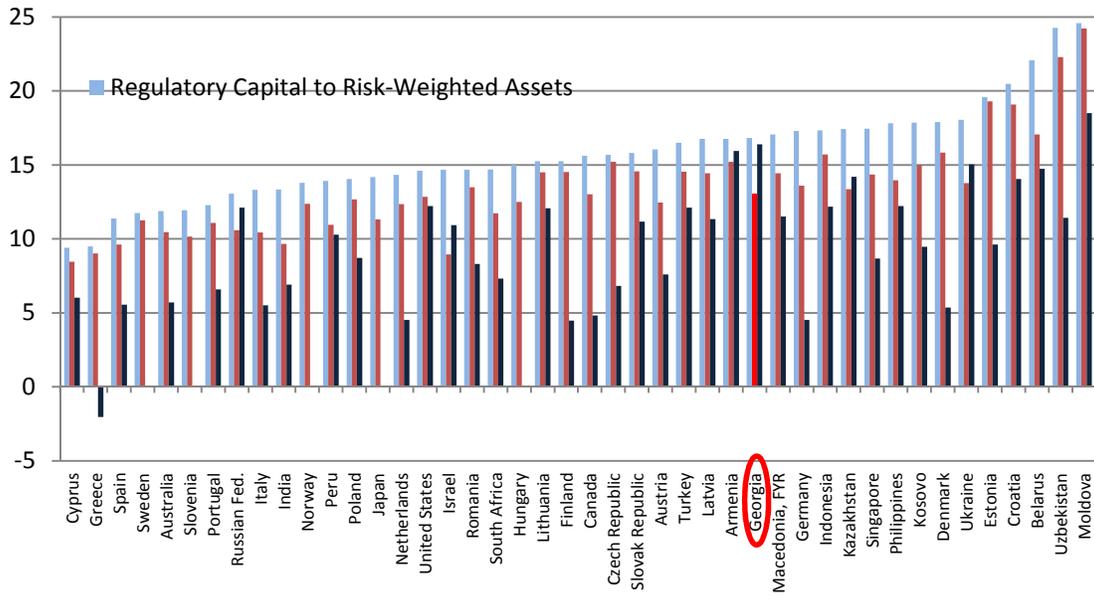
- Regulatory Capital to Risk-Weighted Assets ratio has stably remained above 16% in past years;
- Regulatory Tier 1 Capital to Risk-Weighted Assets ratio has stably remained above 11 % in past years; and,
- Capital to Assets ratio has stably remained above 16 % in past years.

Capital adequacy ratios over time and in comparison with other countries are given in Figure 10. The banking sector has comfortable levels both at the Tier 1 level and total regulatory capital level. This implies sound loss absorbency both on a going-concern and gone-concern basis. However, the comparison should be performed with care as long as capital requirements are not currently based on Basel II standards. The current requirements are based on Basel I standards, with some additional differences from Basel I (Box 1). When looking at the share of non-performing loans to total regulatory capital, and at capital to assets leverage ratio, Georgia does well among a group of comparable countries (Figure 11). The former, however, should be analyzed with care, as long as the past-due-day based criteria do not usually adequately reflect the quality of assets.

As for the leverage ratio (figure 12), Georgia actually outperforms its peers, which increases confidence in the soundness of the domestic banking sector.

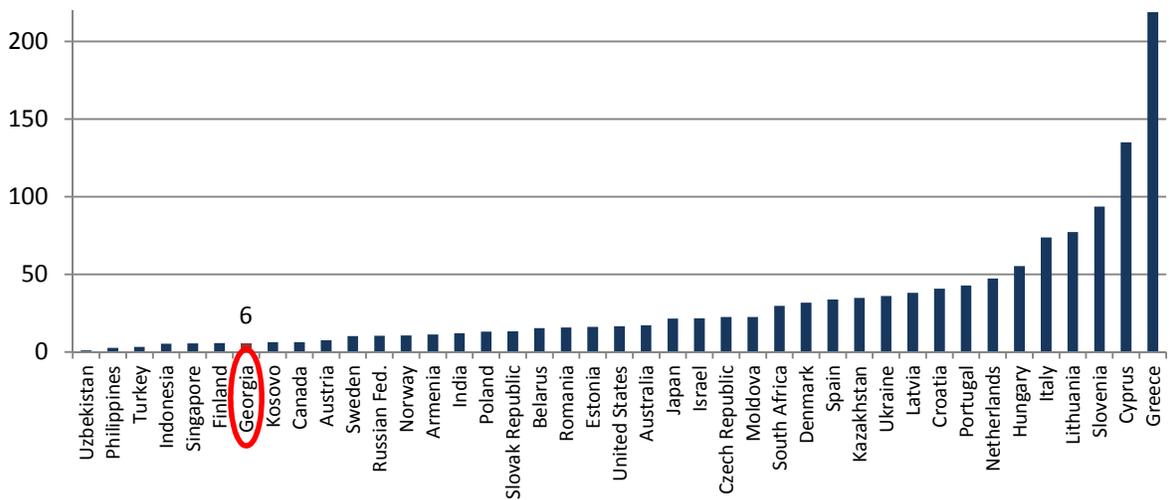
¹²Bank of Georgia Listing and Quotation. (n.d.). <http://bankofgeorgia.ge/en/ir/shareholder-information/listing-and-quotations> (accessed 7 April 2014).

Figure 10: Capital Adequacy Related FSIs by Countries (latest available data)



Source: IMF Financial Soundness Indicators.

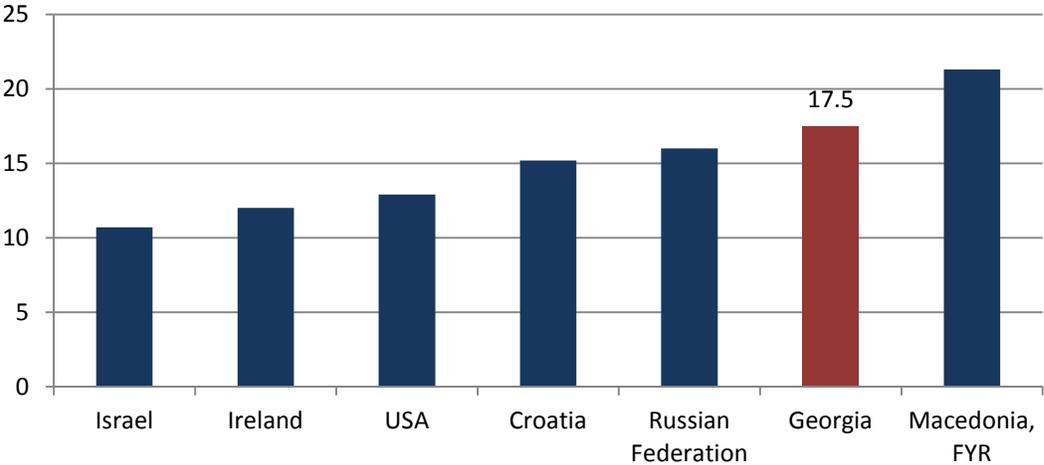
Figure 11: Non-performing Loans Net of Provisions to Capital (latest available data)



Source: IMF Financial Soundness Indicators.

For ease of comparison, a look at the Basel I ratios might be helpful. Conservative capital adequacy ratios of Georgian banks are apparent for the year 2005.

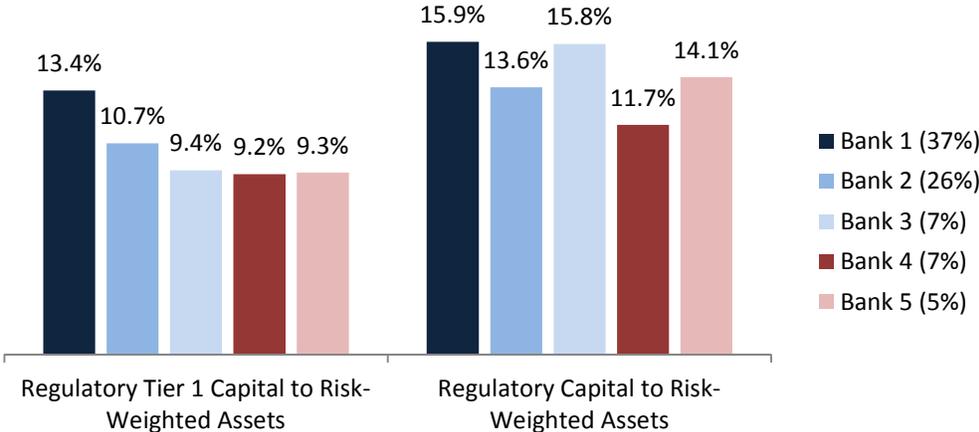
Figure 12: Regulatory Capital to Risk Weighted Assets, 2005



Source: The World Bank data.

Despite the presence of 20 banks on the market, the Georgian banking sector’s main market share belongs to the five largest banks. The high industry concentration, however, may not be a problem, as long as these banks manage to carry major sector risks effectively. To this end, it would be important to consider their individual capital adequacy ratios. As shown in Figure 13, the largest banks maintain comfortable levels of capital adequacy. The biggest bank has the highest Tier 1 and regulatory ratios equal to 15.9% and 13.4%, respectively.

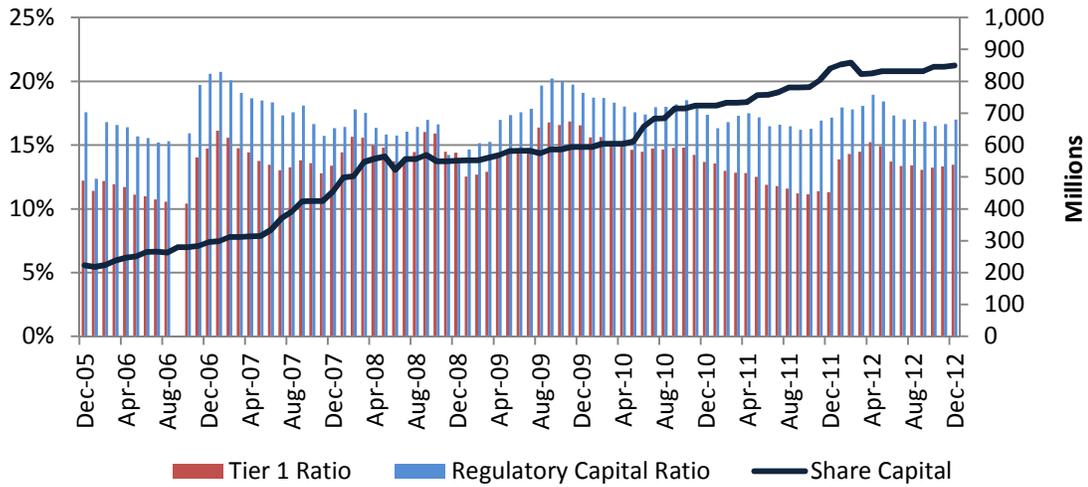
Figure 13: Capital Adequacy Ratios of the Largest Georgian Banks, Q3 2012



Source: National Bank of Georgia (NBG).

It should be noted that there have not been bank failures or major bailouts in the recent decade. On the one hand, it could be due to the conservative capital buffers held by Georgian banks, but on the other hand, it could be the result of strong shareholder support, as evidenced by Figure 14.

Figure 14: Share Capital and Capital Adequacy Ratio Trends



Source: National Bank of Georgia (NBG).

Box 1: Capital Adequacy Regulatory Requirements in Georgia

The National Bank of Georgia (NBG)'s capital adequacy standards mandate for higher quality core capital, and the ratios are more conservative than the relevant BIS (Basel I) requirements. NBG risk weights assets for currency induced credit risk. In addition, this risk weight has been changing over time for supervisory policy purposes. In line with countercyclical prudential policy, during the recession, NBG lowered the abovementioned risk weights from 100% down to 50% percent. The required risk weight for foreign currency induced credit risk went up to 75% from January 2011. Additionally, the regulation does not permit lower risk weighting for mortgages or the inclusion of the revaluation reserves of a bank's own premises in the calculation of regulatory capital. All of the above effectively raises the prudentially mandated ratio well above the corresponding BIS (Basel I) requirement.

Although conservative capital adequacy ratios raise the regulator's comfort and improve resilience of the system, they come at a cost. High capital levels are additional costs for commercial banks that are accounted in their pricing models. The current capital requirement framework is not well matched with the risks of commercial banks and it is more likely that despite the large difference in their risk appetites, they might be required to hold the same levels of capital.

Currently, NBG is implementing Basel II/III capital adequacy framework which is more adjusted to the individual risk profile of commercial banks. It is supposed to ensure relatively high levels of capital for riskier banks, as well as capital relief and the opportunity of achieving efficiency in costs for the banks with lower risk-taking appetite. The main changes that commercial banks will face could be summarized as follows:

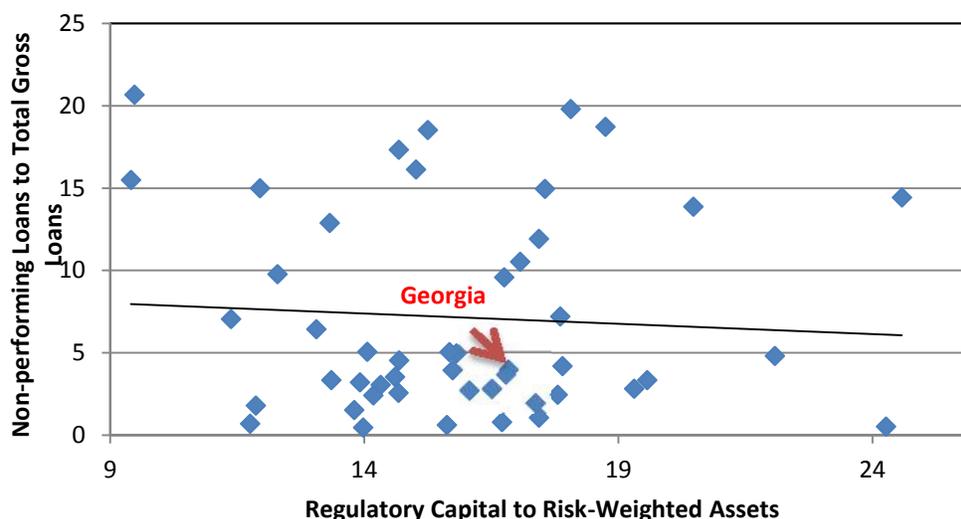
- The definition of regulatory capital components will change. If up until the present only the accounting name was the major factor in the decision to include a capital instrument in the regulatory capital, now it will have to meet certain criteria to qualify as being eligible;
- Credit ratings are to be used for risk-weighting purposes;
- Exposures secured on residential mortgages and retail are to be risk weighted at 35% and 75%, respectively, which represent significant capital relief for the banks;
- Banks should hold capital for operational risks;
- Banks will be able to decrease capital charge, provided that eligible mitigation techniques are in place;
- Banks should hold economic capital and should have internal capital adequacy assessment process in place to account for all major additional risks that have not been considered under Pillar 1 requirements; and,
- Banks would have to disclose their main risks and risk governance practices.

3.5 Asset Quality of the Banking Sector

Loans comprise up to 60% of the Georgian banking sector's total assets, followed by claims on commercial banks (up to 20%) and fixed assets (up to 7%). Other types of assets account for the remainder. As a result, the asset quality of the Georgian banks is primarily determined by the quality of loans. Georgia performs impressively in asset quality, as demonstrated by the relevant FSI indicators (Non-performing Loans Net of Provisions to Capital; Non-performing Loans to Total Gross Loans).

Non-performing loans to total gross loans ratio is equal to 4% (Figure 15) and Non-performing Loans Net of Provisions to Capital ratio is 5.7% (Figure 11). Given the asset quality, Georgian banks hold relatively high levels of capital as compared to the overall trend. This implies high buffers that can absorb losses from non-performing loans.

Figure 15: Non-performing Loans to Total Gross Loans



Source: National Bank of Georgia (NBG).

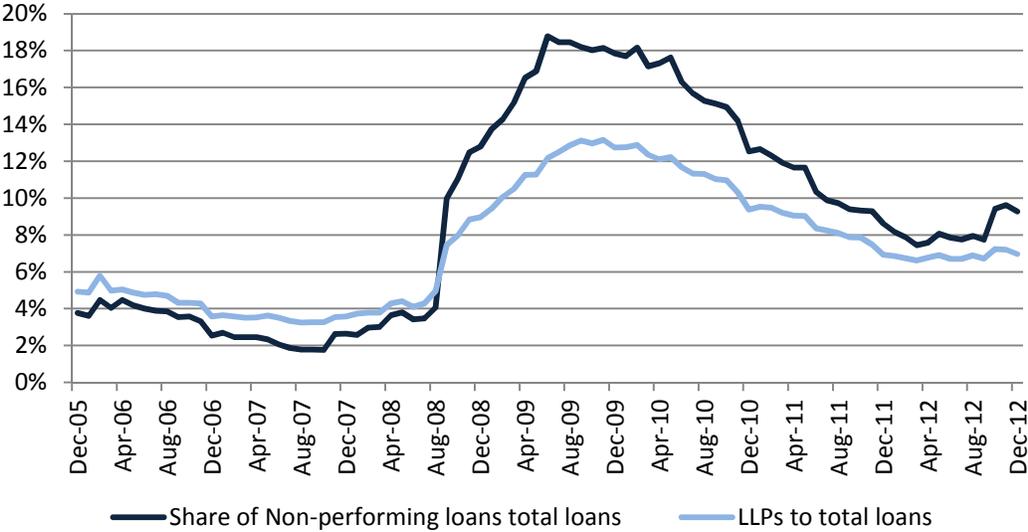
The non-performance criteria to calculate the abovementioned FSI indicators are based on the 90 days past due criterion. It should be noted that it may not be adequate to use such a unified criterion across countries. In some economies, delinquency of even a few days might imply that a client can no longer service the debt, while in others, even 90 days past due loans might have a high chance of performance.

Besides, the growth and economic cycles have an important influence on those ratios. During aggressive growth and boom periods, banks usually have a positive outlook on borrower performance, and the ratios are further improved due to the increased portion of the new performing loans. Throughout the distress times, however, the trend is reversed.

Rather than using a simple 90 days overdue criterion to qualify loans as non-performing, the Georgian legislation relies on a different approach. Non-performing loans are determined based on the regulation on “Asset classification and the creation and use of reserves for losses by commercial banks”¹³. According to the regulation, loans are classified into 5 categories: standard, watch, substandard, doubtful, and loss.

Two percent (2%) of general provisions are created upon the origination of the loan. Specific provisions (10%, 30% and 50%) are created respectively on loans in different classes. Loss loans are written off the balance. Non-performing loans are those belonging to substandard, doubtful and loss categories. It should be noted that the provisioning rules of NBG are much more conservative than the ones based on the IMF guidance.¹⁴ In light of this, it is worthwhile looking at the share of non-performing loans that are calculated based on the local accounting rules. Arguably, such rules may better reflect the true asset quality. From Figure 16, one may observe that according to the more stringent local accounting standards, non-performing loans comprise up to 10% of the total loans and loan loss reserves are around 7%.

Figure 16: Asset Quality Dynamics



Source: National Bank of Georgia.

¹³http://www.nbg.ge/uploads/legalacts/supervision/nbg1.4.5.1regulation_on_assetseng.pdf
¹⁴ Under the existing regulation, loan classification is based on (1) days in arrears; (2) the financial strength of a borrower; and (3) collateral. According to the prudential guidelines on assets classification, days in arrears is one of the most important indicators in terms of classification, but such delay in payment should not represent the sole or principal reason for this type of classification. This implies that even if the loan is not past due, it might not be classified as a standard loan if the current cash flows, or the expected cash flows, are not sufficient to satisfy all liabilities. In fact, plausible market and macroeconomic conditions are also taken into account and the loan can qualify for “Standard” category only if the borrower is able to absorb particular market/macro-economic shocks, and meet its obligations against the bank in the future.

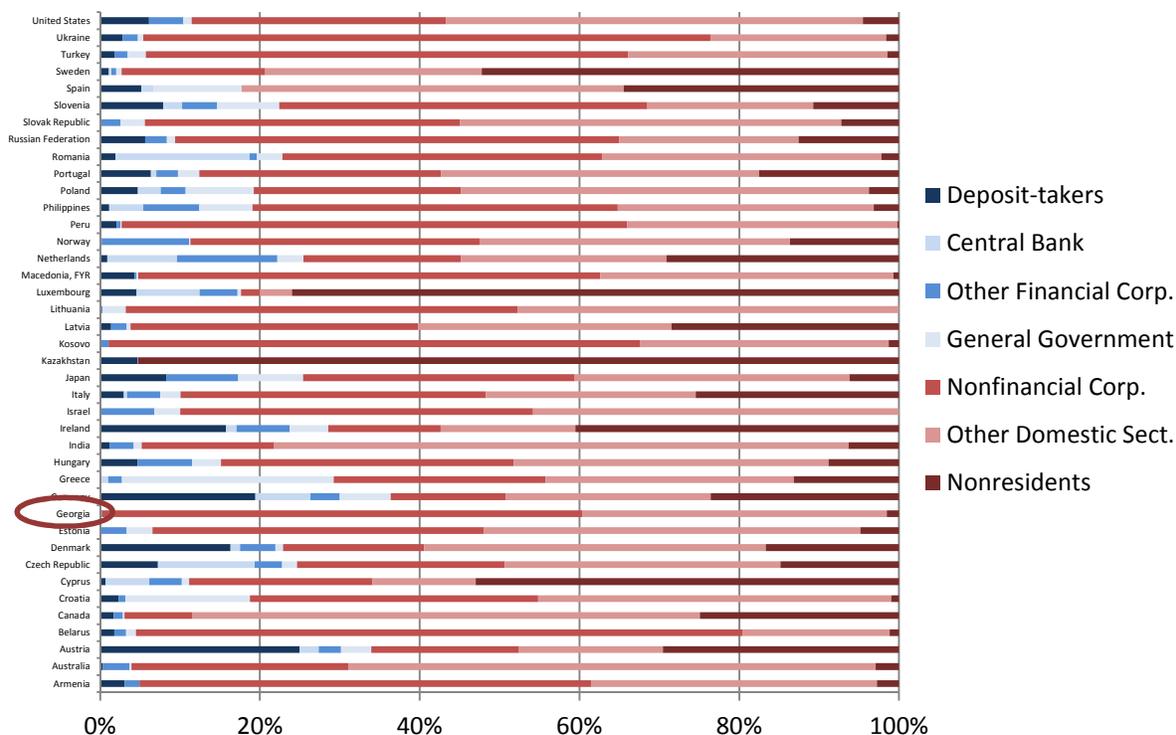
In the same time, even though Georgia outperforms many of its peers (such as Ukraine, Slovenia, Romania, Moldova, Macedonia, Latvia, Lithuania, Kosovo, Kazakhstan, Croatia, Cyprus, Bulgaria) based on the 90-day criterion, its non-performing loans to total loans ratio is still far greater than that of the developed economies (such as Australia, Austria, Canada, Japan, Korea, Netherlands, United States and others).

For commercial banks, the quality of assets is highly dependent on various external factors, macroeconomic, as well as infrastructure-related factors. High asset quality is usually achieved through diversified investments and the large base of financially strong households and firms. In addition, the banks' ability to assess the soundness and creditworthiness of borrowers through credit reference agencies and through available financials, plays an important role in the determination of the asset quality. Such preconditions are highly relevant for developed economies, and Georgia has a significant room for improvement in these areas.

As can be seen from the FSIs on the sectoral distribution of loans (Figure 17), the Georgian banks' exposures are mostly to resident persons. Share of non-resident lending is relatively higher in more developed economies such as Canada, Denmark, Germany, Sweden, as well as in some developing economies. In practice, non-resident lending contributes to the diversification of assets in terms of their risks. It also contributes to the diversification and expansion of revenue generation sources.

Georgia's low share of non-resident lending on the one hand could be explained by high interest rates stemming from high funding costs. In a rather longer term the option of non-resident lending could be a source of growth potential for commercial banks. Georgian banks have no major exposures to government or financial sector enterprises. Government loans are considered to be exhibiting low risks and they are considered to be a stable source of revenue for commercial banks in the developed economies. Non-resident loans in Georgia are 1.5% of the total loans, out of which 0.6% is to advanced economies and the rest (0.9%) is to emerging economies.

Figure 17: Sectoral Distribution of Loans to Total Loans (latest available data)



Source: IMF Financial Soundness Indicators.

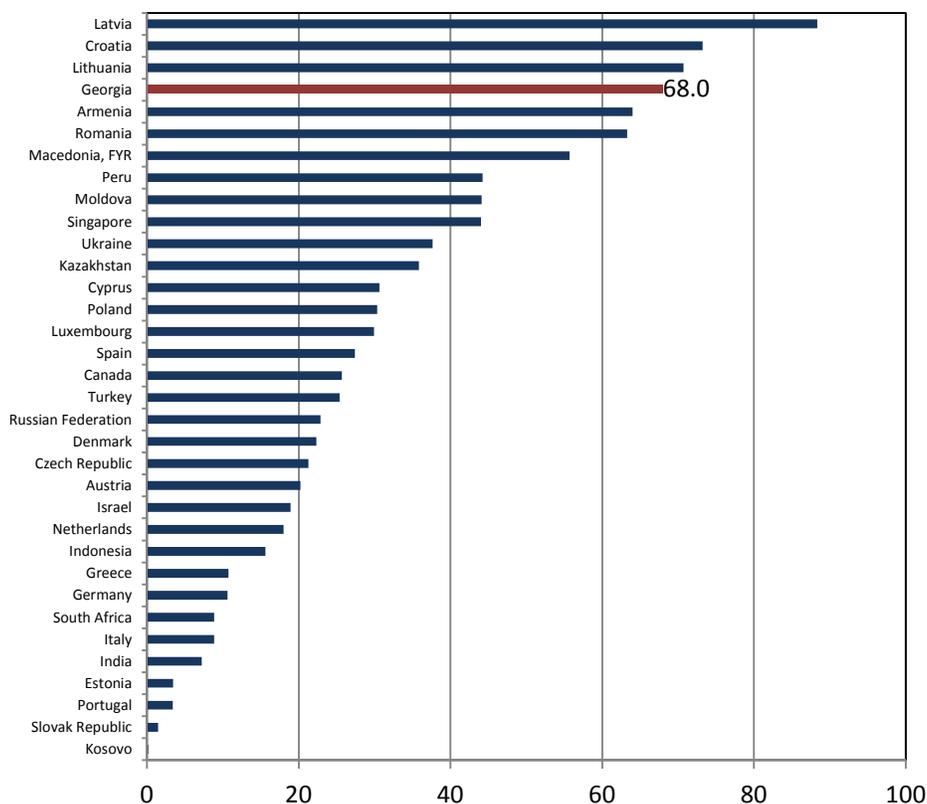
Asset quality of Georgian banks depends to an important extent on exchange rate fluctuations. As shown in Figure 18 below, 68% of total loans are denominated in foreign currency while the commercial banks' borrowers are mainly residents, generating income in the national currency. As a result, borrowers' repayment capabilities depend on the stability of the exchange rate. Thus, domestic borrowers, with the exception of exporter industries and industries with non-elastic demand structures, are vulnerable to local currency depreciation.

The problem stems from the fact that the Georgian banking system relies primarily on external funding, which is 100% foreign-exchange-denominated. Trust in the local currency among the population appears to be an additional constraint since a significant portion of local savings is effectively denominated in foreign exchange.

Despite the fact that the GEL exchange rate has been quite stable since its introduction, minor currency shocks and political instability have prevented the creation of trust among savers. The absence of developed financial products (such as foreign currency swaps and forwards) to hedge currency risk prevents banks from managing currency transformation. As a result, the dollarization on the liability side leads to the dollarization on the asset side for the banks. The banks attempt to decrease their currency risk exposure by lending in foreign currency, yet at the same time shift

the currency risk to borrowers, making themselves vulnerable to the foreign-currency-induced credit risk.

Figure 18: Foreign Currency Denominated Loans to Total Loans, as of 2012 Q3



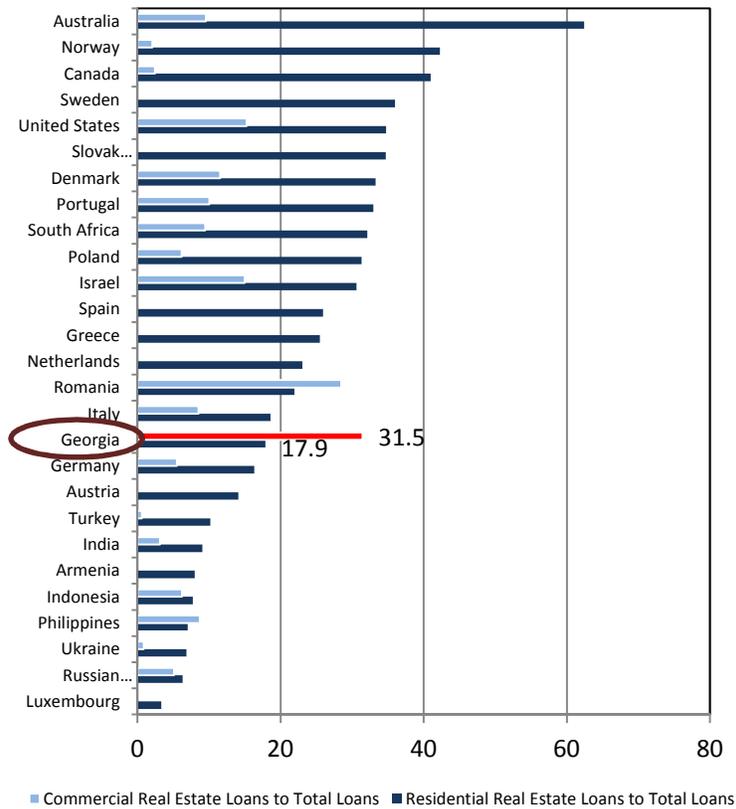
Source: IMF Financial Soundness Indicators.

In addition to the problems described above, commercial banks in Georgia are vulnerable to adverse developments in real estate markets. This is evidenced by the loan concentration on residential and commercial real estate markets. In general, residential real estate loans comprise an important portion of loan portfolios in developed countries. Based on the evidence presented in Figure 19, Georgia has significant room for development in this type of lending market. Currently, residential real estate loans comprise only 17.9% of the total loans. This makes the banks less vulnerable towards adverse developments on the residential real estate market.

However, Georgia has a substantially high proportion (31.5%) of loans secured on commercial real estate. This implies that recoverability of the non-performing loans depends to a great extent on the stability of the commercial real estate sector.

Historical and current real estate price trend analyses could shed light on the extent of banking sector vulnerability to the real estate market fluctuations. Unfortunately, such FSIs are currently unavailable.

Figure 19: Real Estate Markets

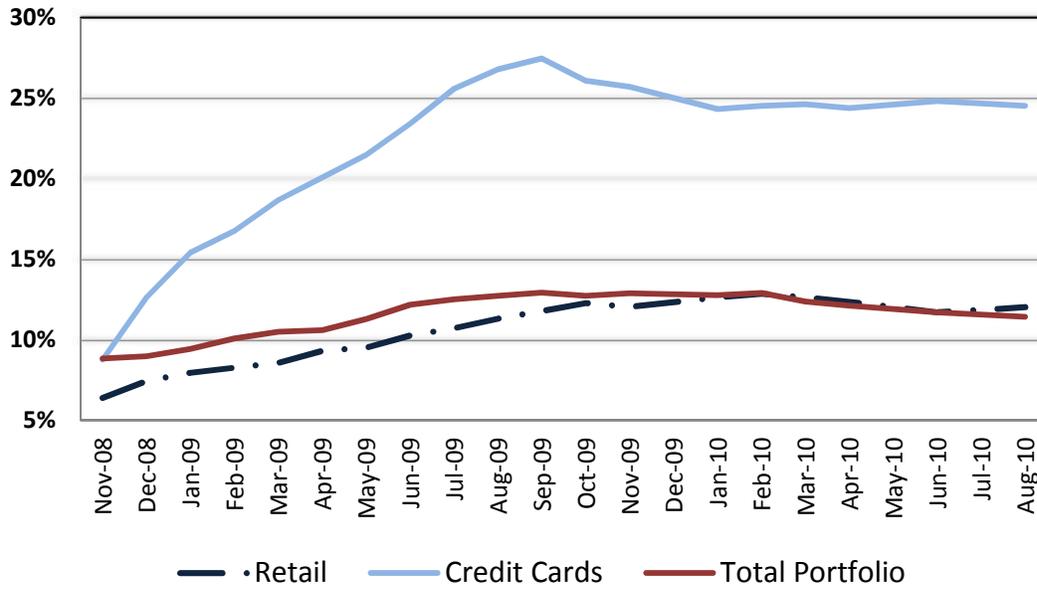


Source: IMF Financial Soundness Indicators.

Finally, low financial literacy and lack of transparency in financial products contribute to the low financial market penetration and asset quality. As per NBG’s 2010 presentation, during the financial crisis, the highest deterioration of asset quality was seen in credit cards, which were among the least transparent financial products at the time (Figure 20). Low financial literacy is further evidenced by the low reliance on internet banking services, which tends to drive up the costs for commercial banks.

Box 2 presents the results of the financial literacy survey performed by the International School of Economics at Tbilisi State University –Policy Institute (ISET-PI) and discusses the implications for the banking sector.

Figure 20: Credit Portfolio LLP Dynamics

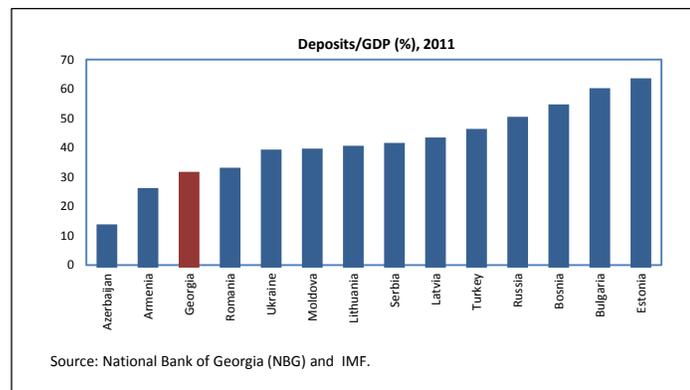


Source: National Bank of Georgia.

Box 2: Financial Literacy in Georgia

“EVERYBODY wants it. Nobody understands it. Money is the great taboo. People just won’t talk about it. And that is what leads you to subprime. Take the greed and the financial misrepresentation out of it, and the root of this crisis is massive levels of financial illiteracy.”

John Bryant



Does Georgia have a well-developed financial sector? Certainly, proliferation of bank branches and automated teller machines in the capital city of Tbilisi might suggest that it does. And yet, the data indicate that for a country of its size, Georgia has a relatively small financial sector. One of the measures used to approximate financial development or financial depth of the economy is the deposits to GDP ratio. According to the IMF data, this ratio in Georgia is equal to 30.8% in 2011— one of the lowest indicators among the economies at similar stages of development. What might be the reasons behind the low levels of financial development? Here I will focus on just one aspect and a possible determinant of the financial depth – financial literacy.

Financial literacy means financial awareness and knowledge. Not only the knowledge of financial products, institutions, and concepts, but also financial skills, such as the ability to calculate compound interest payments; and more generally financial capability in terms of money management and financial planning. This type of knowledge can create faith in financial institutions and thus increase financial activity, lending support to economic growth and development.

In addition, low levels of literacy in the use of computer technology affect financial awareness and imply high costs to commercial banks. This is because they affect the use of various banking services, in particular internet banking. The heavy reliance on the traditional ways to conduct transaction with banks contributes to the high cost of financing which can also drive the interest rate up.

Financial literacy programs are fast becoming a key ingredient in financial policy reform worldwide. How is financial literacy measured? Usually via surveys which ask questions about compounded interest, real interest rate, and risk diversification. The International School of Economics at Tbilisi State University Policy Institute (ISET-PI) conducted the financial literacy survey on March 2013 using an internationally established methodology. The table below presents the proportion of correct answers to the survey questions in Georgia, including the comparison set of benchmark countries.

Box 2: Financial Literacy in Georgia *continued*

Country (Year of Survey)	Q1. Compounded Interest	Q2. Inflation	Q3. Risk Diversification
High Income			
United States (2009)	65%	64%	52%
Italy (2006)	40%	60%	45%
Germany (2009)	82%	78%	62%
Sweden (2010)	35%	60%	68%
Japan (2010)	71%	59%	40%
New Zealand (2009)	86%	81%	27%
Netherlands (2010)	85%	77%	52%
Upper-middle-income			
Russia (2009)	36%	51%	13%
Romania (2010)	24%	43%	--
Azerbaijan (2009)	46%	46%	--
Chile (2006)	2%	26%	46%
Lower-middle-income			
Georgia (2013)	71%	46%	19%
Indonesia (2007)	78%	61%	28%
India (2006)	59%	25%	31%
West Bank & Gaza (2011)	51%	64%	--

Source: country level data

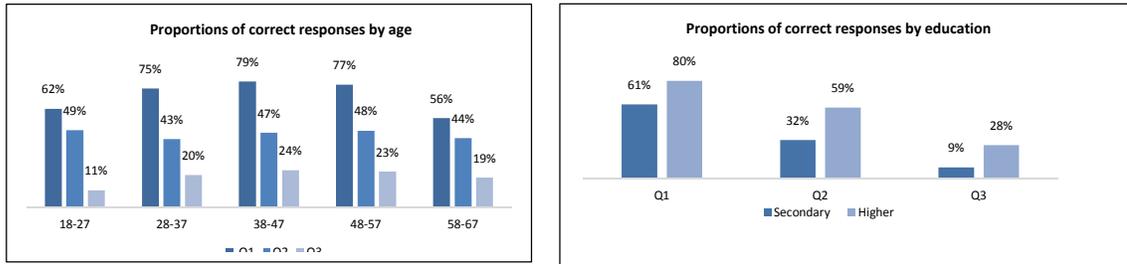
The comparable surveys find that financial literacy is low everywhere, though still lower in the low-income countries. ISET-PI found that 71% of respondents in Georgia correctly answered the question about the interest rate and money accumulation. Less than half (46%) can understand how inflation affects the return on deposits with fixed nominal interest rate.

In response to the third question, Georgia exhibits the lowest correct answer response rate among the lower-middle income countries. The question asked the respondents was whether they knew about the risk differences between bonds and non-bond financial assets (such as stocks). Yet the low correct response rate is to be expected in a country where the stock exchange market is undeveloped.

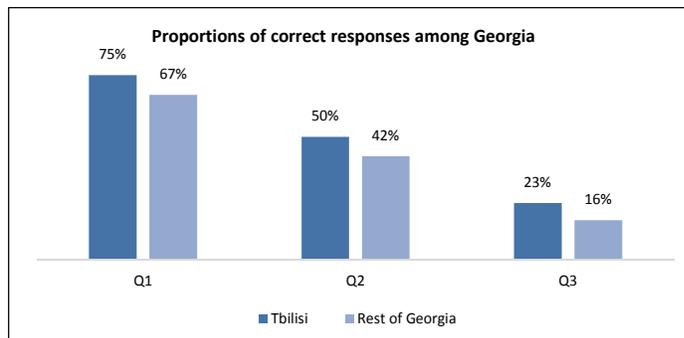
The cross-country surveys found that the quality of responses vary demographically. Women have lower levels of financial literacy almost everywhere. In Georgia, the share of correct answers for women is less than that for men. Moreover, women are more likely to say that they don't know the answer. The gender gap in financial literacy is of particular concern, as women are also more likely than men to become economically vulnerable due to longer life spans, shorter work experiences, and other economic and social factors.

Box 2: Financial Literacy in Georgia *continued*

The Georgian survey finds that financial literacy is higher for adults in the middle of the life cycle and tends to be lower among younger and older people. Thus the financial literacy follows an inverted-U shape with respect to age. This illustrates the effect of knowledge accumulation over time, which tends to decay as people age.



Generally, people with lower educational attainment are less likely to answer questions correctly. The difference is very pronounced in Georgia. Also, respondents with secondary education are more likely to report the "do not know" option.



The final demographic characteristic of the survey is regional distribution of the correct answers. The country surveys indicate strong regional disparities in financial literacy, particularly between the capital city and other areas of the country. This likely mirrors the differences in access to finance, and the differences are especially prominent in the developing countries. However, in Georgia, the regional disparities seem to be less pronounced. This is likely due to the fact that education levels of the overall population are still comparable across different regions in Georgia.

The Georgia survey found that out of 161 respondents, only 18% made a savings deposit in a bank during the last 12 months. Among the "bank savers", 76% have higher education, while the rest only completed secondary education. The result is hardly surprising, considering a positive correlation between incomes and the level of education. Among the respondents who did deposit money in the bank in the last 12 months, 83%, 69%, and 31% correctly answered Q1, Q2, and Q3, respectively. This can be interpreted as the initial evidence for the relationship between financial literacy and the likelihood of saving in financial institutions. However, more research needs to be done to control for other factors that may influence both the financial literacy and the likelihood of bank savings.

Box 2: Financial Literacy in Georgia *continued*

In addition, 54% of Georgian respondents reported taking out loans during the last 12 months. Among the borrowers, the correct response rates were 69%, 44%, and 13% for Q1, Q2, and Q3, respectively (the correct response rates being lower than for deposit makers). This can again reflect the fact that people in need of loans have lower incomes and possibly lower levels of education.

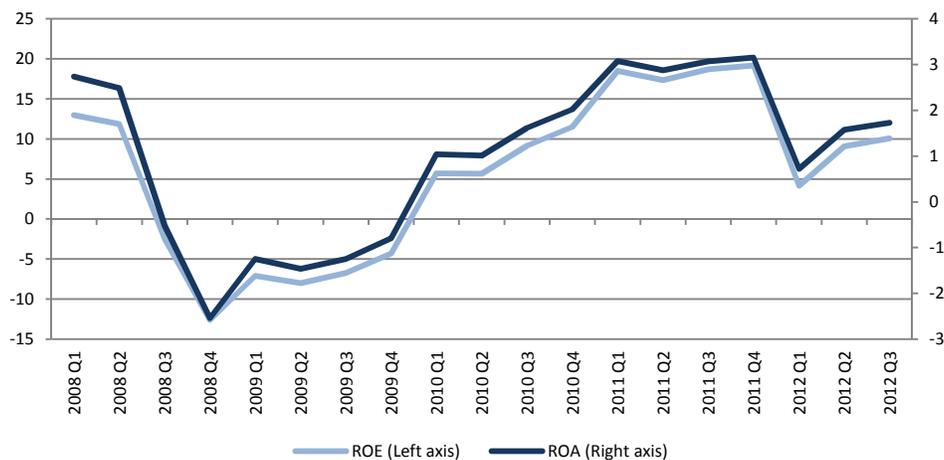
The result, however, gives a reason for concern, as the low levels of financial literacy are generally associated with higher credit risk. This is further evidenced by the US experience, where the financial crisis of 2008 has been blamed in part on low levels of financial literacy, especially among households who defaulted on their mortgages.

In light of this evidence, it may not be too early to start a discussion on the need to promote financial awareness among the general population in Georgia. This is especially since a possible side benefit of such education could be a stronger, healthier, more efficient financial system.

3.6 Profitability

Profitability and efficiency of the Georgian banking sector is expressed in terms of the two core FSIs: return on equity and return on assets. As shown in Figure 21, apart from crisis times, the banking sector in Georgia exhibits quite competitive profitability ratios as compared to average worldwide standards. Average ratios for the compilation period are equal to 1.01 and 5.93, respectively.

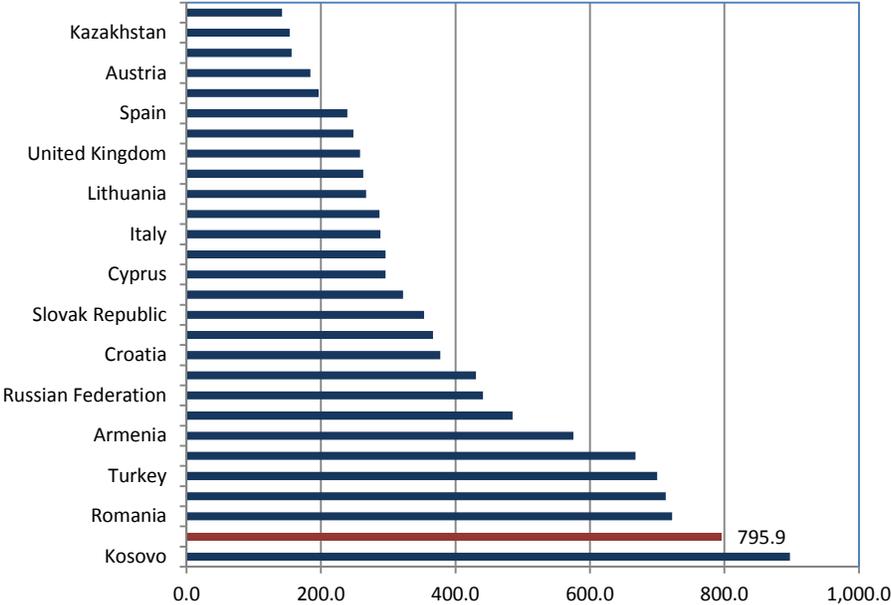
Figure 21: Return on Assets and Return on Equity



Source: IMF Financial Soundness Indicators.

Average Interest Margin to Gross Income and Non-interest Expenses to Gross Income for the compilation period are equal to 65% and 59%, respectively, which is close to the world average standards. However, Georgia has significantly higher interest rate spreads as compared to its peers. The spread between reference lending and deposit rates is equal to 795.9 basis points (Figure 22).

Figure 22: Spread Between Reference Lending and Deposit Rates (Basis Points), as of 2012 Q3



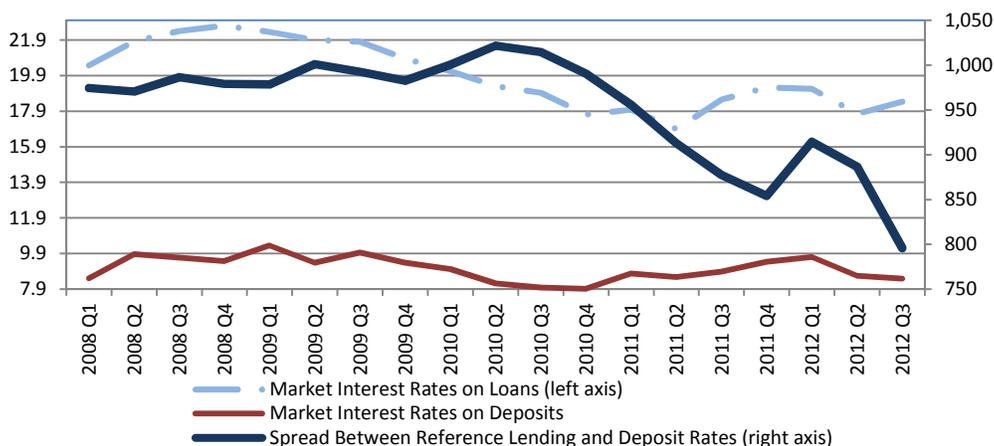
Source: IMF Financial Soundness Indicators.

One could cite different reasons for the high interest rate spreads in Georgia. The first explanation that comes to mind is the lack of competition in the banking sector. The industry concentration indicators seem to support this view. However, a highly concentrated banking sector does not automatically imply lack of competitiveness, especially in the presence of low barriers to entry into the financial market. While the concentration in the industry could be justified by the returns to scale argument, the threat of entry would deter the non-competitive behavior among the few large players.

Looking at the dynamics of the spreads and the structure of competition among banks, one can conclude that the financial services market is fairly competitive. The interest rate spreads have exhibited significant downward trend in past years, possibly reflecting the increasing competition among commercial banks. Excessive representation of bank branches in Tbilisi and in the country’s regions in the vicinity of other banks is also indicative of the competitive market behavior. Moreover, the year of 2011, marked by the largest decline in spreads, also saw large decreases in lending interest rates, as commercial banks attempted to compete for clients.

The high interest rate spreads could also be explained by the lack of efficiency in the financial market. The small size of the Georgian economy coupled with the small banking sector size prevent local banks from achieving economies of scale and thus increase the cost of lending.

Figure 23: Spread and Market Interest Rate Trends

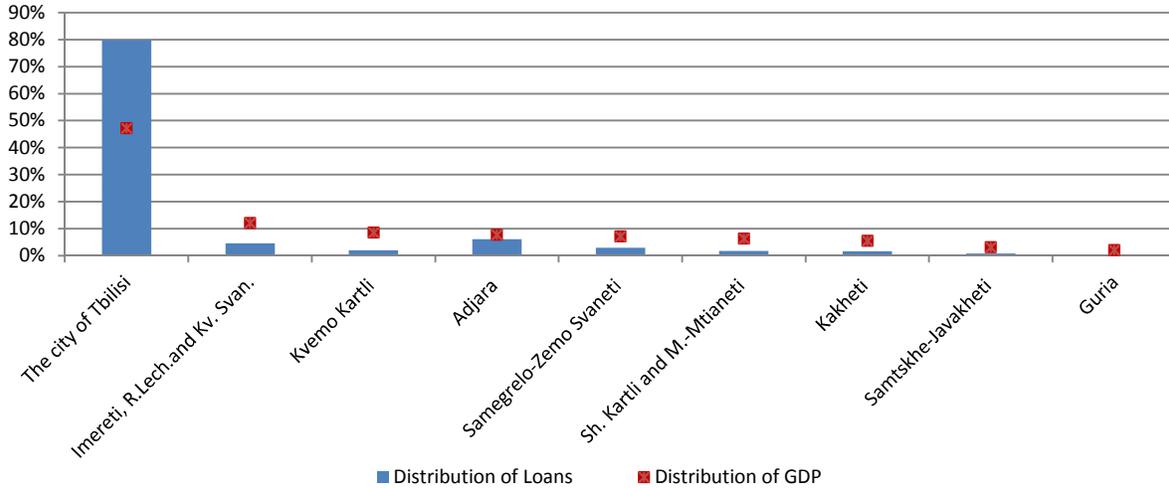


Source: IMF Financial Soundness Indicators.

As discussed earlier, diversification could be an important source of achieving the economies of scale in the Georgian banking sector. Geographical and sector diversification could lead to a virtuous cycle of lower lending rates, decreased interest rates spreads, and further increase in the demand for loans.

Currently, banks' regional and sector diversification is very low (Figure 24). For example, the gross lending to the capital city, Tbilisi, comprised 80% of the total loan portfolio in 2011, while the gross value added of Tbilisi constituted only 47% of GDP in the same year.

Figure 24: Distribution of Commercial Bank Loans and GDP by Regions, 2011

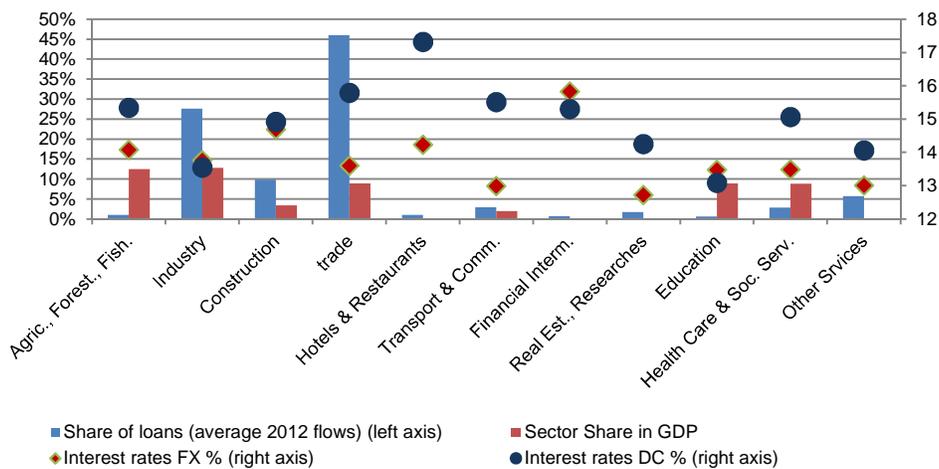


Source: National Bank of Georgia (NBG) and National Statistics Office of Georgia (Geostat).

The sector gap between the bank lending allocation and value added is also apparent. Commercial banks lend mainly to trade and service sectors, while the trade sector’s value added in GDP is only 10%. (Figure 25) The interest rates to other sectors remain high, explaining the lack of sector diversification in lending.

The domestic credit market seems to be caught up in the vicious cycle of low sector and geographic diversification, which translates into high credit risk for commercial banks. The increased riskiness feeds into high lending rates and perpetuates the low demand for bank financing from the underdeveloped industries. This, in turn, makes it even more difficult for banks to diversify. A possible solution to this problem would be to develop a policy mix that could stimulate and encourage the development of a well-diversified industrial base in the country.

Figure 25: Loans and Interest Rates by Sectors



Source: National Bank of Georgia (NBG) and National Statistics Office of Georgia (Geostat).

3.7 Liquidity and Market Risks

Georgian banks have comfortable levels of liquid asset ratio. The ratio of liquid assets to total assets is equal to 22% and liquid assets to short term liabilities ratio is 35% as of third quarter of 2012. The figures vary across countries to a great extent, and Georgia performs worse than many developed economies. However, this is largely due to the calculation methodology. Most of the countries include securities that are traded in liquid markets (including repo markets) in the definition of liquid assets, which is not the case in Georgia. It should be noted that Georgian banks' main funding is in foreign currency and currently amounts to 69% of total funding (Figure 26). Debt instruments and deposits, except for current accounts, are essentially denominated in foreign currency. The asset/liability structure is relatively well-matched according to the maturities (Figure 27). However, differences may exist between banks, and it would be important to analyze these indicators individually for each bank.

Figure 26: Liability Structure in Currency

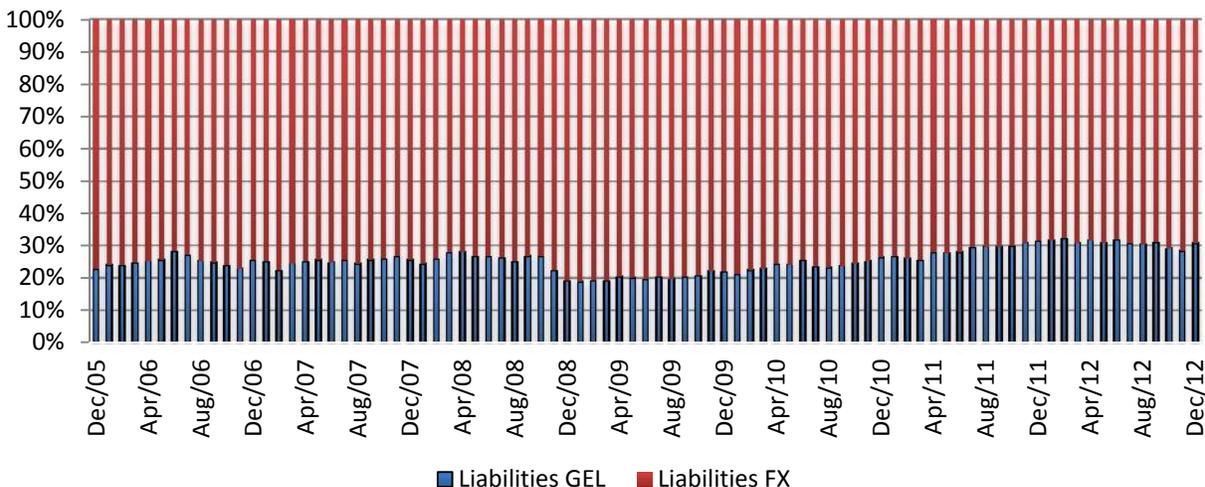
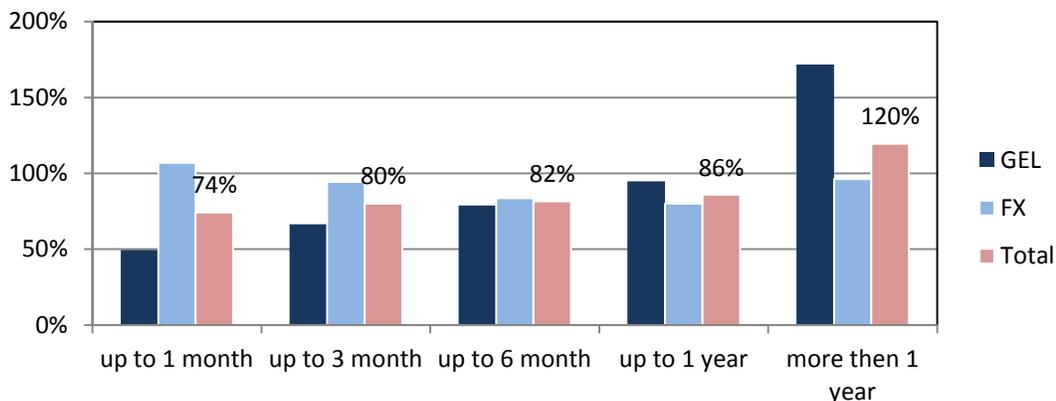


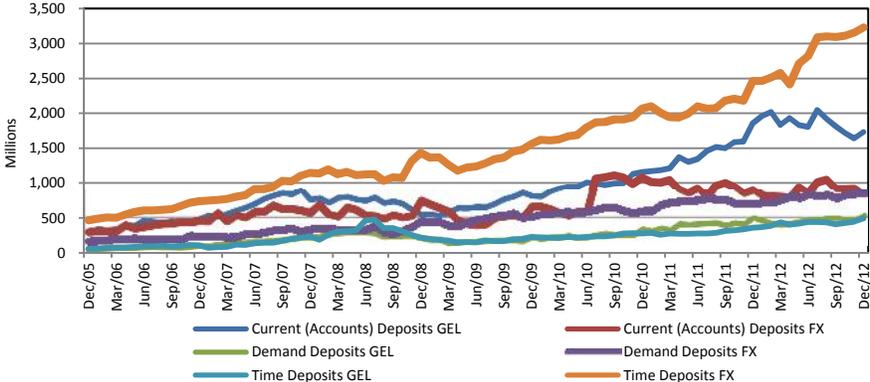
Figure 27: Cumulative Assets/Cumulative Liabilities



Source: National Bank of Georgia (NBG).

Potential risks from foreign funding are different for retail deposits and for the wholesale debt instruments. While borrowings and subordinated debt instruments expose banks to the risks of refinancing, retail deposits exhibit risks of potential bank runs. In particular, foreign deposits could have hot money character and might exhibit higher outflow risks. The issue is exacerbated by the fact that almost all term deposits can be demanded before the maturity date. However, looking at the dynamic of the retail deposits, no significant runs were observed even throughout the last shock period, which included both a war and an economic crisis (Figure 28).

Figure 28: Real Liability Trends



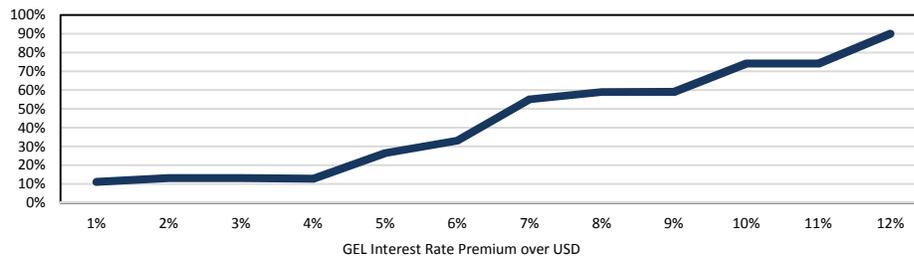
Source: National Bank of Georgia.

Dollarization on the liability side is in part driven by the attitudes of the depositors. The survey performed by “Mobilization of Savings and Financial Capability“ shows that a mere 10% of respondents would be willing to switch their savings to GEL before the premium reaches 400 basis points (bps) (Figure 29). Banks, on the other hand, are not willing to pay such large premiums on GEL deposits, as cost incentives alone do not allow for higher premiums on GEL.

Creating trust towards the local currency deposits would be an alternative way to deal with liability dollarization. However, the creation of trust is a slow process, and may demand decades of stability. Tough policy measures to force the public to save in GEL are not considered as options, since they are likely to produce numerous adverse effects, and may in fact work to the contrary of the intended policy goal.

The analysis suggests that neither monetary, nor regulatory incentives, nor trust creation, are expected to result in a significant de-dollarization and creation of long-term GEL funding in the desired (short) term. Hence, the policy interventions that might be more effective would directly target the root of the dollarization problem--solving market failure caused by the misalignment of market expectations and actual monetary policy.

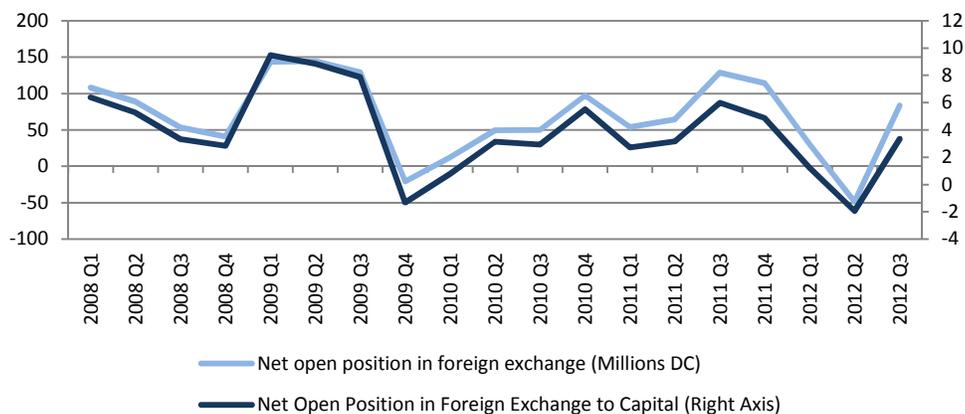
Figure 29: Share of Respondents Willing to Switch



Source: Mobilization of Savings and Financial Capability Survey.

In conclusion, one may say that the major market risk for Georgian banks stems from its heavy foreign exchange position. As long as Georgian banks focus on core banking activities and basically have no trading book, sensitivity to market risk is rather low. However, the amount of foreign exchange relative to regulatory capital is yet to be maintained at a moderate level (Figure 30).

Figure 30: Open FX Position



Source: IMF Financial Soundness Indicators.

4 Growth and Development Perspective

As outlined earlier in the report, Georgian banking sector growth prospects crucially depend on the overall health and development of the Georgian economy. Low levels of capital investment and high cost of finance have been identified as major impediments to economic development of the country. Numerous surveys, including business climate surveys done by the European Bank for Reconstruction and Development (EBRD) and the World Bank Group, document access to finance as one of the most important obstacles to doing business in Georgia (BEEPS 2008, BEEPS 2012-2013). The results of the in-depth interviews with large private firms and commercial banks performed within the framework of the present study largely support these findings (See Appendix 1: Georgia: Insights into the Investment Climate).

Yet, high cost of finance may not be the only or at least not the most important obstacle to growth. In order to identify priority areas for policy intervention, one must look beyond the traditional survey methods. The analysis below uses growth diagnostics to highlight the most important factors underlying the low investment rates and high cost of finance in Georgia.

4.1 Analyzing Constraints to Doing Business in Georgia: a Growth Diagnostics Approach

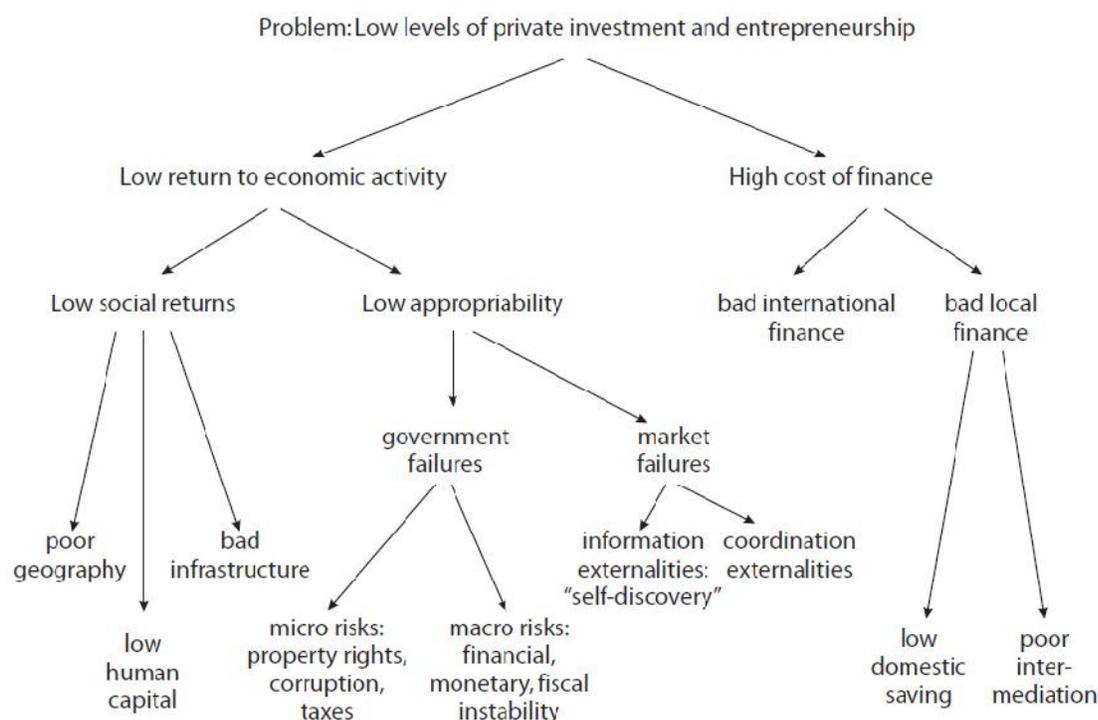
The main problem with using traditional survey methods to identify constraints is that typically their samples consist of firms that already actively operate in the market. Such businesses by definition would have overcome the most serious challenges and thus are not randomly sampled from the entire population of entrepreneurs in the country.

A methodological framework that allows to potentially circumvent the sample selection problem is the growth diagnostic approach proposed by Hausmann, Rodrik and Velasco (2008). Growth diagnostics has since gained popularity as an analytical tool for uncovering *binding constraints* to economic growth. The approach is attractive in that it is founded in economic theory while at the same time taking into account country-specific context.

In particular, growth diagnostics approach requires the analysis of a variety of potential constraints to investment and to identify the ones, which, if relaxed, would result in the most significant marginal impact on economic growth.

In a typical growth diagnostic study, researchers look at the nodes of a decision tree, like the one presented in Figure 31:

Figure 31: Decision Tree



Source: Rodrik, 2007

The tree nodes represent the hierarchy of growth constraints, starting from low levels of private investment. The low levels of investment may, in turn, be caused by either **low levels of economic activity** in the country, which can stem from low returns to economic activity or from the inability to appropriate the returns. Alternatively, low investment can be caused by **high cost of financing**. This can be due to firms' inability to access international credit markets (bad international finance) or the ineffective local financial system (high cost of funds due to low domestic savings, poor intermediation, or lack of competition in the banking sector).

While in principle, all of these factors may be constraining the activity of the firms, it is important that the policy makers identify and focus on the most binding constraints. For example, the policy makers may believe that high cost of finance is the most binding constraint to growth, and subsidize private credit. This particular policy would achieve little if the truly binding constraint to growth is in fact the low return on investment. In other words, fixing the problem with the supply of funds may be inefficient if the more severe problem is on the demand side.

Several practical techniques to identify binding constraints were proposed by Hausmann, Klinger and Wagner (2008). Binding constraints are typically associated with high shadow costs, and characterized by firm's observable efforts to overcome these constraints. For example, if labor quality is a binding constraint to growth, the firms should be willing to pay a significant wage premium to qualified workers in order to overcome this constraint.

Following the same logic, if the binding constraint is access to finance stemming from the problems on the supply side (e.g. difficulty securing international funds) rather than the problems

with the demand for financing, one should observe a **high interest rate offered on deposits coupled with high lending rates**. This would indicate that banks are competing to secure funding of potentially high-return projects. If, on the other hand, the problems are on the demand side (e.g. low return on investment), one would observe relatively **low lending rates combined with low deposit rates**.

4.2 Growth Diagnostics: Case of Georgia

The growth diagnostics approach has been used in the past to analyze the binding constraint on growth in Georgia. One such study was commissioned to the Georgian government by the Millennium Challenge Corporation (MCC), and released in 2011. The study relied extensively on the surveys of the existing firms and identified infrastructure development and low human capital as binding constraints.

A different independent study was published in 2012 by ISET Policy Institute (Babych and Fuenfzig 2012). Using data from 2000-2010, the study identified the uncertainty about property rights (broadly defined) as the most binding growth constraints.

Drawing upon the methodology and updating the results of Babych and Fuenfzig (2012), we present the analysis of *the financial market constraints* to growth in Georgia. The focus of the study is the cost of finance node analyzed as a potentially-binding constraint to economic growth.

4.3 Cost of Finance

Private investment can be constrained by the high cost of financing new projects, which is manifested primarily in **high lending rates and low domestic credit**. Both domestic and external factors can be responsible for financial bottlenecks. This section analyzes the state of Georgia's private credit market and the possible constraints.

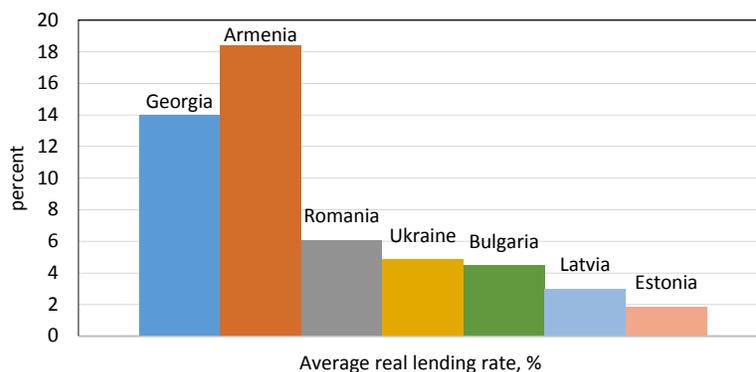
4.3.1 Georgia's Private Credit Market

4.3.1.1 Interest Rates and Bank Credit to the Private Sector

According to the most recent data from both the World Bank (World Development Indicator [WDI] database) and NBG, Georgia's real lending interest rates are quite high relative to other developing countries of Europe and Central Asia. In 2012 the real lending interest rate was 15.6%¹⁵. This is still lower than the corresponding figure for neighboring Armenia and Azerbaijan, but higher than in other transition countries in Eastern Europe. In 2012, Georgia's real lending rate was the 16th highest in the world (based on WDI, 2014), while the calculations based on the NBG data puts Georgia in the 11th place in the world. Figure 32 compares the average real interest rates among a group of transition countries in the period between 2000 -2012.

¹⁵ The real lending rate for Georgia is calculated as the nominal lending rate on total loans from the National Bank of Georgia (NBG) database, minus the inflation rate based on the GDP deflator World Development Indicator [WDI data]). The real lending rate for countries other than Georgia was directly taken from the WDI database. The rationale for not using WDI database for indicators involving lending and deposit rates for Georgia is the large discrepancy observed between different vintages of WDI data (this in particular concerns Georgia, but was not an issue for the group of comparison countries).

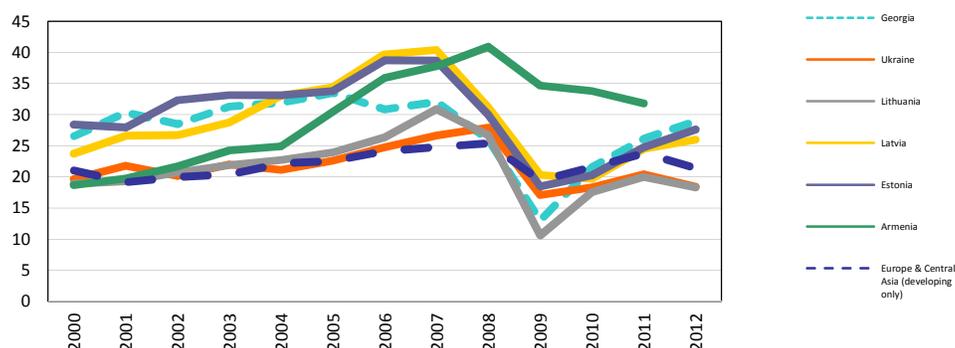
Figure 32: Average Real Lending Rates in Select Transition Economies, 2000-2012



Source: World Development Indicator (2014) and National Bank of Georgia.

The level of gross capital formation (investment) in Georgia was about 29% of GDP in 2012. While this number is on par with other developing countries in Europe and Central Asia (Figure 33), the level of investment does not necessarily reflect private sector activity.

Figure 33: Gross Capital Formation (% of GDP)



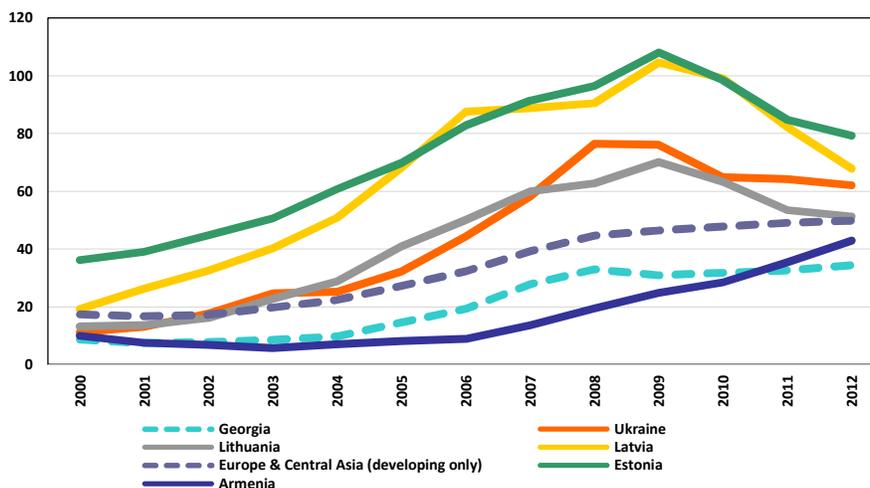
Source: World Development Indicator (2012).

Since the National Accounts of Georgia do not differentiate between private and public investment, one needs to look for different ways to gauge private investment activity. One piece of evidence can be found in the domestic credit to private sector data.

As can be noted from Figure 34¹⁶, the availability of domestic credit to the private sector in Georgia is below the regional average. Private sector credit has been increasing since 2003, but growth has slowed since the global crisis of 2008. On the contrary, the trend growth remained stagnant, even as the output growth recovered. In contrast, neighboring Armenia's private credit growth showed a positive trend despite high real lending rates in the aftermath of the global crisis.

¹⁶ The data is from WDI, the World Development Indicators database 2013 unless indicated otherwise.

Figure 34: Domestic Credit to Private Sector
(% of GDP)



Source: World Development Indicator (2012).

The lackluster growth of the private credit market is indicative of low private investment activity and problems related to high cost of finance. The problems can arise due to both external and internal factors. In the first case, inadequate access to international financing can increase the cost of credit for private banks and lead to high lending rates domestically. In the second case, a poorly developed domestic banking sector (i.e., lack of competition among banks, cost inefficiencies in the banking sector) can lead to both low domestic savings/investment levels and to high lending rates.

4.3.2 Local Finance and Cost of Credit: Insufficient Domestic Savings, Poor Financial Intermediation or Credit Risk?

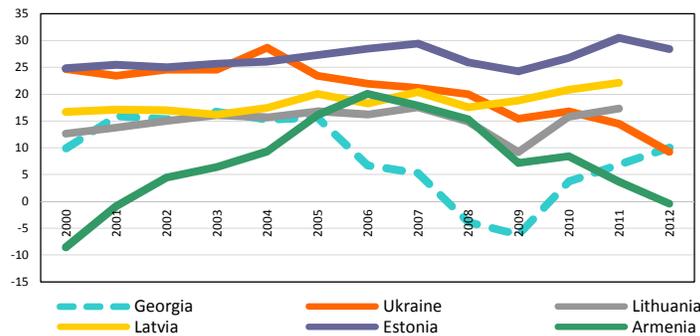
While trying to understand the main drivers behind low levels of private investment, it is useful to think in terms of a simple Marshallian demand and supply framework. The level of private investment in the economy and the cost of credit are jointly determined by the supply of savings and the demand for investment in the market. Thus, the combination of low levels of private investment and high lending rates would suggest that low **savings supply** is the most likely culprit behind the stagnating levels of private credit

4.3.2.1 Domestic Savings

Are Georgia's low domestic savings to blame for high cost of finance? According to the recent WDI data (Figure 35), this may indeed be the case. The country's share of domestic savings in GDP is on average quite low as compared to other transition economies.

In the meantime, Georgia's current account (CA) balance was declining sharply between 2004-2008 with the current account deficit in Georgia having reached -21.9% of GDP in 2008, and the deficit between 2009 and 2012 remained quite high, -11% of GDP on average (Figure 36). The maintenance of investment levels therefore necessitated heavy international borrowing.

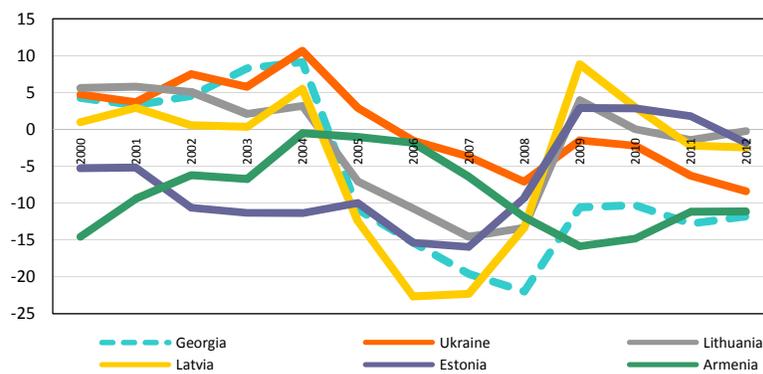
**Figure 35: Gross Domestic Savings
(% of GDP)**



Source: World Development Indicator (2012).

From the experience of other developing countries in the world, especially Brazil, Mexico, and Argentina, such high levels of CA deficit are not sustainable in the long run. To compare, the CA deficit of Mexico was 7% of GDP during the 1994 peso crisis.

**Figure 36: Current Account Balance
(% of GDP)**



Source: World Development Indicator, 2011 & 2013¹⁷

Clearly, **low domestic saving rates** in Georgia are a serious constraint to private investment growth. This finding is corroborated by the evidence in other sections of the present report. However, is low domestic savings a *binding constraint* to private investment growth?

If the lack of private savings were indeed a binding constraint to financing profitable investment projects, we would expect to observe relatively **high interest rate on deposits**. Logically, banks, facing shortage of domestic funds, would compete for private deposits to finance profitable private investment.

However, if high lending rates are coupled with relatively modest deposit rates, this would lead to a **high interest rate spread**.

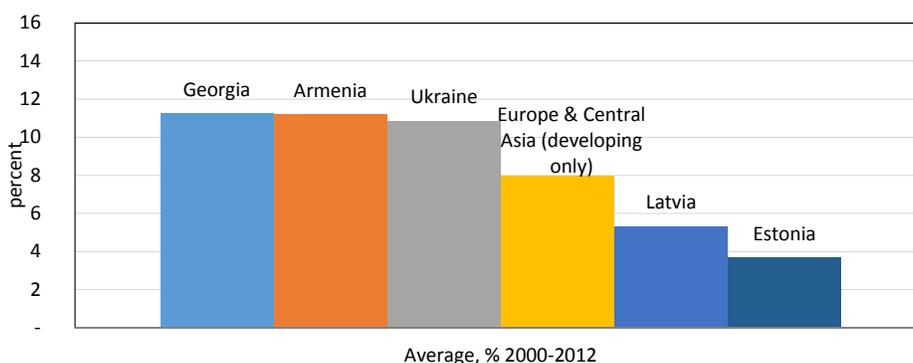
¹⁷ The data up to and including 2004 comes from WDI vintage of 2011.

A we can see from Figure 37, the spread between lending and deposit rates in Georgia is indeed among the highest in the region, and stands above the average for developing countries in Europe and Central Asia (Further analysis of Interest rate spread is given in Appendix 2).

This leads us to conclude that low savings rate, and shortage of domestic deposits **cannot be the only** explanation for high cost of loanable funds, and may not necessarily be binding constraints to growth in Georgia, at present.

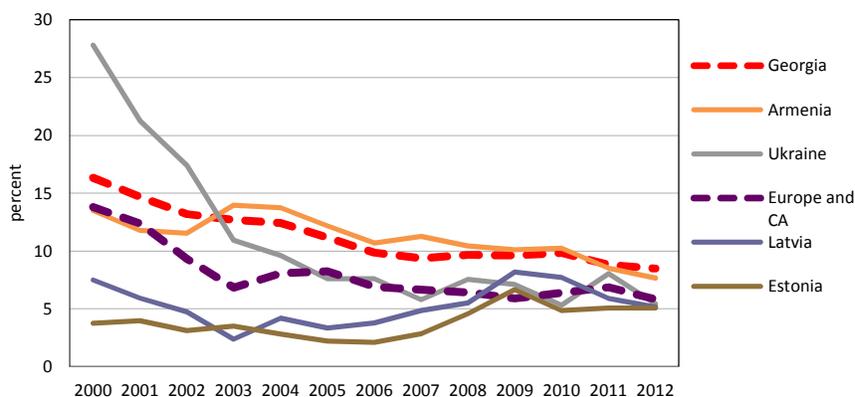
This conclusion, however, does not imply that low domestic savings are not problematic at all. The dynamics of interest rate spreads in Georgia in the recent years has shown some closing of the gap between lending and deposit rates (Figure 38). If the trend continues, this may indicate that the **problem of domestic savings supply will become more prominent** for the country's cost of finance.

Figure 37: Interest Rate Spread, 2000-2012 (%)



Note: Interest rate spread = Lending rate - deposit rate.
Source: World Development Indicator (2012).

Figure 38: Interest rate spread dynamics (%)



Note; Interest rate spread = Lending rate - deposit rate
Source: World Development Indicator (2012).

4.3.3 International Finance: Access to Borrowing from Abroad

Very frequently, developing countries' financial problems can be blamed on poor external credit market conditions – such as high world interest rates and/or inability of the country to borrow from the international financial markets. Typically, such problems go hand in hand with high external debt levels, high world interest rates, or adverse worldwide credit market conditions.

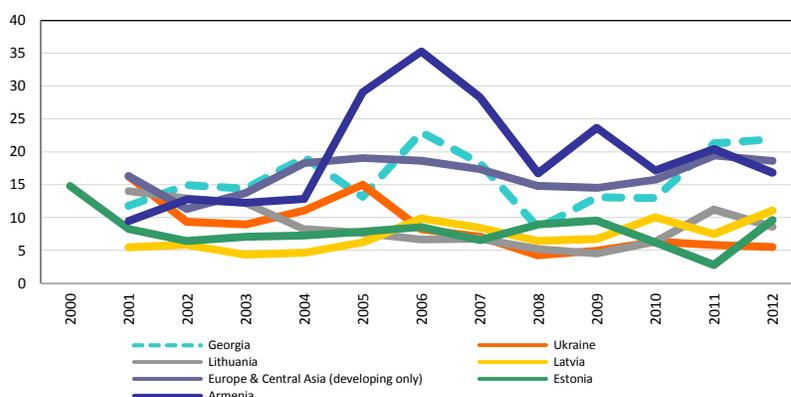
While the world credit markets have been impacted by the global credit crunch of 2008, the Georgian economy was not disproportionately impacted.

The rates of foreign direct investment remained high as compared to the regional average.

For example, the average foreign direct investment as a share of GDP was 9.7% in Georgia from 2003 to 2012, as compared to 5.15% average in developing Europe and Central Asia.

Bank capitalization rates and average liquidity ratios indicate that availability of funds is not constraining banks' lending (Figure 39).

Figure 39: Bank Liquid Reserves to Bank Assets Ratio (%)



Source: World Development Indicator (2012).

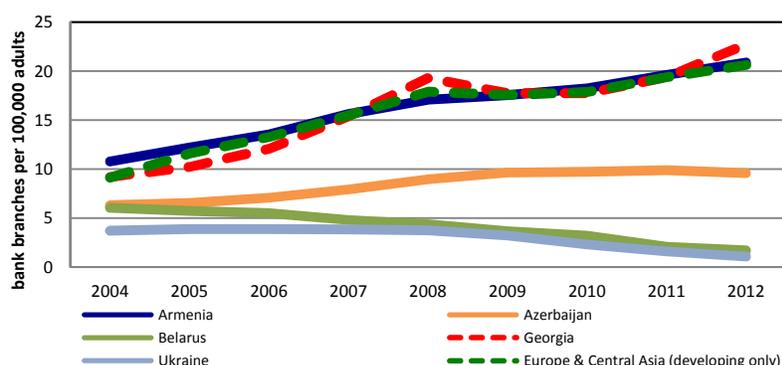
4.3.4 Poor Financial Intermediation

Problems with financial intermediation, such as lack of competition in the banking sector could lead to high cost of finance in the country. Is banking sector competitiveness a binding constraint to investment growth in Georgia? A cursory examination of the financial sector structure appears to lend some support to this hypothesis. After all, the banking sector in Georgia is highly concentrated. The commercial banking sector controls 95% of total assets in the country, and 82% of these assets are concentrated in the five largest commercial banks, with 37% and 26% of banking sector assets belong to the two largest banks. According to the existing research, banking sector concentration in Georgia increased between 2005 and 2008, but the concentration process halted in 2008 (Gabrichidze, 2010).

In theory, however, banking sector concentration does not necessarily imply lack of competitiveness. High concentration in a banking sector could be driven by the economies of scale and lead to higher competitiveness provided that markets remain open and contestable (in other words, if the barriers to entry into the financial market are low, the threat of competition would preclude non-competitive behavior on the part of large banks, (Claessens and Laeven, 2004).

As far as the Georgian banking sector is concerned, the barriers to entry are low. Moreover, circumstantial evidence points to competitive behavior among the Georgian banks. For example, the bank branch concentration per 100,000 adults is on par with the average in Eastern Europe and Central Asia developing countries (Figure 40), and recently has risen above the regional average; lending rates, although high, have been on the downward trajectory since 2009, and interest rate spread has been on the decline.

Figure 40: Bank Branches per 100,000 Adults, 2004-2012



Source: World Development Indicator (2014).

In addition, competitiveness can be measured by how responsive the banks' market share is to the changes in the marginal costs of operation. For example, the banking sector's competitiveness is considered higher if, on average, banks' market share tends to increase in response to lower marginal costs. The marginal cost elasticity of the market share is typically reflected in the so-called Boon indicator. In the case of Georgia, Gabrichidze (2010) finds that between 2005 and 2007 the Boon indicator has increased in absolute value (pointing towards higher banking sector competitiveness), despite the higher industry concentration.

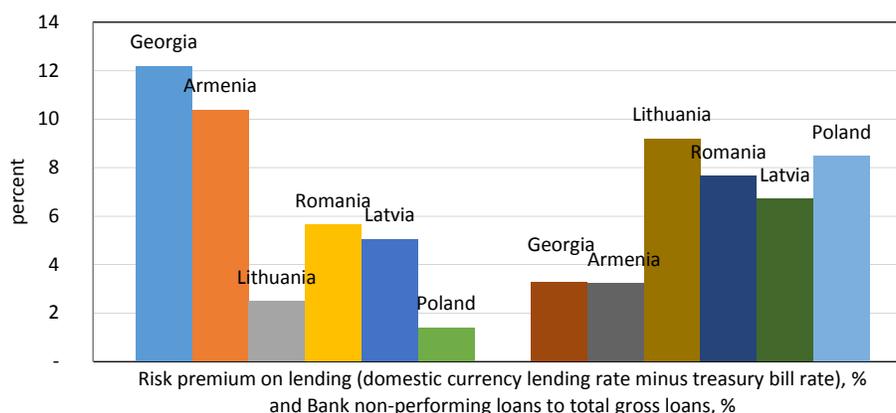
One may conclude that in Georgia, banking sector competitiveness is not the binding constraint, and competition in the banking industry is largely driven by a threat to entry.

4.3.5 Risk Perception and the Cost of Finance

Another explanation for low investment rates and high cost of finance can be banks' reluctance to finance private investment projects that are overly risky.

Figure 41 indeed shows that among the group of comparable countries, Georgia has one of the highest risk premiums¹⁸. The risk premium is defined as the difference between the prime lending rate and the short-term treasury-bill rate. Paradoxically, however, Georgia's share of non-performing loans in the total loans is among the lowest in the group.

Figure 41: Risk Premium and Non-performing Loans, 2004-2012



Source: World Development Indicator (2014).

Given the relatively high interest rate spread in Georgia coupled with a high risk premium on lending, one can conclude that the high cost of finance in Georgia over the past decade has been driven mainly by the perception of high credit risk of the private sector, rather than the lack of domestic financing. Thus, the perception of high credit risk may have emerged as the binding constraint to domestic private investment.

4.3.6 Perceived High Credit Risk: Potential Explanations

Credit risk perception on the part of private lenders can be a function of multiple factors. These factors can be classified into two broad categories: external (such as macro risks, stemming from fiscal and monetary policy stance, including but not limited to high budget deficit, high inflation, exchange rate risk, political risk, etc.) and internal (such as firm-level risks associated with low profitability, high default rates, or currency mismatch problems).

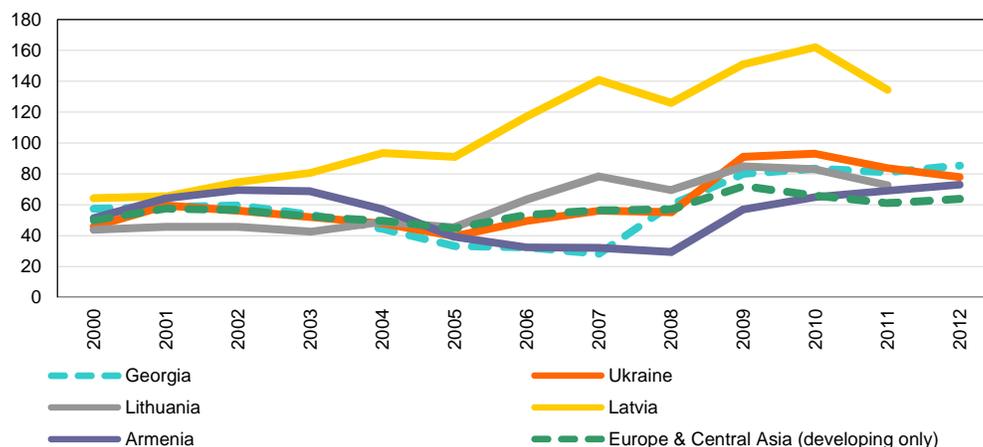
4.3.7 Macro-level Risks

In Georgia, the macro-level risks, such as budget deficit, high sovereign debt levels (debt overhang concerns), debt maturity structure and inflation rates have been greatly reduced in recent years. The stock of external debt as a share of GNI (Figure 42) has been quite high, but

¹⁸ Once again, due to the significant discrepancies between the vintages of WDI indicators, the data for Georgia's risk premium was based on the National Bank of Georgia data, and the statistics for non-performing loans based on FSI data. The risk premium was calculated as the domestic currency lending rate minus the treasury-bill rate.

still comparable to the levels of other Eastern European transition countries like Ukraine, Latvia and Lithuania.

Figure 42: External Debt Stock
(% of GNI)



Source: World Development Indicator (2014).

Moreover, the share of short-term debt in the total external debt stock has been quite low in Georgia – most recently 16% of GDP in 2012, as compared to around 20% of GDP in the group of European and Central Asian developing economies.

The share of government consumption in GDP for Georgia remains high as compared to other European and Central Asian developing countries. However, the share of government consumption came down significantly since 2008. In 2012, the rate of government consumption in Georgia stood at 17.7% of GDP (Figure 43), down from a high of 25.8% in 2008. European and Central Asian developing countries' average government consumption was about 14.7% of GDP in 2012.

Inflation rates have been stable and averaged 7.2% since 2004. The deflation periods were noted in 2009 and 2013.

Real effective exchange rate, the real price of local currency in terms of a basket of foreign currencies, was increasing since 2003, then slowed down slightly in 2008-2010, only to resume an upward trajectory (Figure 44). Overvaluation of domestic currency can present a serious problem for export-oriented firms, making it difficult to compete in the external markets and obtain financing.

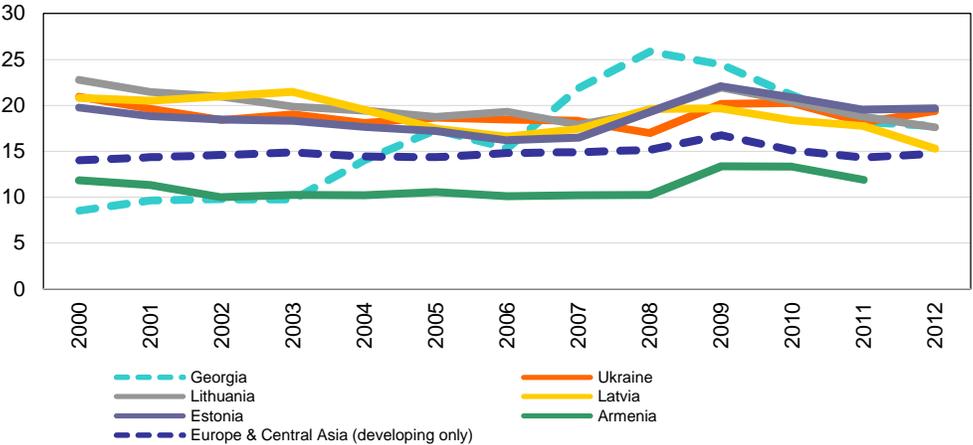
Overall, however, the macro-level risks seem not to be an overarching concern for the private sector lending market. Firm-level risks seem to be much more important in the determination of the risk-premiums¹⁹.

¹⁹ The support for this argument can be seen quite clearly from the surveys of banks about their existing and potential clients outlined in the Investment Climate Analysis in Appendix 1.

While the growth diagnostics approach does not make immediately clear which specific types of firm-level risks may be driving up the lending rates, the evidence from the business climate surveys points in the direction of multiple factors, such as **concerns about steady income flow, quality of human and managerial capital, and concern for property rights** as the driving factors behind credit risk perceptions.

Informational asymmetry can also increase risk profiles of borrowers and the cost of credit. In the absence of well-functioning credit-sharing mechanisms, the cost of monitoring increases, driving up interest rates. Higher interest rates, however, contribute to the adverse selection problem – the situation in which only high-risk/high-return customers can afford to apply for loans, while low-risk/low-return customers are priced out of the market.

Figure 43: Government Consumption
(% of GDP)



Source: World Development Indicator (2014).

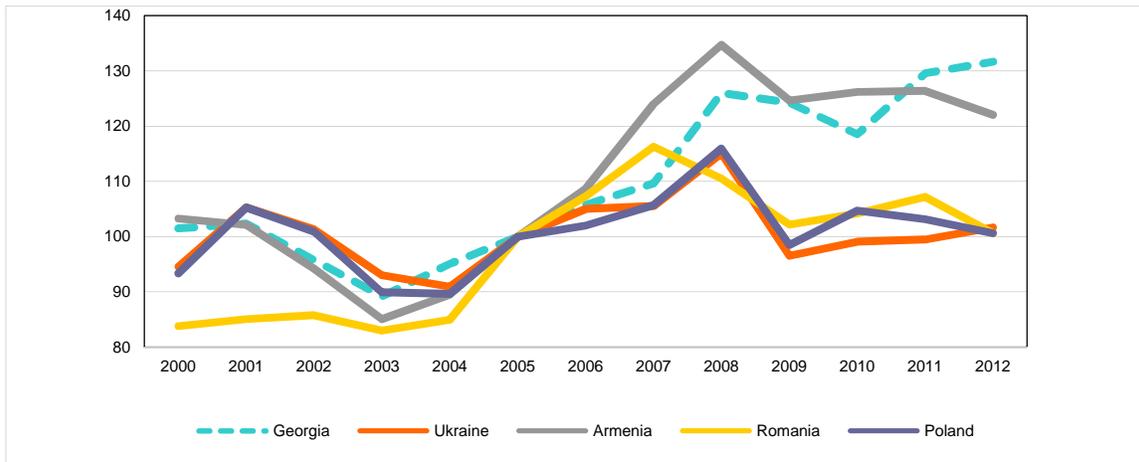
4.3.8 Currency Mismatch and Credit-induced Currency Risk

Another potential problem that can drive up the lending risk premium is the problem of currency mismatch and the credit-induced currency risk.

Deposit dollarization rates remain quite high in Georgia, and 68% of all deposits were denominated in foreign currencies as of the third quarter of 2012. Since the revenues of domestic firms are in local currency, the banks face the risk of borrower’s currency mismatch risk, even if they issue loans in foreign currency.

This missing market for hedging foreign currency risk can in part explain the high lending risk premiums (see the analysis by Otar Nadaraia, Vice-Governor, National Bank of Georgia, 2009)

Figure 44: Real Effective Exchange Rate²⁰



Source: World Development Indicator (2014).

4.3.9 Maturity Structure of Credit and Access to Finance

Given the lack of direct financing sources, a serious roadblock for Georgian business development lies in the short maturity structure of bank lending. Short-term financing indirectly contributes to high cost of credit.

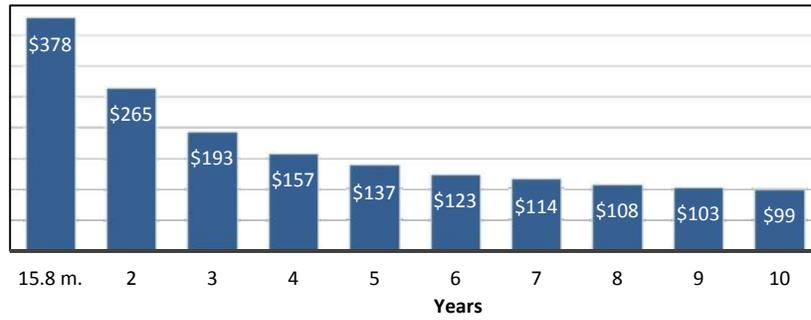
As per NBG's data, average maturity of loans is 15.8 months, while average lending interest rate is 19.4%. The total loan amount is 5.2 billion USD as of the end of January 2013. Undoubtedly, lengthening of credit maturity and decreasing the interest rate could have a significant positive impact on the borrowers' indebtedness and the cost of debt service.

For instance, increasing average maturity to 3 years while keeping interest rate at the same level would decrease an average borrower's monthly payment by 49% (Figure 45). However, only decreasing the interest rates would have a much more moderate impact (Figure 46). For example, decreasing the average interest rate to 18% would lower monthly payments only by 1%. However, changing both, the interest rate to 18% and maturity to 3 years, will decrease the monthly payment by 50% (figure 47).

Improving the maturity structure of private lending seems to be the most effective path for banking sector development. Yet, lengthening the maturity of private sector loans can be a challenging task, and would require overcoming the informational as well as institutional hurdles. The review of the existing literature on the subject is presented in Box 3.

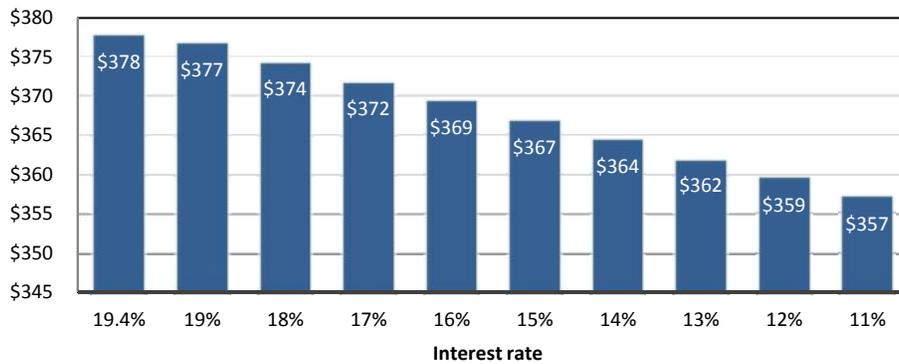
²⁰ Increase in the index denotes real appreciation of the domestic currency vis-à-vis a basket of currencies in trading-partner countries.

Figure 45: Payment per Month with Changing Maturity



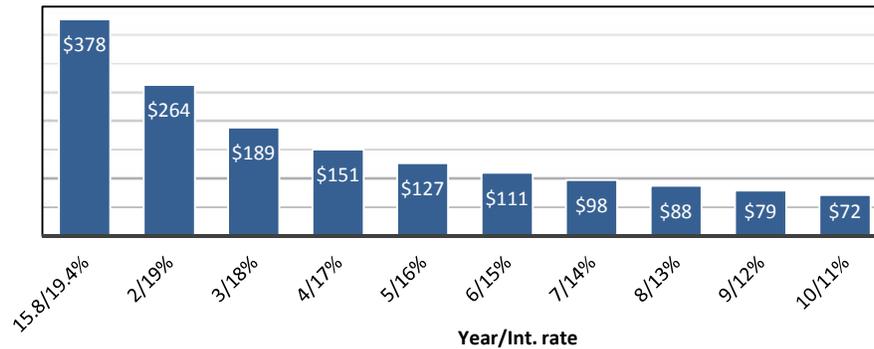
Source: Author's calculation.

Figure 46: Payment per Month with Changing Interest Rate



Source: Author's calculation.

Figure 47: Payment per Month with Changing Maturity and Interest Rate



Source: Author's calculation.

4.4 Growth Diagnostics Summary and Policy Recommendations

As the evidence outlined above suggests, private enterprise development in Georgia is constrained by the high cost of finance. In part, the problem lies in the lack of adequate direct sources of financing. In the absence of effectively functioning capital markets, firms need to rely primarily on bank financing if they wish to borrow. Obviously, this is not ideal, given that banks are required to adopt a much more conservative approach to lending than private venture capital funds would.

As far as bank financing is concerned, Georgia's real lending rates are higher than in most developing countries in the region. Our report identifies several factors that are driving the high credit costs and therefore contribute to low investment rates in the country.

One factor is undoubtedly the **low domestic savings** in Georgia as compared to a group of peer countries. However, the low levels of domestic savings alone may not at present be a *binding* constraint to capital accumulation, although the trajectory of their further development must be monitored. High liquidity levels of private banks, high rates of capitalization, and high spreads between lending and deposit rates in the presence of relatively competitive financial markets rather point to the **perceived credit risk as the binding constraint to investment**.

There is evidence that credit risk is both systemic and idiosyncratic in nature. **Weak support of property rights, and uncertainty in the face of political transitions** underlie the systemic risk factors.

In 2012 and 2013, Georgia underwent two peaceful political transitions: the parliamentary elections and the presidential elections, which involved handing over political power to the then opposition. Given that the political institutions in the country continue to evolve, some residual uncertainty is expected to remain.

However, as private firms learn to adapt to the new political process with stronger opposition counterbalancing the pro-government parties' agenda, one would expect to also see a more robust private investment growth emerging in the near future.

As far as idiosyncratic risk factors are concerned, **lack of stable income/cash flows, low quality of human and managerial capital of domestic firms, "missing markets" for hedging the currency risk** among small and medium size firms, **inadequate credit information sharing mechanisms, low financial literacy among the borrower**, all contribute to short-term maturity structure of bank lending and high cost of credit.

Based on these findings, the following policy actions can be considered:

Medium-term policy actions:

1. **Deposit insurance and depositor protection mechanisms.** The problem of low domestic savings is in part caused by inadequate depositor protection mechanisms. According to the recent NBG survey (Savings Behavior Assessment Survey 2011), only 38% of people who save money do so in the form of bank savings. However, up to 60% of the respondents would save money in the bank if offered deposit insurance. Hence, a

well-designed deposit insurance scheme may be one of the means to increase bank savings and lower the cost of credit in domestic currency. In addition, deposit insurance guarantee may increase competitiveness in the banking sector by making it less risky to deposit money in smaller, non-systemic banks. One has to be careful in designing such a program primarily to avoid moral hazard problems and consequent excessive risk-taking on the part of the banks.

2. **Improving credit-sharing mechanism.** Currently, Georgia has a functioning credit information service, which provides a database on defaulting debtors, current and repaid loans, offers credit scores and income verification services for both individuals and legal entities. However, the information is limited to bank debt information and to publicly available tax and administrative penalties information. Hence, new borrowers appear to be at a disadvantage. Furthermore, the current legislation makes it relatively easy for business clients to “erase” the credit histories by opening a new firm, effectively becoming a “new borrower”. This further exacerbates new borrowers’ access to credit.
3. **Facilitating property registration.** While the current laws make it easy to register private property (in fact, Georgia was number one in the world in the ease of registering property, according to World Bank Doing Business ranking, 2013), many banking institutions in Georgia come up against the problem of inadequate property registration. Sometimes, obtaining legal documents on private property ownership is costly for certain groups of borrowers. As in the case of agricultural land, property rights are not established due to lack of proper documentation or land disputes. Encouraging and facilitating private property registration is therefore essential to the development of deeper financial markets. Currently, the government of Georgia jointly with World Bank are at the early stages of negotiating a large irrigation and land registration project. When completed, this project could significantly reduce barriers to financing, especially for Georgian farmers.
4. **Improving reporting standards for firms.** Currently, small and medium-sized firms struggle with substandard financial reporting, which significantly complicates bank borrowing and monitoring processes. Government programs aimed at helping SMEs to improve reporting standards could help to substantially reduce the cost of borrowing for small and medium sized-enterprises. Georgian firms, on their own, may not have an incentive to improve the quality of their financial reporting to attract funding precisely because the bank lending rates may be unaffordable, while capital markets remain undeveloped. This vicious cycle creates room for policy measures to improve/incentivize financial accounting quality.

Long-term policy actions:

1. **Developing capital markets.** As mentioned in the report, the absence of direct sources of financing, such as investment funds and stock exchange, puts an undue strain on banks as a source of capital financing. The riskiness of start-up projects increase interest rates and reduces overall investment. Capital market development can be facilitated by strengthening the legal base for their operation – for example strengthening regulations on corporate governance, financial reporting standards, property rights protection, and the legal system are the factors that contribute to capital market development.

2. **Diversifying industrial base.** The quality of assets for Georgian banks suffers primarily from the absence of diversified investment portfolio. Regional and sectoral diversification of bank lending is rather low, which in turn increases lending risk. In this respect, setting government priorities and clear industrial policy agenda would help both private firms and banks to overcome the informational hurdles and coordination failure problems and channel lending more efficiently.
3. **Reducing income inequality through job creation and inclusive growth.** Income and wealth inequality is a long-standing problem in Georgia. It hurts the country's financial system on two fronts: by reducing bank savings and by complicating access to finance for a large part of the population. Income and wealth inequality contribute to low diversification, preventing private sector growth. Therefore, the goal of the government should be not simply a stronger economy, but an economy characterized by more equal and inclusive development.

In conclusion one may say that while the Georgian financial sector still faces many challenges, it also has the possibility to tap into many growth opportunities. The well-designed policy mix aimed at increasing financial literacy and informational transparency; promoting the platform for direct financing (the stock exchange) as well as the diversified industrial base; and, the institutional policies to improve the maturity structure of bank loans to private sector, could all significantly improve the growth prospects of the Georgian banking sector and the Georgian economy as a whole.

Conclusion

Analysis of financial soundness indicators for Georgia demonstrates that the country's financial sector is characterized by significant opportunities for development, as well as a number of serious challenges, which need to be addressed on the policy level.

Overall the financial sector in Georgia is strongly dominated by banking institutions with direct finance effectively not functioning in the country. The banking sector exhibits comfortable capitalization and liquidity levels eliminating any significant risks of default. The banking sector has demonstrated high resilience even during times of stress, which was achieved through the support of strong shareholder base.

Despite the signs of strength, certain structural constraints do not allow banking institutions to play a more prominent role in the country's economic development. The rather small size of the economy and the banking sector in particular remains a major constraint to achieving economies of scale and improved efficiency.

Short-term liability structure translates into predominance of short-term lending and hinders financing of long-term projects. This results in higher debt service burden and higher credit risks for banks' clients. The dominance of foreign-currency denominated liabilities is reflected in asset dollarization and implies increased currency induced credit risk for banks.

Low financial literacy and lack of strong entrepreneurial base results in low financial penetration and prevents growth of the financial sector. Moderate country rating prevents commercial banks from decreasing their cost of funds and drives up lending interest rates. In addition, an underdeveloped industrial base in the country hinders the diversification and expansion of banks' loan portfolio.

Despite the host of factors which drive up credit risks for Georgian commercial banks, the non-performing loans based on the "90 days past due" criteria have remained at comfortable levels as compared to their peers. Georgian banks have also shown competitive return on equity ratios. At the same time, Georgia's financial sector is characterized by large interest rate spreads, which, coupled with high lending rates, indicate that perceived (not necessarily realized) credit risk is responsible for low levels of capital investment. Thus, the system contributes to the adverse selection of bank clients, driving out the low-risk/lower return borrowers from the market, leaving the banks with high-risk/high-return clients.

Overall, our analysis suggests a number of medium and long-term policy actions to strengthen the financial system in the country. Among the possible medium-term actions are deposit insurance and/or depositor protection mechanisms, improving credit-sharing mechanisms, improving accounting standards for firms, and facilitating property registration. The long-run policy actions should concentrate on developing alternative (non-bank) sources of financing for entrepreneurs, diversifying the industrial base of the country, and reducing income and wealth inequality among the general population by promoting and creating opportunities for high-productivity employment.

5 Appendix 1: Georgia: Insights into the Investment Climate

5.1 Introduction

The stability of a banking system is a function of multiple factors, not the least of which is a resilient, well-diversified industrial base of the country. Sound investment climate is therefore a crucial component of financial and economic development. Problems in the regulatory framework, property rights protection, tax administration, etc. can create investment bottlenecks, which in turn impact on the development of the banking system.

Poor investment climate leads to increased cost of funding, increased risk of investment in domestic projects, reduced profitability of the banking sector and greater systemic risk. For this reason, policymakers pay particular attention to investment climate and investment constraint assessments for both large enterprises and SMEs.

Typically such assessments are done via investment climate surveys, where the standard practice is to ask the existing firms to rank the constraints to investment and growth they encounter according to severity of impact. An alternative approach is a comprehensive Growth Diagnostics analysis, which attempts to uncover the binding constraints to investment by analyzing the evidence on whether and how firms attempt to overcome such constraints.

Below we discuss the pros and cons associated with the standard approaches, and present the results of a survey conducted in conjunction with the in-depth interviews of several largest firms and banks in Georgia. The purpose of the survey was to gain new insight into the investment climate in the country. Our main findings confirm the existence of property rights uncertainty, regulatory framework deficiencies, and insufficient human capital as the principle constraints to investment.

5.2 Investment Climate and Investment Constraints: Review of Existing Studies

The main business climate surveys in Georgia to date are the Business Environment and Enterprise Performance Survey (BEEPS) by European Bank for Reconstruction and Development (EBRD) and the World Bank Group, performed in April-August 2008 and July 2012-December 2013, and the GeoStat Small and Medium Business in Georgia Survey (2009), which covers two quarters in 2007 and 2008.

In these surveys, the firms' managers/ business owners are asked to report the obstacles to doing business on the 5-point scale, ranging from "no obstacle" to "very severe obstacle". According to BEEPS 2008 results [2], the top-ranking problem was electricity (with 65% of the firms citing electricity as a problem), while access to finance was second on the list (55% of the firms). Other problems, ranking 3rd to 6th and in the order of decreasing magnitude of severity, were: tax rates; crime theft and disorder; access to land; and skills and education of the workforce.

The scores have been calculated based on the percentage of firms who reported the problem as either moderate, major or very severe. The drawback of this type of ranking, however, is that it

does not give a clear indication of whether the constraint in question is truly binding, that is, whether removing the constraint would have maximum impact on the firm's growth. To this effect, the Enterprise survey (administered by World Bank) also reports the ranking of problems by the percentage of firms who reported them as being the main, or the biggest obstacle for their business.

In the latter case, the **access to finance, political instability and electricity** came out on top of the rankings in **2008** having 18%, 17.4%, and 16.4%, of the firms respectively reporting them as the main obstacles, respectively. In addition, these problems in Georgia appeared to be more pronounced than in other countries of Europe and Central Asia (ECA) in the same period.

In **2012-2013**, however, the situation changed, with 42.1% the firms overwhelmingly reporting **political instability** () as the main obstacle [5]. This result is definitely not surprising, and is likely temporary in nature, given that the country went through its first democratic transition of power via parliamentary and presidential elections in this period.

Access to finance was number 2 on the list of main obstacles to doing business with 20.9% of the firms reporting this. (). In contrast, in the ECA countries, access to finance was a problem for 15.3% of the firms.

Tax rates was reported as the third main obstacle by 15.2% of the firms, although the problem was less severe than in the ECA countries where 17.6% of the firms reported it. Electricity concerns dropped to 7th place, with 2.1% of the firms reporting it.

Interestingly, the inadequate education of the workforce does not appear to be a main obstacle for doing business to many firms as only 4.1% of firms reported it in 2008 and only 2% in 2012-2013. This may signal, however, that a potential constraint associated with human capital may be for the time being obscured by other, more binding constraints, such as political stability or access to finance.

As far the **SMEs**, the three leading constraints emerging from the 2007-2008 GeoStat survey [11] were **high inflation rate, high interest rates and high tax rates**, followed by credit availability, even though it was cited as an obstacle by only 1 in 10 firms.

The advantage of the surveys is the ability to utilize a large sample size for statistical analysis and estimate fairly precisely the (perceived) constraints facing the existing firms. However, one of the main disadvantages is the obvious sample selection bias of such surveys.

The questions about the constraints are asked of the existing firms in operation, which by definition consists only of those firms that have overcome the most severe obstacles to starting and staying in business.

The sample selection bias results in certain inconsistencies in the reported data. For example, even though access to finance was cited by 18.3% of the firms in Georgia as the main constraint,

as much as 60% of existing firms did not apply for a loan in 2012-2013 because it was not needed. This number was the second highest in the ECA after Kosovo.

BEEPS 2008 reveals that 38% of Georgian firms indicated that financing was NOT a problem for them as compared to 34% and 30% respectively in ECA and Former Soviet Union - South (FSU-S) () countries of Armenia, Azerbaijan, Moldova, Kyrgyz Republic, Tajikistan, and Uzbekistan [2].

In addition, 15.9% of the firms in Georgia cited unfavorable interest rates as the reason they did not apply for a loan in 2008 as compared to 18.8% of the firms in the FSU-S countries. In the same year, only 3.7% of the Georgian firms cited collateral requirement as the reason they did not apply for a loan, slightly lower than in both ECA and FSU-S countries, although the value of collateral as a percentage of the loan value has been very high in Georgia (185.1% vs. 133.4% in the ECA countries in 2008 [6]; and 222.8% vs. 136.9% in the ECA countries in 2012-2013 [5]). Given the evidence of high cost of financing in Georgia, one can conclude that a large percentage of firms had to adapt to the unfavorable credit conditions in order to stay in business. The survey, however, could only capture the firms that have adapted successfully.

It is also worth noting, that the survey-based methods are not likely to capture the possible interrelation between different constraints facing the firms, or uncover the root causes of the problem in question. For example, inadequate access to finance and high interest rates may stem from a variety of causes – such as low competitiveness of the banking sector, problems accessing foreign credit, or the risk of doing business in the country.

In addition, if problems are internal to the firm (such as low quality of management), then self-assessment by the managers would often be biased towards a more favorable view of the firms' prospect.

The non-survey based growth diagnostics methodology is often used to help overcome the problems mentioned above. Growth diagnostics allows not only to identify a binding constraint, but to analyze the possible causes of the problem. For example, if a country suffers from low levels of capital investment, and lending rates are high, one possible course of action by the government is to establish programs to subsidize or lower the cost of credit. However, such intervention may be counterproductive, if the root of the problem lies in the lack of adequate human capital, coordination problems among firms in the industry, or political uncertainty – all of which reduce the number of viable projects and increase the investment risk.

In fact, the most recent growth diagnostics study for Georgia using 2000-2010 data (Babych, Fuenfzig, 2012) contended that the high cost of capital in Georgia is likely to stem from the high perceived risk associated with starting and running a business, and has identified the uncertainty about property rights (broadly defined) as the primary binding constraint.

In Georgia, the low capital accumulation and high interest rates are coupled with low levels of domestic savings (Figures 32, 33 and 35, Growth and Development Perspective section), but also

with relatively low rates on bank deposits. The result is a high interest rate spread where in fact, Georgia's interest rates spread was one the highest among the peer group of countries (Figure 37, Growth and Development Perspective section). This, according to the study, indicates that the low supply of domestic savings alone is not likely to be responsible for high lending rates; otherwise, banks would try to attract the funding for viable business project by offering higher rates to depositors. Rather, the problem stems from the high risk premiums associated with the uncertainties about property rights, as well as political and institutional instability in the country.

The risk premium is captured in part by the large spread between government bonds and the commercial lending rate (Figure 41). The risk premium remains high despite the fact that default rates in Georgia were lower than in the rest of developing Europe and Central Asia.

The study highlighted that some of the other potential constraints, such as human capital and infrastructure, while not binding at the moment could become binding once the property rights uncertainty constraint has been removed.

While the growth diagnostics methodology is a very useful practical tool for establishing policy priorities, it is designed to identify first and foremost the binding constraints to growth. The results of such studies could therefore be further improved by relying on surveys followed by structured in-depth interviews with both the suppliers of credit (banks) and potential lenders (firms).

The surveys of banks about their clients have an advantage of providing insights into both the successful and the unsuccessful bank-client relationships, which in turn would help reduce the sample selection bias discussed earlier.

5.3 Methodology

For the purpose of the study, we designed an investment climate survey, which was distributed among a group of a few large private firms and large commercial banks. For the firms, the questions were grouped in the following way: a) general information about the firm; b) investment climate constraints to the establishment; c) financing; d) business-government relationship; e) capacity innovation and learning; and, f) labor relations.

The banks were asked questions about the constraints to investment facing their clients' operations and growth, and the obstacles to issuing loans in the Georgian market.

The survey answers were followed up by either electronic or face-to-face interviews, where the respondents were asked to elaborate on the nature of the particular constraints they indicated as being significant.

The drawback of this methodology is the obviously small sample size, which precludes statistical analysis. Secondly, the large firms interviewed were also subject to the sample selection bias, as they have successfully overcome the constraints facing other firms in the market. And yet the advantage of such approach is twofold. First, the sample selection bias is reduced in the case of bank responses about their clients, as banks deal with both successful

and unsuccessful firms. Secondly, the survey and follow-up interviews can serve to supplement the existing studies by helping to clarify the nature of responses to the survey questions, and expose some “hidden issues” that would have been otherwise missed in the simple survey.

The full survey questionnaire on investment climate and investment constraints is attached in Appendix 4. The respondents were 2 large private firms (telecommunications and household appliances retail) each with a market size of more than 25%, and 3 largest private commercial banks with a combined share of more than 60% of the Georgian market.

5.4 Results: the Main Insights from the Investment Climate Survey

The top obstacles to doing business by firms, as reported by the banks, were:

- Quality of labor (ability to find qualified/skilled workers) – moderate to severe problem
- Cost of financing, access to financing, economic and regulatory policy uncertainty – moderate to minor problems.
- Macroeconomic instability, tax rates and labor costs --major to moderate constraints.

5.4.1 List of constraints

5.4.1.1 Macroeconomy

Concerns about macroeconomic environment is mentioned by the companies in the context of affecting revenue uncertainty. Not surprisingly, the banks did not mention macroeconomic stability (inflation, exchange rates) as a problem.

5.4.2 Quality of labor and cost of labor

Quality of labor, or inability to find qualified workers for the job, has been mentioned in all interviews. Hence, high premiums on qualified labor exists. Although banks do not mention the cost of labor as an obstacle for their clients (perhaps because clients seeking a loan do not complain of staffing issues), the issues of quality and cost comes to the forefront in the extended interview answers.

In particular, labor costs in absolute terms may not be a problem, while in relative terms --the gap between wage premium and the set of skills one can expect to get for the premium-- is a moderate to major obstacle to doing business. The inability to find qualified labor in the fields of Energy and Physics were mentioned in particular. The respondents also referred to the dynamics of wage premium growth relative to revenue growth as a source of concern. This might indicate that the human capital constraint is becoming more severe.

5.4.3 Uncertainty in Property Rights Enforcement (PRE)

Although uncertainty in PRE is listed as a minor problem in the surveys, the interview extended answers are pointing towards PRE - under the guise of land accessibility and availability of collateral, and even access to electricity.

Some of the issues that have come up in the interviews are:

- Nationalization of purchased land plots (e.g. Svaneti);
- Leasing codes for 1 Ha of government land 10 times higher for mobile telecommunication commercial operators; and
- Energy companies not willing to service the lands that have disputed or undefined ownership, with the companies relying on diesel generators for electricity, which are very expensive.

In banks' interviews about access to financing, the respondents indicated that unwillingness to officially register property prevents the clients from using their property as collateral and hinders access to loans. While the property registration process is relatively easy in Georgia, the unwillingness to register can be a function of both the cost of registration and disputed ownership. In either case, the uncertainty about property rights remains an obstacle for businesses to access bank financing.

5.4.4 Uncertainty in Regulatory Policy

This type of constraint is generally rated as moderate or moderate to severe, particularly by companies themselves. Companies mention regulatory burden – such as attempts to regulate prices in the environment where no natural monopolies exist. Companies argue that there is a need for transparent and independent arbitration process in the case of regulatory disputes, which would rely on sound economic principles and best world practices and not on the whims of the regulators.

5.4.5 Anticompetitive Practices or Informal Practices

These are rated as mostly minor, sometimes moderate for bank surveys. No further explanation was given in the extended interviews.

5.4.6 Access to Financing and Cost of Financing

These constraints are generally rated as moderate to major problems, except in the case of large companies who manage to rely exclusively on internal finances.

The appliance retail company in our survey mentioned access to finance (i.e. lack of collateral) as a major problem to business growth. If a company leases, but does not own the commercial property, securing a loan is difficult or impossible.

The larger companies reported having access to domestic currency borrowing with the value of collateral being 110% of the loan, at the interest rate of 14%. Maturity of the loan averages 1 year. These numbers may not be representative, and in fact more favorable than the reported economy-wide averages. For example, the average annual interest rate on lending from commercial banks in Georgia in 2012 was 22.1% in domestic currency, and 14.4% in foreign currency according to the data from the National Bank of Georgia.

Banks reported that the **leverage** (debt/asset ratio) for the client companies is usually less than 1, more typically 0.5-max.0.6 or 0.7. Companies with higher than 100% leverage are typically not eligible for a loan, unless under specific circumstances (e.g. service companies). The acceptable leverage ratio ranges from 0.5-1.3 or sometimes 1.5; average client leverage is 0.7.

The interesting insight that came out of the interviews was that debt-to-asset ratio typically does not play as much of a role in loan considerations (e.g. cash flow and profitability). Loan amounts are usually up to 3 times of net yearly profit.

The main reason to deny a loan as reported by the banks is the client's low ability to service a loan, in particular, instability of income. The problems of collateral become less pronounced when the income source is stable. Collateral is important while lending to start ups, but less to established businesses, which are evaluated based on their annual profits.

Lack of experience in the line of business that the client is undertaking was stated as one of the reasons for denial. If an established company takes up a new line of business, the bank may refuse to advance a loan, even though the company may have a good track record in the existing line of business. This of course points to the fact that firm innovation and experimentation may be very costly or impossible to fund through bank financing.

The company's experience in the market and length of operation is also an important factor in loan decisions. Interestingly, inexperienced and incompetent management was also cited as an obstacle to receiving business loans. This once again points to the existence of human capital constraints, which have been largely overlooked in the simple business surveys.

Business loans denominated in foreign currency range from 10% to 63% and 70%. The bank with the smallest amount of loans denominated in foreign currency is rather an exception than the general rule.

The main reason for foreign currency denominated loans is the lack of **sufficient long-term deposits in GEL. Local currency resources are usually limited and expensive.** Banks incentivize GEL funding by the significant deposit premiums on GEL deposits.

On **cost of financing**, some banks reported that the interest rates (e.g. 13-14%) are not major obstacle to client's development, considering the 20-25% profit rates of the businesses who apply for loans. This may be the case of a sample selection bias among the larger banks, considering that only firms with high enough profits would consider applying for a loan at all. This can explain

why the banks that mainly service small businesses do cite the cost of finance as an obstacle to their client's business development. Small business lenders among the banks are also more likely to report management education and experience as severe limitation to the client's growth.

Overall, however, the lack of initial or seed capital is considered by banks to be a bigger problem for client's business development than access to bank credits or cost of bank financing. The need for alternative financial instruments to provide companies with seed capital has been reported in the interviews.

5.4.7 Government-Business Relations

Generally, large firms advocate less intervention, property rights enforcement, less bureaucratic burden, and less burdensome regulations for specific industries. Government intervention is only supported in the case of agro- insurance.

Firms do not consider public infrastructure as a problem, but consider impartial court system for firm-government arbitrage as necessary. The ambiguity of the tax code and lack of cooperation with government on developing sensible regulations were cited as a problem.

5.4.8 Innovation and Learning

Banks reported clients (in particular agro businesses) introducing new plants, planting new crops, using higher quality pesticides; roughly 50% introduced new technologies that substantially changed the way the product is produced; 25%, agreed to new ventures with foreign partners; 15% developed new product lines, while 40% upgraded existing product lines.

Government regulations, quality of management; education and experience of the labor force were cited as the obstacles to introducing new technologies and innovation:

5.4.9 Labor

Average premium for a skilled worker's wage was reported to be 50% and in some cases 100-500% over an unskilled worker's wage.

Training beyond the basic on –the- job training is provided; however, the high cost of training (in retail), lack of relevant experience and educational background of the workers have been cited as primary concerns when training the new labor force.

5.4.10 Main obstacles to issuing bank loans (from bank surveys), in the order of higher to lower importance:

1. Low financial education
2. Lack of stable entrepreneurial initiatives
3. Gap in development of other sectors in the economy (market size)
4. High leverage of clients
5. Maturity of loans
6. Limitations in acquiring financial funds
7. High interest rates
8. Low demand for credit due to lower growth rates

Overall, the results of the Investment Climate Assessment survey and interviews confirm that political stability (uncertainty about regulatory environment and property rights) and access to finance are important constraints to doing business in Georgia.

At the same time, the interviews with the banks about their clients revealed other types of constraints, which are typically not registered in regular business surveys. Among these constraints are:

- inadequate human capital (in particular, low financial education of the banks' clients, lack of experience in the line of business, low quality of management), and
- instability of income flow.

These constraints appear to be even more limiting to business' development than lack of collateral to finance the loan.

For small and medium- sized enterprises, the cost of financing, particularly high lending rates continue to be a problem. The evidence from different sources seems to point to the existence of high risk premium as one of the reasons behind high lending rates and high interest spreads. The high spreads, however, can also stem from low cost efficiency of the banking sector, small market size and lack of sector diversification in the economy. A more comprehensive diagnostic study is required to pinpoint the determinants of the high cost of finance in Georgia.

In terms of policy initiatives, the present study recommends the need for alternative, non-bank sources of financing for start-up enterprises as a means to alleviate the credit constraint in the economy. In light of this, the recent launch of the Georgian Co-Investment Fund (GCF) could be an important first step in this direction.

6 Appendix 2: High Interest Rate Spread in Georgia

6.1 Introduction

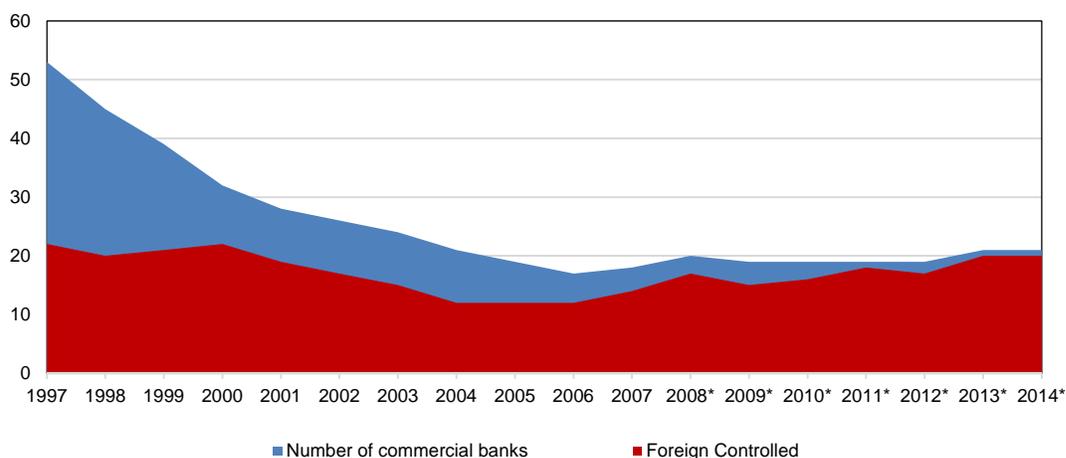
Earlier in the report, we identified the cost of finance as one of the main constraints for the development of private enterprise in Georgia. Indeed, as growth diagnostic analysis has shown, both the real lending rate and interest rate spread in Georgia are quite high relative to other countries in developing Europe and Central Asia. In addition, Georgia has a very high risk premium on lending – this despite a rather low share of non-performing loans in the banks' portfolio. The combination of these factors suggests that the **high cost of finance has been driven mainly by the perceived credit risk of the private sector** in Georgia.

This diagnosis, however, may be too general for most practical applications. After all, perceived credit risk is rather a symptom of a broader spectrum of bottlenecks that exist in the economy. Our aim in this section is to provide a closer analysis of factors behind the high interest rate and interest rate spread in Georgia²¹

6.2 Georgian Banking Sector: Competition, Credit Constraint, and the Role of Foreign Ownership

The Georgian banking sector ownership structure has been changing in recent years. More than a decade ago, bank ownership was mostly concentrated in the hands of local individual investors. Currently, foreign banks are majority owners in large domestic banks (Figure 48).

Figure 48: Foreign Capital Participation in Georgian Banking Sector, 1997-2014

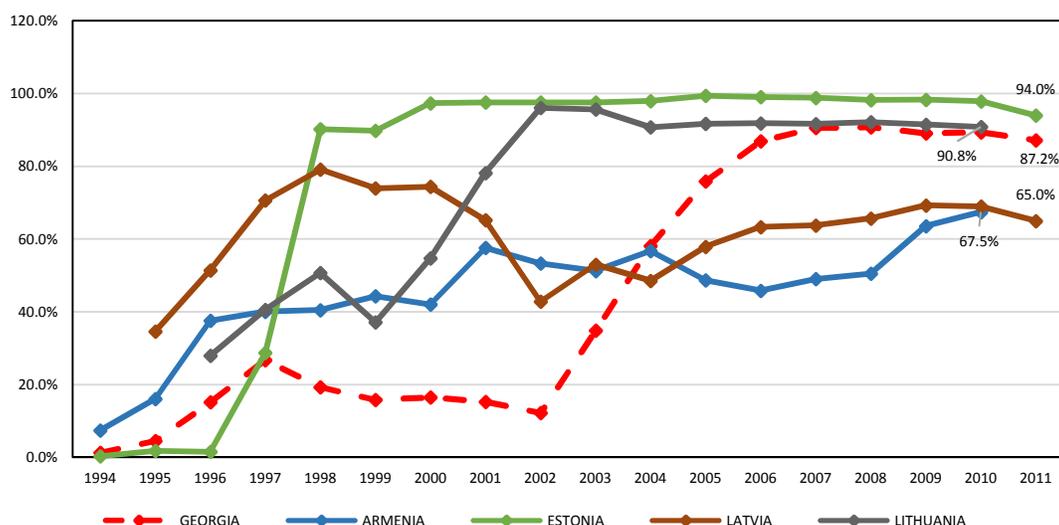


* At the end of the year

Source: National Bank of Georgia

²¹ In this section we concentrate mainly on the issues that have not yet been raised elsewhere in the report. Whenever possible, we provide reference to the relevant sections in the main body of the report.

Figure 49: Share of Foreign Ownership (Bank with Foreign Owned Assets > 50%)



Source: European Bank for Reconstruction and Development (EBRD) bank survey.

As Figure 49 illustrates, this trend is not unique to Georgia. The costs and benefits of foreign ownership have been discussed extensively in economic literature.

On the one hand, as some researchers argue, the increasing trend of foreign participation in Georgia could reflect a build up of trust towards the Georgian financial sector on the part of foreign investors. This can provide an opportunity for better integration into the global financial market. Sound and experienced global investors bring their expertise to the local market, which in turn can lead to product diversification, better risk governance and improved corporate governance practices (Clarke et. al [2006]), Cull et. al [2010]).

On the other hand, one of the main risks of foreign bank penetration in the developing countries lies in its effect on credit availability to SMEs. For example, a number of studies emphasize the risk-averseness of the foreign owned banks and claim that capital generated by this processes will be distributed among relatively low risk firms, operating in already developed sectors (Allen et al [2001], Berger et al [2002]).

In Georgia accessing credit for small and medium-sized firms is indeed problematic. Access to finance was named as the first and the second biggest obstacle experienced by private sector firms in 2008 and 2013, respectively.²²

The analysis of long-term trends in interest rate spreads corroborates the evidence that cost of finance is a long-standing problem in Georgia (Figure 38, main text). The question, however, is whether foreign ownership of banks contributes to this problem.

6.3 Foreign Capital Participation: World Experience and the Case of Georgia

As we mentioned earlier, foreign ownership of the banking sector may bring a number of important benefits as well as threats. Based on the data from Georgia and other developing economies, how important are the threats?

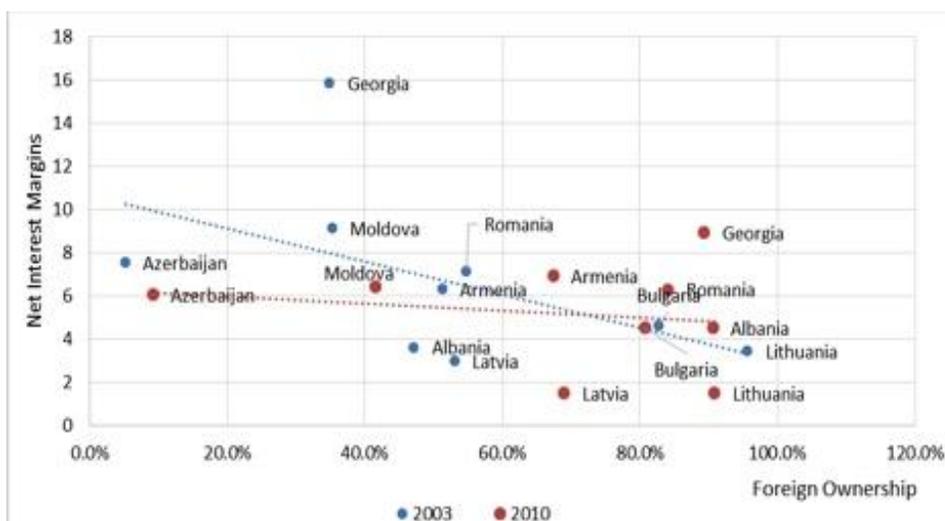
²² Based on World Bank Enterprise Survey (ES) data about Georgia for 2013 and Business Environment and Enterprise Survey (BEEPS) data provided by EBRD and the World Bank

One indicator to consider is the interest rate margins of the banks. If indeed the foreign owned banks tend to be more risk averse, the interest rate margins would tend to be higher.²³

Figure 50 shows the correlation between net interest margins (World Bank data) and foreign bank assets share (EBRD bank survey data).²⁴

First rough conclusion based on the data is that countries with high participation of foreign capital are characterized by smaller net interest margins (downward sloping blue and red trend lines). In 2003 the effect of foreign asset participation on interest margins seems to be bigger than in 2010.

Figure 50: Net Interest Margin vs Foreign Bank Assets Share, 2003 and 2010



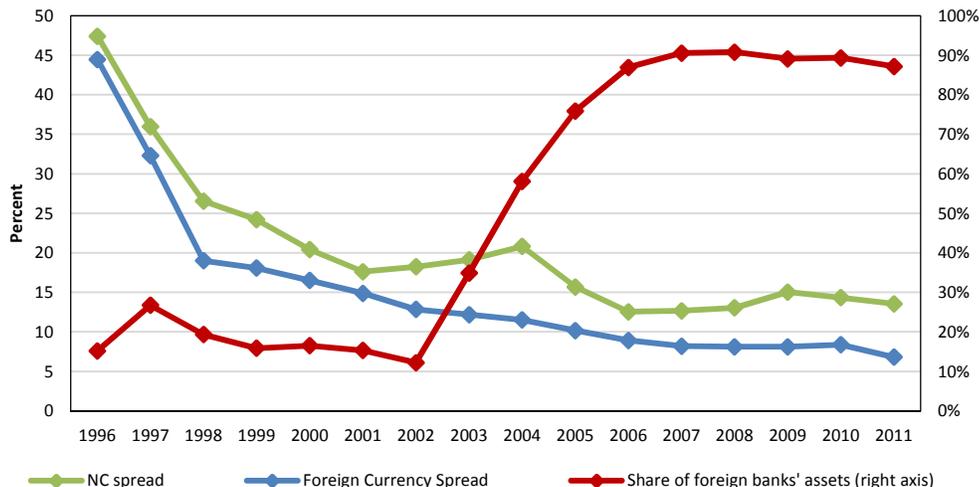
Source: World Bank, EBRD banking survey

A closer look at the Georgian data in Figure 51 reveals that interest rate margins on both national and foreign currencies were decreasing at about the same pace between 1998-2002, when the share of foreign assets was declining, and between 2002-2011, when the share of foreign capital in the banking system increased dramatically. This leads us to conclude that the evolution of interest rate margins of the Georgian banks was largely unrelated to the level of foreign bank participation.

²³ The interest rate margin is defined as the difference between interest income earned and paid out relative to the amount of interest-earning assets. Therefore, higher risk aversion among the banks would lead to both the increase in risk premium on the lending rates, and to the lower amount of interest-earning assets.

²⁴ Foreign ownership is defined as banks with assets under foreign ownership > 50% for some European and Eastern Asian countries in 2003 (blue dots) and 2010 (red dots).

Figure 51: Interest Rate Spread in NC and FX and Foreign Bank Assets Share, 1996-2011



Source: World Bank, EBRD banking Survey.

6.4 Bank Concentration and Competitiveness

Earlier in the report we summarized the evidence and argued that banking sector concentration does not necessarily imply lack of competitiveness. One reason is that the banking industry as a whole is characterized by increasing returns to scale, where larger financial institutions achieve higher cost effectiveness than smaller ones. In a relatively small financial market like Georgia it would be unrealistic to expect low industry concentration in the banking sector.

Competitive behavior among Georgian banks is further evidenced by the relatively high number of bank branches per 1000 adults (Figure 40, main text). If the banks did not compete with each other for the customer base, there would be less need for opening and operating costly bank branches.

Another argument against foreign bank participation is that risk aversion of foreign-owned banks hinders development of new and start-up industries, and can lead to high concentration of lending only in a few high-return sectors.

As discussed earlier in the report, Georgian banks' regional and sectoral diversification continues to be very low and the sectoral gap between the bank lending allocation and value added is also apparent.

6.5 Can the low diversification of loans over sectors be explained by high foreign bank participation?

Recent work of Haselmann and Wachtel (2007) finds some noticeable differences in balance sheet characteristics among bank ownership groups. Foreign owned banks are more risk averse than domestic owned or state owned banks. However these differences are not too large. According to the study, the overall performance of banks is homogenous irrespective of foreign ownership, and there are no clear groups of banks with excessive risk taking behavior.

However, Haselmann and Wachtel emphasize that bank's "taste on risk" mainly depends on the banking environment. Improving the legal environment is associated with higher risk taking

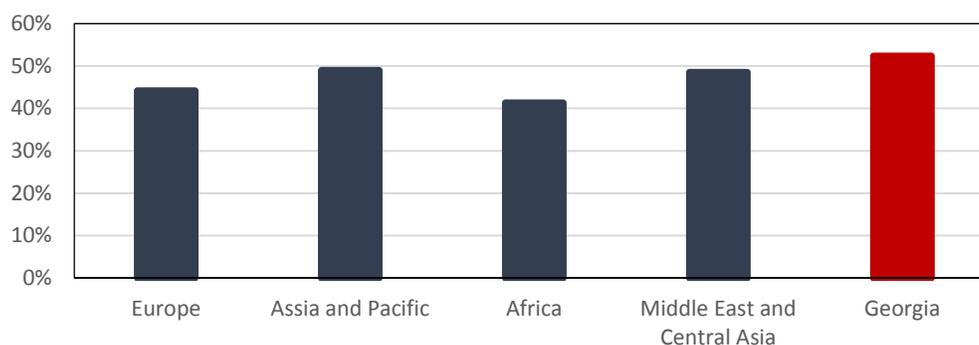
behavior on the part of banks, which could be reflected subsequently in lower interest rate spreads. Hence, it is important for the regulators to monitor risk taking behavior of financial institutions, even as they improve the legal environment in which the banking system functions.

To conclude, we do not find direct evidence that higher foreign bank participation has increased the interest rate spread in Georgia. Besides, existing literature claims that risk aversion of foreign banks and local banks does not differ significantly and low diversification can be a systemic problem unrelated to foreign participation.

6.6 Operating Costs

In the data we observe that Georgian banks incur the biggest share of non-interest expenses as personnel costs. Figure 52 shows the personnel expenses as a share of non-interest expenses. Clearly, personnel expenses in Georgia are higher than the European average.

Figure 52: Personnel Expenses to Non-interest Expenses, 2012 Q4

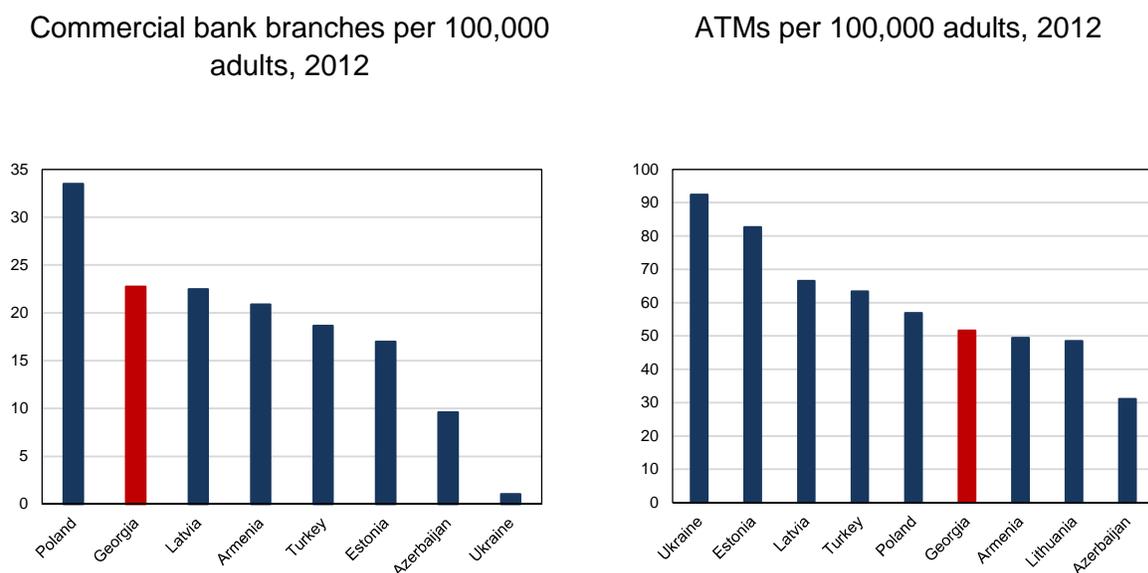


Source: IMF Financial Soundness Indicators

Relatively high personnel costs reflect the above average expenses required to maintain staff in the banking branches throughout the country. The environment with low internet penetration coupled with low financial literacy implies high costs to commercial banks. The heavy reliance on the traditional ways to conduct bank transaction makes banks more labor intensive and contributes to the high costs of financing. In this respect, Georgia is behind many peer countries in the region.

Figure 53 illustrates the extent of Georgia's reliance on bank branches rather than ATMs for conducting financial transactions.

Figure 53: Commercial Bank Branches and ATMs per 100,000 adults, 2012



Source: IMF Financial Access Survey, 2012

The high number of bank branches in Georgia may also reflect low financial participation rates among the population.²⁵ Countries with lower financial participation rates have to maintain the personnel and branches to attract and serve new customers. On the other hand, for countries with high financial participation rates (e.g. Ukraine, Estonia), ATMs are sufficient for serving the existing customer base.

In addition, high wage costs of Georgian banks are a function of the high premiums on qualified labor. Despite high rates of tertiary education, the quality of human capital is a well known problem in Georgia, and is exacerbated by the fact that primary education especially in science and mathematics compares poorly with other countries in Eastern Europe.²⁶

Major banks in Georgia try to overcome the personnel problem by establishing their own training centers for middle management, which raises the overall costs of operation. Compensation for top management is high due to high wage premiums for local professional staff with specialized knowledge, and the keen competition among banks for middle and top management.

Another important factor contributing to high cost of finance in Georgia is low financial reporting standards among Georgian companies, which was discussed earlier in the report. The substandard financial reporting significantly complicates loan evaluation for commercial banks leading to higher administrative costs and lower asset quality.

²⁵ In particular, Georgia has a lower number of depositors per 1,000 adults than the peer countries of Ukraine, Latvia and Estonia, according to IMF Financial Access Survey, 2012.

²⁶ According to the Trends in International Mathematics and Science Study (TIMSS), Georgia's average score in mathematics in 2011 is 450 points, falling below the TIMSS center-point score of 500 and below most of the peer countries including Ukraine, Lithuania, Romania, Hungary.

While high operating cost might be part of a broader problem, they are not the only explanation for the high interest rate spreads in Georgia.

6.7 Regulatory Environment and the Cost of Funds

Earlier in the report we emphasized that the regulatory environment in the Georgian financial industry is rather conservative. The National Bank of Georgia (NBG) capital adequacy standards for higher quality core capital are more conservative than Basel I requirements. In addition to stricter capital adequacy standards, Georgia applies stricter standards for non-performing loans, requiring banks to hold higher levels of provisional capital to compensate for the potential losses.

As a result, the Georgian banking system proved to be quite resilient during the financial crisis of 2008. However, while these requirements improve the financial system's stability in the face of adverse shocks, they also increase the cost of funds for the banks and drive up the interest rate spreads.

6.7.1 Are stricter prudential requirements justified in the Georgian context?

As we have mentioned already, the banking sector in Georgia is highly concentrated. This means that even in the absence of a deposit insurance scheme, some banks may be considered as "too big to fail". Implicit bailout guarantee may increase the risk taking behavior of large banks in the absence of adequate regulatory mechanisms.

It seems that the stricter prudential regulations are driven in part by the desire to ward off banking risk and maintain public trust in the stability of the country's financial system.

Fostering of trust along with efforts to increase financial system participation could go a long way towards reducing the cost of funds. Higher participation would increase the rates of domestic savings available to the banking system, and reduce the currently high levels of both deposit and loan dollarization.

6.8 Macroeconomic Risks, Firm-level Risks and Asset Quality Concerns

The state of the country's macroeconomic environment is a potential driver of the high interest rate spread. The threats associated with large and increasing government budget deficit, high external debt burden, unstable inflation, high unemployment rate, unsustainable fiscal environment or macroeconomic policy uncertainty can all add to the perceived risks of doing business in the country, which would lead banks to increase the lending rates over the deposit rates.

Since overcoming the worst of the 2008 crisis, Georgia has prided itself on the relatively stable macroeconomic environment. Most of the country's macroeconomic indicators showed signs of stability, while the weaknesses have been managed with relative success.

As mentioned in the growth diagnostics analysis, overall Georgia's macroeconomic, fiscal, and monetary indicators have been encouraging. These positive developments were sustained over a number of years and were maintained recently despite the transfer of power in the government. Prudent macroeconomic policies have likely contributed to the steady albeit slow decline in the interest rate spread since 2003.

The good news for Georgia is that the interest rate spread is showing a downward trajectory over the years. The bad news is that despite the stable macroeconomic environment one can observe prolonged periods of stagnation and even a recent increase in the spread. Also, the interest rate

spread in Georgia still remains about 2.5 percentage points above the average for Europe and Central Asia developing countries.

In the absence of obvious macroeconomic triggers, what are the possible drivers of high interest spreads?

The recent *Growth Diagnostics: the Case of Georgia* study (Babych and Fuenfzig [2012]) highlighted property rights problems as one of the binding constraints to growth and one of the main drivers behind the high spreads. There has been plenty of anecdotal evidence of the instances of property rights violations in Georgia ever since 2003. Yet, there is no substantial evidence of systemic widespread violations, especially as compared to Georgia's regional partners.

In Georgia, given the history of violent power transfers since independence, the latest round of presidential and parliamentary elections have raised concerns about property rights protection. The political uncertainty, which accompanied elections in 2012-2013, has contributed to the perception of risk. However, observing the evolution of the interest rate spread over 2012-2013, one may notice that the spread remained nearly constant during this period of political and policy uncertainty. This may indicate that other considerations, namely the structural problems in the economy played a more important role.

The issues of low human capital, high unemployment and informational asymmetries have been already discussed in the report. Another important bottleneck to consider is lack of sectoral diversification of the Georgian economy. In this respect government policies to support industrial development and flow of foreign investment into economically and socially important sectors (e.g. industry, transportation, agriculture) would be crucial.

6.9 Summary of Findings

To summarize, several key factors may be influencing the high cost of bank finance in Georgia. These are:

- Foreign ownership and banking sector competitiveness
- High operating costs of the banking sector
- Regulatory environment and cost of funds
- Macro-level risks, firm-level risks and asset quality concerns

One of the central conclusions of our report is that **foreign ownership and high concentration in the banking sector are unlikely to be the principal drivers of interest rate spreads in Georgia.**

Overall, we do not find evidence of correlation between higher rates of foreign participation and interest spreads.

The banking sector concentration in Georgia is indeed high, but does not necessarily imply low competitiveness or monopolistic pricing of financial products, as long as barriers to entry into the financial sector remain low. This is the argument we had advanced earlier in the growth diagnostics analysis.

Cost inefficiencies and high perceived lending risk are the main drivers behind the high interest rate spreads in Georgia.

We conclude that unusually high operating costs of banks are most likely driven by high wage premiums on qualified workforce, issues with financial literacy among the existing and potential

clients, problems with internet access, low financial participation by a large share of the population. These factors necessitate the operation of high-cost banking branches, while the reliance on ATMs for financial transactions remains low.

In addition, as we had mentioned earlier in the report, while the number of non-performing loans in Georgia remains low, the perceived risk of lending is rather high. **The risks of operating in the Georgian market is related to a number of structural problems in the economy. In particular, small market size and low industrial base of the country leads to low diversification of credit portfolio, exacerbating lending risks.**

High lending rates are further perpetuated by **adverse selection problem**, which leaves banks to choose from a more risky pool of clients – the type of clients who could offer high returns and operate with lower credit maturities. Not surprisingly, bank lending has been concentrated in the wholesale and retail trade industry, which, according to 2012 data, contributes about 10% to the overall GDP but commanded about 45% of the overall lending flow in that year. This trend is not specific to 2012, but reflects more general tendencies in sectoral lending over the course of several years.

As far as feasible policy actions to alleviate the structural bottlenecks to reduce the cost of finance, the current analysis supports a spectrum of medium-term and long-term measures outlined in Section 4.4 of the report.

7 Appendix 3: Compendium

7.1 Abstract

In 2000 the International Monetary Fund (IMF) launched a project on “Financial Soundness Indicators” (FSI), dedicated towards enabling researchers to assess and compare the soundness of financial systems of various countries. The IMF proposed two subsets of indicators: core and encouraged sets. The core set encompasses 12 indicators (see table below) measuring the areas of deposit takers’ soundness. These core indicators were intended to be delivered by all countries participating in the project. The encouraged set comprises 28 indicators: 13 for deposit takers, 2 for other financial corporations, 5 for nonfinancial corporations, 2 for households, 2 for market liquidity and 4 for real estate markets.

Financial Soundness Indicators: The Core and Encouraged Sets

	Core Set
Deposit takers	
<i>Capital adequacy</i>	Regulatory capital to risk-weighted assets Regulatory Tier 1 capital to risk-weighted assets Nonperforming loans net of provisions to capital
<i>Asset quality</i>	Nonperforming loans to total gross loans Sectoral distribution of loans to total loans
<i>Earnings and profitability</i>	Return on assets Return on equity Interest margin to gross income Noninterest expenses to gross income
<i>Liquidity</i>	Liquid assets to total assets (liquid asset ratio) Liquid assets to short-term liabilities
<i>Sensitivity to market risk</i>	Net open position in foreign exchange to capital
	Encouraged Set
Deposit takers	Capital to assets Large exposures to capital Geographical distribution of loans to total loans Gross asset position in financial derivatives to capital Gross liability position in financial derivatives to capital Trading income to total income Personnel expenses to noninterest expenses Spread between reference lending and deposit rates

	Spread between highest and lowest interbank rate
	Customer deposits to total (non-interbank) loans
	Foreign-currency-denominated loans to total loans
	Foreign-currency-denominated liabilities to total liabilities
Other financial corporations	Net open position in equities to capita
	Assets to total financial system assets
	Assets to gross domestic product (GDP)
Nonfinancial corporations sector	Total debt to equity
	Return on equity
	Earnings to interest and principal expenses
	Net foreign exchange exposure to equity
	Number of applications for protection from creditors
Households	Household debt to GDP
	Household debt service and principal payments to income
Market liquidity	Average bid-ask spread in the securities market
	Average daily turnover ratio in the securities market
Real estate markets	Real estate prices
	Residential real estate loans to total loans
	Commercial real estate loans to total loans

Georgia is by now a full member of a number of international statistical initiatives:

- Special Data Dissemination Standard (SDDS), since May 2010, alongside with National Statistics Office of Georgia and Ministry of Finance
- International Reserves and Foreign Currency Liquidity Template, since April 2010
- Financial Soundness Indicators (FSI), since April 2012

The project member countries disseminate FSIs on different certain frequency basis. Today, about 74 countries report FSIs to the IMF, which disseminates the data on its website. Currently NBG disseminates 12 core and 17 encouraged indicators (Box 4).

Box 4: National Bank of Georgia's (NBG) Data Dissemination Practice

After the NBG's participation in the International Monetary Fund's (IMF) Financial Soundness Indicator (FSI) project in 2010, the NBG went through a series of preparatory works, which included compiling, analyzing and systematization of financial indicators to conform with appropriate metadata and acceptable international standards. As of June 2014, the NBG submitted 12 core indicators and 17 encouraged indicators to the IMF for public dissemination through the IMF FSIs website. These indicators are:

1. For deposit takers

- Capital to assets
- Geographical distribution of loans to total loans
- Gross asset position in financial derivatives to capital
- Gross liability position in financial derivatives to capital
- Trading income to total income
- Personnel expenses to noninterest expenses
- Spread between reference lending and deposit rates
- Spread between highest and lowest interbank rate
- Customer deposits to total (non-interbank) loans
- Foreign-currency-denominated loans to total loans
- Foreign-currency-denominated liabilities to total liabilities
- Net open position in equity to capital.

2. For nonfinancial corporations

- Number of applications for protection from creditors

3. For market liquidity

- Average bid-ask spread in the securities market
- Average daily turnover ratio in the securities market

4. For real estate markets

- Residential real estate loans to total loans
- Commercial real estate loans to total loans

NBG is the only designated agency to compile FSIs for Georgia and has the legal authority to collect financial information from financial institutions. However, bilateral and multilateral arrangements for collaboration on data issues are maintained with other data producing agencies and international organizations to obtain more data for nonfinancial sectors of the economy in order to produce the full range of FSIs.

7.2 Core Set of FSIs

7.2.1 Capital adequacy

Capital adequacy ratios reflect solvency of the Georgian banking sector. These indicators show how much is the loss absorbency of Georgian commercial banks. The presence of Basel 1 standards creates comparability issues across countries. It is recommended that FSIs will soon be based on Basel II/III methodology; the implementation is under way. Non-performing loans as a percentage of capital show the potential loss extent from loan impairment. As long as major shocks stem from loan portfolio quality, these indicators well reflect the local banking sector's loss absorbency capacity.

7.2.1.1 *Regulatory capital to risk-weighted assets*

To calculate the index, sector-wide regulatory capital should be the numerator and sector-wide risk-weighted assets should be the denominator. IMF guidance gives the Basel II definition of capital.

To derive sector-wide regulatory capital, the consolidated regulatory capital of the deposit-taking groups in the reporting population is aggregated. To derive sector-wide risk-weighted assets, the consolidated risk-weighted assets of the deposit-taking groups in the reporting population are also aggregated.

As per IMF's recommendation, an aggregate measure of capital adequacy potentially disguises information on individual institutions, and thus for macro prudential analysis it is useful to supplement the aggregate ratio with information on the dispersion of ratios for individual institutions or subsectors of the banking system. NBG publishes information on individual regulatory capital adequacy ratios on a quarterly basis on its website.

It should be noted that NBG's capital requirements are not currently based on Basel II standards; however, starting next year it plans to make the transition toward Basel II. The NBG current requirements are based on Basel I standards, subject to some differences. NBG's capital adequacy standards mandate higher quality core capital and ratios that are more conservative than relevant BIS (Basel I) requirements. NBG risk weights assets for currency induced credit risk. In addition, this risk weight has been changing over time for supervisory policy purposes. In line with the countercyclical prudential policy, during the recession NBG lowered the above mentioned risk weights from 100% to 50% percent. The required risk weight for foreign currency induced credit risk went up to 75% from January 2011. Additionally, the regulation does not permit lower risk weighting for mortgages or the inclusion of the revaluation reserves of a bank's own premises in the calculation of regulatory capital. All of the above effectively raises the prudentially-mandated ratio well above the corresponding BIS (Basel I) requirement.

For comparability purposes it should also be noted that the requirement on the Tier 1 capital to comprise at least 50% of the regulatory capital gives the wrong picture about the total regulatory capital ratio, with a downward bias. This should be accounted for in further research.

It is worth mentioning that Georgia stands out among other countries for having very conservative loan valuation standards, which, at times, can have a significant impact on the capital adequacy ratio.

NBG collects data that are based on the local regulation standards mentioned above. Individual ratios are published quarterly by bank on the NBG website. The “Regulatory Capital Adequacy Ratio” is the corresponding system-wide ratio in the “Financial Soundness indicators” document on NBG website. The available series are for the October 2002 – September 2012 period.

The dispersion analysis is not published by NBG, but can be derived from available individual data. Our future research will provide such analysis.

It should also be noted that the data does not include capital and risk weighted assets of deposit taking credit unions, as these institutions are not obliged to perform such calculations. Given the small size of the non-bank deposit taking institutions, omission of this data should not have any material impact on the aggregated ratio.

7.2.1.2 Regulatory Tier 1 Capital to Risk-Weighted Assets

To calculate the index, sector-wide Tier 1 regulatory capital should be the numerator and sector-wide risk-weighted assets should be the denominator. IMF guidance gives the Basel II definition of Tier 1 capital.

NBG collects all necessary data but the figures are based on local regulation that complies more with Basel I, rather than Basel II standards. This ratio is published quarterly bank by bank on the NBG website. The data on the IMF website includes the necessary data.

Besides the comparability issues as discussed in the “Regulatory capital to risk-weighted assets” paragraphs above, the components of Tier 1 capital pose some additional comparability issues. In particular, Tier 1 capital includes only the retained earnings of the previous years, while the current year’s profits (or losses) are excluded (see the Regulation on Capital Adequacy Requirements for Commercial Banks). This could have either an upward or downward bias or could result in a rather sharp jump at the end of the year when retained earnings are affected by profits (or losses).

It should also be noted that the data does not include capital and risk weighted assets of deposit taking credit unions, as these institutions are not obliged to perform such calculations. Given the small size of the non-bank deposit taking institutions, omission data on them must not have any material impact on the aggregated ratio.

7.2.1.3 Nonperforming Loans Net of Provisions to Capital

This FSI is calculated by taking the value of Nonperforming loans (NPLs) less the value of specific loan provisions as the numerator and capital as the denominator. The compilation guide by the IMF relies on national practices in identifying specific provisions²⁷.

Non-performing loans are calculated based on the regulation on “asset classification and the creation and use of reserves for losses by commercial banks”²⁸. According to the regulation, loans are classified in 5 categories: standard, watch, substandard, doubtful, and loss. Two percent (2%) of general provisions are created upon the origination of the loan. Specific provisions (10%, 30% and 50%) are created respectively on loans in different classes. Loss loans are written off the balance. It should be noted that the provisioning rules of NBG are much more conservative than the ones based on IMF guidance.

However, for the purposes of publishing financial soundness indicators, NBG specifically collects data on loans that are overdue for more than 90 days, and specific provisions are created against them. IMF data also contains this information. It should be noted that it is recommended that NBG uses loan loss provisions based on local asset classification standards. Such data will be used during further research done as it is available from different data files on the NBG website. The data based on local asset classification standards is also available on the NBG website.

It should be noted that local accounting standards classify as loans only their principal amount, which is different from carrying amount of loans as per IFRS (International Financial Reporting Standards). However, when loans are past due for more than 90 days, no interest should be accrued on them based on local accounting, which gives assurances that such calculations would not raise concerns over potential misstatements.

The 45th footnote to 4.62 paragraphs of the FSI compilation guide mandates that investments in other deposit takers, which are also in the reporting population, should be excluded from capital and reserves. It is recommended that NBG at least deducts from capital investment in non-consolidated commercial banks. However, this would result in just one deduction. Further analysis is needed here.

The “capital” data that is compiled in IMF metadata is a simple accounting measure of capital without any adjustments based on local accounting standards.

7.2.2 Asset Quality

Nonperforming loans to total gross loans reflect asset quality problems in the local market. One should be warned that they are only based on overdue days; the amount could significantly differ across countries, although comparability is rather easier in this case. The indicator shows what loss one should expect from the current portfolio of commercial banks. It reflects the repayment ability of the prevailing customers to commercial banks. High level of non-performing loans can

²⁷<http://www.imf.org/external/pubs/ft/fsi/guide/2006/pdf/appendix.pdf>

²⁸http://www.nbg.ge/uploads/legalacts/supervision/nbg1.4.5.1regulation_on_assetseng.pdf

be the result of high risk appetite as well as fundamental macroeconomic factors. Sector distribution is an additional parameter of concentration measure; however beyond the commercial sector, Georgian banks are not largely exposed to different sectors.

7.2.2.1 Nonperforming Loans to Total Gross Loans

This FSI is calculated by using the value of NPLs as the numerator and the total value of the loan portfolio (including NPLs and before the deduction of specific loan loss provisions) as the denominator. Data on loans should exclude accrued interest on nonperforming loans and lending among deposit takers in the reporting population that are part of the same group.

In the numerator, NBG compiles the value of loans overdue for more than 90 days before the deduction of specific provisions. The amount of total gross loans is also compiled in IMF data. However, it is not clear whether these loans exclude or not lending among Georgian commercial banks. As mentioned throughout the discussion of the previous indicator, non-performing loans in the FSI document are based on local accounting standards. This would be clarified in further analysis.

7.2.2.2 Sectoral Distribution of Loans to Total Loans

The data is compiled in the IMF website as per IMF guidance.

7.2.3 Earnings and profitability

These indicators provide insights to the efficiency of local commercial banks. On the one hand rather high levels of return on assets and equity make the local market attractive; however, they reflect the risks inherent to activities in the local market. They should help data consumers draw conclusions on the structure of income and expenses, in particular whether interest income is the main source of income which in its turn is a more sustainable model. Additionally FSIs show the magnitude of non-interest expenses that shows operational efficiency of commercial banks. The latter indicator should be analyzed with care because a rather small operational efficiency could be caused by the size of the local banking sector.

7.2.3.1 Return on assets

Data is available both for the numerator and the denominator. However, it should be noted that accrual of interest on nonperforming assets is not recorded separately from other interest and related income, which should not be included in interest income as per IMF guidance.

It should also be noted that loan loss provisions are based on local accounting standards, which has an impact on the indicator of interest but not on a longer time horizon for loans.

The monthly data is available on the NBG website in the “Assets and Liabilities of the Commercial Banks” and “Financial aggregates of commercial banks’ activities” documents. Monthly data takes averages of equity at the beginning of the given year and for the current date. Data is compiled in the IMF data file as well.

It is recommended that NBG separates interest accrual on non-performing loans from the rest of interest income.

7.2.3.2 Return on equity

Data is available both for the numerator and the denominator. However, it should be noted that accrual of interest on nonperforming assets is not recorded separately from other interest and related income and should not be included in interest income as per IMF guidance. Monthly data takes averages of equity at the beginning of the given year and for the current date. Such data is compiled in the IMF data file as well.

It is recommended that NBG separates interest accrual on non-performing loans from the rest of interest income.

7.2.3.3 Interest margin to gross income

The indicator is calculated as net interest income divided by gross income.

Interest income should not include the accrual of interest on nonperforming assets, because otherwise net interest income would be overstated relative to the actual interest-earning capacity of the deposit taker.

Data is available both for the numerator and the denominator. Gross income is the sum of interest and non-interest income. As per IMF guidance, it includes both realized and unrealized gains and losses arising from all financial instruments and excludes equity in associates, subsidiaries and any reserve equity investments.

Provisions for interest accrual on nonperforming assets should be deducted from gross interest income to eliminate the interest accruing on nonperforming assets in the interest income line.

Noninterest income is all other income received by the deposit taker, including fees and commissions from the provision of services, and gains and losses on financial instruments. Net interest income together with noninterest income is equal to gross income.

Net interest income has already been discussed in the above paragraphs. The data is available on a monthly basis. This index is compiled on the IMF website.

7.2.3.4 Noninterest expenses to gross income

This FSI measures non-interest expenses to gross income.

Noninterest expenses cover all expenses other than interest expenses, including fees and commissions. They include operating expenses relating to ordinary banking business (other than interest expenses) such as (1) personnel (or staff) costs (see below); (2) expenses for property and equipment (ordinary and regular maintenance and repair), rentals paid on buildings, other structures and equipment (and related depreciation), and rents paid on land; (3) other

expenditures related to operations, including purchases of goods and services (for example, advertising costs, staff training service expenses, and fees for other services provided), and royalties paid for the use of other produced or non-produced assets (excluding those expenses classified as personnel costs (see below)); and (4) taxes other than income taxes—such as taxes on the ownership or use of land and buildings or on labor employed (including payroll and other employee-related taxes payable by the employer)—less any subsidies related to operating activity, such as subsidies received from general government. Also included are any fines and penalties imposed on deposit takers by courts of law or otherwise, and any amounts payable by deposit takers as compensation to other institutional units for injury and damage. For deposit takers, operating expenses also include any premiums paid to a deposit insurance fund.

NBG reporting complies with IMF guidelines. Data is available both for the numerator and the denominator. Non-interest expenses can be found in the “Financial aggregates of commercial banks’ activities” document and on the IMF website. Gross income is given in the same document under the “income” column.

The data are compiled on the IMF website.

7.2.4 Liquidity

Liquidity is an important soundness indicator because when problems arise with liquidity risk, it has implications on other risks as well and on the sector generally. The two indicators that Georgia compiles can help draw conclusions on how liquid assets of commercial banks are. One should be warned that the calculation needs further improvement though it gives a broad view on the liquidity levels.

7.2.4.1 *Liquid Assets to Total Assets (liquid asset ratio)*

The indicator measures liquid assets to total assets. It is calculated by using the core measure of liquid assets as the numerator and total assets as the denominator. This ratio can also be calculated using the broad measure of liquid assets.

Liquid assets are those assets that are readily available to an entity to meet a demand for cash. In the FSI guide, liquid assets comprise: (1) currency; (2) deposits and other financial assets that are available either on demand or within **three months or less** (although deposit takers’ deposits and other non-traded claims with other deposit takers included in the reporting population are excluded); and (3) securities that are traded in liquid markets (including repo markets) that can be readily converted into cash, with insignificant risk of change in value under normal business conditions. Typically, securities issued by the government and/or the central bank in their own currency meet the criteria to be classified as liquid assets. A number of markets for high credit-quality private securities—both debt and equity securities—also meet the criteria. The instruments in (1) and (2) above can be classified as **core** liquid assets, while the instruments in (3) can be added to provide a **broad** measure of liquid assets.

Deposit takers’ deposits (and other non-traded claims) with other deposit takers in the reporting population are excluded.

“The Regulation on Supervision and Regulation of the Activities of Commercial Banks”²⁹ defines liquid assets as follows:

“Liquid Assets” – cash items and the assets that have the ability and possibility to be readily (rapidly) converted into cash. Calculation of "Liquid Assets" shall include the amounts on the balance sheet accounts NN 1003, 1004, 1005, 1006, 1013, 1014, 1015, 1016, 1018, 1051, 1052, 1061, 1062, 140, 141, 1502, 1512, 1702, 1703, 1712, 1713, 1722, 1723, 1732, 1733 (Cash - Commercial Bank; Cash in ATM; Cash in Outside Offices; Bank Notes and Coins in Transit; Other Payment Documents; Statutory Reserves of Commercial Banks With the NBG; Correspondent Accounts With the NBG; Government Debt Securities in Local Currency; Government Debt Securities; Correspondent Accounts "Nostro" in Non-resident Commercial Banks; Correspondent Accounts "Nostro" in Resident Commercial Banks Term Deposits in Non-resident Commercial Banks; Term Deposits in Resident Commercial Banks). Furthermore, the calculation of liquid assets shall include the total amount of government securities and the NBG deposit certificates not exceeding 10% of the amount of the bank’s “liabilities” determined by this Regulation. The calculation of liquid assets shall not include: debt securities issued by the OECD non-member governments and/or central banks on the balance sheet accounts NN 141 and 1512, the amounts on blocked correspondent accounts, adversely classified inter-bank deposits, the amount of minimum reserves placed with the National Bank of Georgia or its portion, which is pledged against a credit taken by a commercial bank”.

Such a definition does not comply with the one of the IMF. The components of liquid assets disclosed on the IMF website are not clear.

NBG needs to more thoroughly reconsider what should be included in the core measure of liquid assets. It should be comprised of cash and deposits and other financial assets excluding securities with less than three months maturity and claims on other domestic banks. NBG collects all necessary data for compiling the given index of interest.

IMF also recommends that distinguishing between foreign and domestic currency-denominated liquid assets can be important, particularly in periods of financial stress.

As long as Georgia remains a dollarized economy, it remains very important to disclose foreign currency and domestic currency denominated liquid assets.

As of now, we need to analyze the figures that are given on the IMF website.

7.2.4.2 Liquid Assets to Short-term Liabilities

This FSI measures liquid assets to short-term liabilities. It is calculated by using the core measure of liquid assets as the numerator and the short-term liabilities as the denominator. This ratio can also be calculated by taking the broad measure of liquid assets.

²⁹http://www.nbg.ge/uploads/legalacts/supervision/nbg1.4.5.1regulation_of_the_activities_eng.pdf

Short-term liabilities are the short-term element of deposit takers' debt liabilities and the net (short-term, if possible) market value financial derivatives position (liabilities less assets); the definition excludes such liabilities to other deposit takers in the reporting population. Preferably "short term" should be defined on a remaining maturity basis, although original maturity is an (albeit more limited) alternative.

The measurement issues for liquid assets have been discussed in the above paragraphs.

Data on short-term liabilities on the IMF website apparently comprises short-term liabilities of commercial banks excluding claims on other domestic banks.

7.2.5 Sensitivity to Market Risk

Net open position in comparison with capital shows what volume of assets is vulnerable to foreign exchange (FX) volatility as a percentage of capital. One needs to take into consideration that although the given FSI might seem sound, its comfortable level would usually result in uncomfortable push on the size of the credit risk because of disbursing FX denominated loans to unhedged customers.

7.2.5.1 Net Open Position in Foreign Exchange to Capital

The index is calculated as net open position in foreign exchange to capital. A deposit taker's open position in foreign exchange should be calculated by combining the foreign currency positions into a single unit of account as the numerator. Capital is the denominator.

Foreign currency items are both those payable (receivable) in a currency other than the domestic currency (foreign-currency-denominated) and those payable in domestic currency but with the amounts to be paid linked to a foreign currency (foreign-currency-linked). Foreign currency positions should be converted into the unit of account using the midmarket spot exchange rate of the reporting date.

Deposit takers' net open position is the sum of the net position in on-balance-sheet foreign currency debt instruments; net notional positions in financial derivatives; on-balance-sheet holdings of foreign currency equity assets; net future foreign currency income and expenses not yet accrued but already fully hedged; foreign currency guarantees and similar instruments that are certain to be called and are likely to be irrecoverable; and, depending on the national commercial accounting practice, any other item representing profit/loss in foreign currencies of the foreign currency positions set out in a single unit of account. The FSI guide describes the sum of the first three items listed above as the "net open position in foreign exchange for on-balance-sheet items."

As per "Regulation Setting, Calculating and Maintaining Overall Open Foreign Exchange Position Limit of Commercial Banks"³⁰, foreign exchange position shall represent the difference between the bank's assets and liabilities formed in foreign exchange. When calculating the consolidated foreign exchange position, all reported assets existing in foreign exchange and the sum of foreign

³⁰http://www.nbg.ge/uploads/legalacts/supervision/nbg1.4.5.1regulation_settingeng.pdf

exchange contracts on purchase of the same foreign exchange shall be included in assets of each foreign exchange, while in liabilities, all reported liabilities existing in foreign exchange and the sum of foreign exchange contracts on sale of the same foreign exchange.

Such a definition gives only a limited breakdown of the overall open currency position.

The data on the IMF website discloses the overall open currency position.

7.3 Encouraged FSIs

7.3.1 Deposit Takers

Encouraged FSIs could show some additional insights into the soundness of the local financial sector. In particular Capital to assets is rather a simplified leverage ratio and its comparability with that of the peer countries could be much easier and straightforward. Credit risk concentration is reflected in “Large exposures to Capital FSI”. For small economies like Georgia, concentration risk is much more significant, thus it should be analyzed in parallel with asset quality FSIs to draw conclusions on the size of potential loss on its portfolio. Regional distribution of assets is less relevant to the local sector at the moment due to very limited portion of portfolio that is lent outside. This indicator gives the insight that some fundamental factors are preventing Georgian banks to lend abroad which could well be caused by the rather high interest rates even internally. The other indicators show how extensively Georgian banks use hedging instruments (derivatives) and generate income from trading. They both show immaterial involvement in hedging and trading activities. Interest rate spreads are largely perceived to reflect monopolization level in the markets. However it can be quite misleading for the Georgian case as long as competition is demonstrated to be quite high though interest rate spreads are very significant in comparison with other countries. One needs to look at the pricing breakdown in order to explain interest rate spreads. Encouraged FSIs contain very important indicators due to the significance of foreign currency induced credit risk in the local market.

7.3.1.1 Capital to Assets

The data is available for both the numerator and the denominator. Accounting definition of capital is used rather than regulatory capital.

7.3.1.2 Large Exposures to Capital

The FSI guide sets out three approaches to defining this FSI at the sector level:

- The total number of large exposures of deposit takers that are identified under the national supervisory regime.
- Total exposure of the five (or about five, depending on national circumstances) largest deposit takers to the five largest, by asset size, resident entities (including all branches and subsidiaries) in both the other financial corporations sector and the nonfinancial corporations sector, in addition to the exposure to the general government, as a percentage of the five largest deposit takers' capital.

- Total exposures of deposit takers to affiliated entities and connected counterparties as a percentage of capital.

Georgia does not compile the given indicator. Although the data must be available to NBG as per the requirements of the “Regulation On Credit Concentration and Large Risks in Commercial Banks”. However, it should be noted that Georgia has a more conservative approach towards defining large exposures. In particular, it defines, “Large Loans and Other Liabilities” as loans and other obligations issued by the banks to a person or a group of interconnected borrowers in the amount exceeding 5 % of the bank’s regulatory capital. The ratio is two times smaller than the globally accepted practice of 10%.

7.3.1.3 Geographical Distribution of Loans to Total Loans

This FSI provides information on the geographic distribution of gross loans, by region. Georgia compiles the required data on the IMF website.

7.3.1.4 Gross Asset Position in Financial Derivatives to Capital

The FSI is calculated by using the market value of financial derivative assets as the numerator, and accounting measure of capital as the denominator.

The data is compiled on the IMF website.

7.3.1.5 Gross Liability Position in Financial Derivatives to Capital

The FSI is calculated by using the market value of financial derivative liabilities as the numerator, and accounting measure of capital as the denominator.

The data is compiled on the IMF website.

7.3.1.6 Trading Income to Total Income

This FSI is calculated by using gains or losses on financial instruments as the numerator and gross income as the denominator.

Gains and losses on financial instruments are those arising during the period under review. The FSI guide encourages the inclusion in this item of realized and unrealized gains and losses arising during each period on all financial instruments (financial assets and liabilities, in domestic and foreign currencies) valued at market or fair value on the balance sheet, including investment account securities but excluding equity in associates, subsidiaries, and any reverse equity investments. Gains and losses on foreign exchange instruments and on financial derivative instruments, such as interest rate swaps, are also included. Gains and losses on financial instruments exclude any interest included in the net interest income account as accrued for that instrument in the reporting period, as such amounts have been already accounted for in the income account as interest income.

It is supposed that NBG has compiled the data in accordance with the guidance because the local accounting gives the possibility of separating all necessary items. This would be investigated in further research.

7.3.1.7 Personnel Expenses to Noninterest Expenses

Personnel costs include the total remuneration, in cash or in kind, payable by the enterprise in return for work done by employees during the accounting period. Included are wages and salaries, including paid annual leave and paid sick leave; profit sharing and bonuses; allowances for housing and cars; as well as free or subsidized goods and services (except those required for employees to carry out their work); and social security contributions, for such items as medical care and pensions. Also included are unfunded employee social insurance benefits such as the continued payment of normal or reduced wages during periods of absence from work as a result of ill health and accidents, redundancy payments, and so on.

Data on personnel expenses are collected and compiled in accordance with the IMF guidance.

7.3.1.8 Spread between Reference Lending and Deposit Rates

The Guide recommends at a minimum the calculation of the weighted average of all lending and deposit interest rates (excluding intra-sector loans and deposits) during a reference period in the portfolio of resident deposit takers.

The data is compiled on the IMF website. The average on all deposits and loans are compared; however they do not exclude loans to domestic commercial banks, which could have only a minor impact.

7.3.1.9 Spread between Highest and Lowest Interbank Rate

As per IMF guidance, NBG compiles the spread between highest and lowest interbank rate.

7.3.1.10 Customer Deposits to Total (non-interbank) Loans

The Guide recommends that the type of depositor be the primary factor in defining customer deposits because of both its relevance and its general applicability. Thus, customer deposits include all deposits (resident or nonresident) except those placed by other deposit takers and other financial corporations (resident and nonresident).

NBG collects data on total deposits and interbank deposits from commercial banks and only total claims to the banks and non-bank depository corporations from non-bank depository institutions, meaning that the exact measure of the indicator cannot be derived. However, it should be noted that even the total amount of claims to the banks and non-bank depository corporations of credit unions (which are the only non-bank depository institutions) is immaterial. As of the second quarter of 2012, it equaled 7,220 GEL (see "Assets and Liabilities of the Non-Bank Depository

Corporations” data file³¹). Thus the figures that are put in the IMF data by NBG (total deposits, excluding inter-bank deposits) are essentially an exact measure.

The data on deposits includes the following items (see, Deposits [Methodological notes] document³²):

Deposits are the sums of money or securities placed on storage in a bank on behalf of physical or legal entities. The bank pays to the client a certain percent for use of these means in the investment and credit activity. In the banks’ reporting, it is reflected as a liability.

Demand deposits are bank deposits which can be withdrawn by the owner without a preliminary notice. These are broken down to current accounts and other demand deposits:

- Current accounts – bank accounts from which funds can be withdrawn by the owner without preliminary notice; these bank accounts are intended for current operations on behalf of clients.
- Other demand deposits – include given guarantee deposits, deposit accounts for check-books, deposit accounts for bank cards, deposit accounts for letters of credit and deposit accounts for other payment documents.
- Deposit accounts for guarantees - accounts used for funds that represent securities for guarantee payment.
- Deposit accounts for bank cards – accounts which are used for deposition and recovery of funds by legal entities and individuals and for payment by different means.
- Deposit accounts for check-books – accounts that allow a depositor to write checks which can be immediately cashed at the bank.
- Deposit accounts for letters of credit – accounts that certify the right of a legal entity or an individual to receive the amount of money indicated in the letter of credit.
- Time deposits-- include deposits that have a maturity specified by a contract and are charged by the bank.
- Letter of credit – payment document by means of which one bank gives an order to another bank to carry out payment for provided goods or services with funds reserved in advance.

Banks separately record loans received under local Generally Accepted Accounting Principles (GAAP). However, local GAAP only records loans received from government in local currency; loans and advances from banks in local currency; loans and advances from the NBG; loans and advances from financial institutions. If, theoretically, there are any loans from individuals or corporate entities, they would probably fall under deposits.

³¹<http://nbg.gov.ge/index.php?m=306&lng=eng>

³²<http://nbg.gov.ge/index.php?m=306&lng=eng>

7.3.1.11 Foreign-currency-denominated Loans to Total Loans

This FSI measures the relative size of foreign currency loans within gross loans. It is calculated by using the foreign currency and foreign-currency linked part of gross loans to residents and nonresidents as the numerator, and gross loans as the denominator.

NBG collects all relevant data. There is no practice among Georgian banks to grant foreign currency linked loans, which eliminates the possibility of arriving at wrong figures.

7.3.1.12 Foreign-currency-denominated Liabilities to Total Liabilities

This FSI measures the relative importance of foreign currency funding within total liabilities. This FSI is calculated using the foreign currency liabilities as the numerator and total debt plus financial derivative liabilities less financial derivative assets as the denominator.

NBG collects all relevant data. There is no practice among Georgian banks to grant foreign currency linked loans which eliminates the possibility of arriving at wrong figures.

NBG data on IMF website does not include financial derivatives, which could have some but not any material impact on the derived ratios.

7.3.1.13 Net Open Position in Equities to Capital

This is calculated by using deposit takers' open position inequities as the numerator and capital as the denominator. The open position should be calculated as the sum of on-balance-sheet holdings of equities and notional positions in equity derivatives. Capital is measured as capital and reserves.

NBG collects the necessary data. There are no equity derivatives on the balance sheet of Georgian banks.

7.3.2 Other Financial Corporations

Encouraged FSIs for non-bank financial institutions are used to measure the depth, complexity and institutional diversification of the local financial sector which increases with the development of the local economy and the sector. Peer analysis would show what is the typical room for institutional diversification that could channel saved resources to customers.

7.3.2.1 Assets to Total Financial System

The numerator is other financial corporations' financial assets and the denominator is total financial system assets. The latter is the total of financial assets owned by deposit takers, other financial corporations, nonfinancial corporations, households, the general government, and the central bank.

According to the law on National Bank of Georgia, NBG supervises representatives of the financial sector that include: a commercial bank, non-bank depository institution, insurance undertaking, reinsurance undertaking, brokerage company, independent registrar of securities, asset managing company, central depository, specialized depository, stock exchange, microfinance organization, founder of non-state pension scheme, insurance brokerage company, accountable company, qualified credit institution, money transfer agent, currency exchange points.

Besides, the civil code allows every person the right to grant credits. This implies that not all individuals/entities are obliged to register at NBG to be allowed to run credit granting business.

It should also be mentioned that high standard financial reporting is only performed by the commercial banks and by some microfinance organizations and credit unions. This means that the exact measure of this indicator as of now cannot be derived.

Because of the reasons mentioned above, NBG does not compile the given FSI; however it plans to compile approximate measures in the nearest future.

7.3.2.2 Assets to Gross Domestic Product

Other financial corporations' financial assets are the numerator and GDP is the denominator.

The data is not compiled by NBG for the reasons mentioned above on the previous FSI.

However, NBG plans to compile approximate measure in the nearest future.

7.3.3 Nonfinancial Corporations

The Georgian Statistics Office conducts the nonfinancial corporations survey, which comprises the quarterly statistical survey of enterprises, the annual statistical survey of enterprises (for legal persons), and the annual statistical survey of individual enterprises. However, the survey does not include information for compiling the nonfinancial corporations' FSIs. The databases are processed quarterly using the format required for the System of National Accounts (SNA), which represents a basis for calculation of total output by 45 types of activities, considering the non-observed economy.

In November 2013, a joint activity between ADB, NBG, GeoStat and ISET was designed to compile and estimate FSIs indicators for nonfinancial corporations, other financial corporations and households. A questionnaire was developed to conduct the survey for the three sectors either separately or integrated with the ongoing activity of the national statistics office. The detailed discussion of the initiatives is discussed in Appendix 5.

7.3.3.1 Total Debt to Equity

This FSI is a measure of corporate leverage - the extent to which activities are financed through liabilities other than own funds.

For compiling the index the debt data of nonfinancial (as numerator) and, capital and reserves (as denominator) are needed. In practice, both the numerator and denominator should be available from the published corporate financial statement and aggregate. In measuring the sector wide capital, all intra-sector equity investments should be deducted in order not to double count the values of some equities. The same logic is implemented for debt counting.

As mentioned before, the data from nonfinancial corporations is not available but the rough approximation of the debt variable can be derived. The data on loans of legal persons (which are nonfinancial corporations) excluding the interbank loans from commercial banks is available from NBG. The rough estimator of nonfinancial debt to micro-finance organizations and credit unions can be derived as well on a quarterly basis. But the result will have a significant deviation from the real parameters.

7.3.3.2 Return on Equity

This FSI is commonly used to capture nonfinancial corporations' efficiency in using their capital.

The FSI is calculated by using earnings before interest and tax as the numerator and the average value of capital and reserves over the same period as the denominator. At a minimum, the denominator can be calculated by taking the average of the beginning- and end-period positions (for example, at the beginning and the end of the month), but compilers are encouraged to use the most frequent observations available in calculating the average.

From the survey mentioned above, the numerator of the ratio is available from the Business Statistics department of GeoStat.

7.3.3.3 Earnings to Interest and Principal Expenses

This FSI measures nonfinancial corporations' capacity to cover their debt-service payments (interest and principal).

The FSI is calculated by using earnings (net income) before interest and tax (EBIT) plus interest receivable from other nonfinancial corporations as the numerator and debt-service payments over the same period as the denominator.

The debt-service payment to commercial banks is available from NBG on a monthly basis. The approximation of debt-service payments to micro-finances and credit unions can be derived as well. But again, result will have a significant deviation from the real parameters.

As for the numerator, the business survey aggregates the non-operational revenues and the interest receivables are not singled out.

7.3.3.4 Net Foreign Exchange Exposure to Equity

This FSI measures nonfinancial corporations' exposure to foreign currency risk compared with their capital. The more exposed to foreign currency risk, the more significant currency depreciation could put severe pressure on the financial soundness of nonfinancial corporations and, in turn, on deposit takers.

The ratio is calculated by net foreign exchange exposure as a numerator and the capital and reserves as denominator. The open position is calculated the same way as in the deposit takers' case.

The net foreign exchange exposure data (on/off-balance sheet) should be separately requested, as it is not available from the national accounts data.

7.3.3.5 Number of Applicants from Protection from Creditors

This FSI is a measure of bankruptcy trends and is influenced by the nature of bankruptcy (and related) legislation and the degree of its implementation. It is a simple numerical addition of those resident nonfinancial corporations that have filed for protection from creditors during the period.

According to Georgian legislation, in particular law on bankruptcy proceedings, every debtor has the right to initiate bankruptcy of the debtor when the latter is unable to repay liabilities due. NBG collects the data on bankruptcy proceedings of non-financial corporations from external sources and compiles the necessary data on the IMF website.

7.3.4 Households

Household indebtedness is an important measurement of the repayment capability of the local population which has direct implication on the credit risk of commercial banks and thus soundness of the local financial sector. At the same time, it shows the depth of the local financial sector and gross potential. Debt to GDP indicator is important to be analyzed together with the Household debt service and principal payments to income indicator as the former might mislead one like it does in the Georgian case. Even though the former indicator is quite low as compared to developed countries, due to low maturities and high interest rates, debt burden of the population is quite high.

7.3.5 Household Debt to GDP

This FSI is a measure of the overall level of household (HH) indebtedness as a share of GDP. The HH debt is defined as total loans of HHs plus other liabilities. The loans are commonly associated with the consumer loans and mortgages.

The data for HH debt is not available. The commercial banks data for total HH loans are available. But it does not contain all the information about HH loans. Loans from micro-financial organizations, credit unions, and physical persons is the other part of the lending market that should be considered in the process of accounting the total loans. NBG collects the information from credit unions and micro-financial organizations, but not all of them report their assets and liabilities in the manner of loan decomposition, or incomes received from consumer loans as interest.

In their “Financial Stability Report”, NBG monitors the total consumer loans volume, which is not an exact measure of the increased risk from borrowers. Nominal volumes of loans themselves do not tell the story about HH loan booms or declines unless they are adjusted by the total income/expenditure (GDP). Relative changes in the ratio of consumer loans to GDP capture the real volatility of the HH behavior.

To estimate the total debt of HHs, the supervision department of NBG needs to collect the information from micro-financial organizations, pawnshops and other players in the financial market more accurately. An alternative way for measuring HH debt is the selective survey of HHs. That is to survey those HHs with having credits.

Based on the data available at present we can find the rough debt estimate. Data from commercial banks, credit unions and micro-financial institutions can be used to evaluate the total volume of debt of HHs. From interviews with relevant experts further research might provide the estimates about other liabilities of households.

7.3.5.1 Household Debt Service and Principal Payments to Income

This FSI measures the capacity of households to cover their debt payments (interest and principal). It is calculated by using household debt-service payments as the numerator and gross disposable income over the same period as the denominator.

The household debt service and principal payment data is not available from the NBG public database. However, data on commercial bank creditors’ debt to income ratios must be available to supervisions purposes. However, there is a part of the population with poor financial strength that are only able to borrow from non-bank financial institutions.

The average Georgian household’s income is estimated based on the “Integrated Household Survey”³³ conducted on a quarterly basis. Under this survey, about 3,000 households are covered each quarter, with 25% of the sample being rotated quarterly. The annual values of the income variable from the survey are much more reliable than those calculated on a quarterly basis. There are two main reasons for this. One reason is that sample size is four times larger when calculating the values on an annual basis. The second reason is that the survey asks about the last three months of income/expenditure to a HH so that the answer covers not only the current quarter, but the previous quarter as well and excludes seasonal deviations.

The ways of improving the index are the following:

- Since the income is not very volatile from month-to-month, on average the monthly incomes of HHs can be derived from the data available from GeoStat.
- According to the IMF recommendations, there should be income and expenditure statements, balance sheet, and other memorandum series in more detail for HHs of the compiler country³⁴. The current survey does not include enough information. Considering

³³ See the link: <http://geostat.ge/index.php?action=meurneoba&mpid=1&lang=eng>

³⁴ Table 4.4, Compilation Guide, IMF

the importance of the evaluation of HHs' behavior on loans, a separate survey should be conducted to cover the sample of HHs that have loans.

- The debt service payment data misses the important part of the loan markets by not having complete data from non-deposit takers who operate in the market as lenders. The data can be obtained by the supervision department of NBG.
- Additionally, the compilation guide includes detailed series of data that should be filled for HHs. This data series can be derived only from a detailed survey of HHs.

Further research would include estimation of debt service abilities of Georgian population via various proxy analyses that will be based on estimating the financial inclusion and penetration of the Georgian population, their overall liabilities to the financial sector, average maturities and interest rates and their average income figures (Appendix 5).

7.3.6 Market Liquidity

Market liquidity indicators are interesting only marginally for the analysis of the local liquid markets due to the non-developed stock exchange market. The only liquidity and trading platform that is in place is the interbank market organized by NBG and dominated by NBG and treasury stocks, bonds, and certificates.

7.3.6.1 *Average Bid-ask Spread in the Securities Market*

This FSI is the difference between the prices at which market participants are willing to buy (bid) and sell (ask) assets; it is a measure of market tightness—the relative cost of engaging in a transaction irrespective of the absolute level of the market price of the items being sold. Bid-ask spreads tend to be narrower in more liquid and efficient markets.

It is calculated as the difference between the best (highest) bid and the best (lowest) ask price in the market, expressed as a percentage of the midpoint of the buy and sell price of an asset—a benchmark domestic government or central bank debt security in the first instance.

Because of the link between market-based liquidity indicators and the indicator on deposit takers' liquid assets, bid-ask spreads should be compiled, at a minimum, for financial instruments included in the wider measure of liquid assets. The natural starting point is to compile indicators (1) for domestic government or central bank bills that are used by the national authorities to influence liquidity conditions in their domestic economy, and (2) for corporate securities if they are included in the definition of liquid assets.

Similarly, the tightness of the local foreign exchange markets may also be relevant if foreign exchange- denominated securities qualify as liquid assets.

The bid-ask spread should be compiled on a daily basis or, at a minimum, on a weekly basis. The frequency of price observations can be on a tick-by tick basis, but preferably at least two quotes per day should be taken (for example at 10:30 a.m. and at 2:30 p.m.). If price observations are taken on a less than hourly basis, care is needed to avoid biases related to systematic volatility of intraday price quotes.

In Georgian context corporate securities cannot be considered as liquid. So the index is calculated for domestic government and central bank bills that are traded. Certificates of deposit issued by NBG, treasury bills and treasury bonds issued by the Ministry of Finance and government bonds are traded on auctions organized by NBG. The statistics are recorded and the relevant FSI is compiled by NBG.

7.3.6.2 Average Daily Turnover Ratio in the Securities Market

This FSI is the ratio of average daily trades to the outstanding stock of securities; it is a measure of market depth—the ability of a market to absorb large trade volumes without a significant impact on market prices. It is calculated as the number of securities bought and sold during a trading period divided by the average number of securities outstanding at the beginning and the end of the trading period. The volume of all trades executed during official trading hours of the markets should be captured. The Guide recommends that turnover be calculated in the first instance for a benchmark domestic government or central bank debt security.

NBG is the organizer of the auctions for trading treasury bills and treasury bonds issued by the Ministry of Finance and government bonds. The participants submit the bids before the start of the auction and by the end of the day auction results are announced. The statistics are recorded and the relevant FSI is compiled by NBG.

7.3.7 Real Estate Markets

Exposures to the real estate sector are significant risk factors for the local banking sector due to the high historical volatility of prices. As a collateral, both residential and real estate property need to be adequately priced and monitored on a permanent basis. As long as Georgian banks have significant residential and commercial real estate exposures, it is important to have adequate price indices in place as well.

7.3.7.1 Real Estate Prices

This FSI covers residential and commercial real estate price indices separately.

For the moment not a single state service is doing real estate price monitoring. Compilation of the index is constrained by the high cost and technical difficulty involved, the limited demand for such data in the past, and the proprietary control of much of the key detailed data necessary for compiling indices. Which is why, in many countries, the compilation and dissemination of real estate indices is undertaken by private corporations or associations involved in various real estate transactions. In Georgia, the index is compiled by those agencies that have a private interest and hence they do not make it publicly available.

For this purpose the economic research institute should take a lead to monitor the prices and base its analysis on global best practices. This type of organization is the best to promote the development of reliable, timely and consistent statistics on real estate prices. The index compiler should be able to conduct a survey and use the research methods for compiling and analyzing. One of the best examples of compiling the index is seen in the USA (Economic Research, Federal

Reserve Bank), which uses the standard representative-property method (Laspeyres index) and Hedonic or quality-adjusted regression method to control the heterogeneity (quality, location, etc.) of real estate.

Another possible source of the transactions data for real estate is from the official registry of Georgia. Nowadays not only purchase, but generally property or business registration functions are implemented by the National Agency of the Public Registry (NAPR, e.g. Public Registry), an entity under the Ministry of Justice of Georgia. For the index compiler, the data should be accessible and transparent, but given the property rights exclusivity the detailed information may not be obtained. .

Georgia has little experience in monitoring the real estate market. One of the data series available covers the period from 2004 to 2011. Until 2012 the residential apartment price was included in the CPI basket, but after January 2012 this component was excluded. But these data are not reliable because the basket included only one apartment type which did not represent the residential real estate market of Georgia.

NBG reports the index in its annual Financial Stability Report. The index is calculated based on the data collected from newspapers. NBG takes prices for two types of units (from the two parts of Tbilisi) monthly and calculates the index. The data given in the newspapers are the advertised price and the asking price. Although this is not a transaction price, the data captures information about some key characteristics like the number of units, location, purpose, type of construction, size, number of rooms, utilities and amenities. This kind of data can be a proxy for the trends in the market, but it has the disadvantage of including only information about Tbilisi, thus overestimating the average real estate price level of Georgia. The types of apartments and sample size are extremely small and the conclusions based on the index are biased.

As for commercial real estate, NBG also calculates the respective index but here the sample contains the one square meter unit price in the central district of the capital of Georgia, which again leads to overestimation and does not describe the volatility of commercial prices.

To calculate real estate prices indices for Georgia, the International School of Economics at the Tbilisi State University (ISET). The dataset is obtained from online real estate marketplace, which collects information about sold residential and commercial real estate in different locations of the country. However, the data is primarily concentrated on the capital, Tbilisi. Data is collected on the daily basis from the marketplace. The results are published on www.ISET-PI.ge (Appendix 8).

7.3.7.2 Residential Real Estate Loans to Total Loans

This FSI identifies deposit takers' exposure to the residential real estate sector, with the focus on household borrowers.

IMF offers two options for calculating the index. Both the residential real estate loans (those loans that are collateralized by residential real estate) and the household debt collateralized by real

estate can be used as the numerator. Although not all real estate lending to HHs is collateralized by residential estate, such collateralized debt is predominant nonetheless.

The data is available through the NBG statistics. NBG reports the gross loans and loans to HHs, i.e. consumption loans and loans collateralized by real estate.

7.3.7.3 Commercial Real Estate Loans to Total Loans

This FSI measures banks' exposure to the commercial real estate market.

For compilation of this index we need the data on loans collateralized by commercial real estate, loans to construction companies, and loans to companies active in the development of real estate and gross loans.

Commercial real estate lending among deposit takers in the reporting population that are part of the same group is deducted.

The data is compiled on the IMF website.

8 Appendix 4: Investment Climate Assessment Questionnaire

(Based on IBRD Investment Climate Private Enterprise Survey, © 2003).

I. General Information about the firm

1. In what year did the firm begin operations in Georgia?
2. What percentage of the company's ownership is
 - a. Domestic _____
 - b. Foreign _____
3. Percentage of the firm owned by the largest shareholder _____
4. Does your firm operate in countries other than Georgia? If yes, which countries?
5. What is your firm's main product/business line?
6. What is your firm's share of the national market?
7. What % of your sales is earned domestically? Directly exported? Exported through a distributor?
8. If you export, what countries are your largest export destinations?
9. What % of your material inputs is imported from other countries?

II. Investment Climate Constraints to the Establishment

1. Please tell us if any of the following are a problem for the **operations and growth** of your business. If an issue poses a problem, please judge its severity as an obstacle on a four-point scale where:

0=no obstacle; 1=minor obstacle; 2=moderate obstacle; 3=major obstacle; 4=very severe obstacle

- a. Telecommunication
- b. Electricity
- c. Transportation
- d. Access to land
- e. Tax rates
- f. Tax administration
- g. Customs and Trade Regulations
- h. Labor regulation
- i. Quality of labor (ability to find qualified/skilled workers)
- j. Labor costs
- k. Business Licensing and operating permits
- l. Access to Financing (e.g. collateral)
- m. Cost of financing (e.g. interest rates)
- n. Economics and Regulatory Policy Uncertainty
- o. Macroeconomic Instability (inflation, exchange rates)
- p. Corruption
- q. Crime, theft, disorder
- r. Anti-competitive or informal practices
- s. Legal system/conflict resolution
- t. Uncertainty about or enforcement of property rights
- u. Political instability

Please briefly comment on the issues which were ranked 2, 3 or 4 on the scale. Which of those constraints are currently most “binding” – i.e. the most pressing and relevant for your company’s growth in the near or medium term.

III. Financing

1. Please identify the contribution (in %) over the last year of each of the following sources of financing for your establishment’s
 - i) Working Capital (inventories, accounts receivable and cash); and
 - ii) New Investments (i.e. new land, buildings, machinery and equipment).
 - a. Internal funds or retained earnings
 - b. Local commercial banks (loan, overdraft)
 - c. Foreign owned commercial banks
 - d. Equity, sale of stock
 - e. Family, friends
 - f. Other (specify)
2. For the most recent loan
 - a. Did the financing require collateral or a deposit?
 - b. If yes, what was the approximate value of the collateral required as a % of the loan value?
 - c. What was the approximate annual cost/rate of interest?
 - d. What is the duration (term) of the loan?
3. What share of your total borrowing is denominated in foreign currency?
4. If some of your borrowing (loans) is denominated in foreign currency (question 3):
 - a. Do they represent bank loans or are they from non-bank sources?
 - b. Is this arrangement optimal for your business needs? (or would you rather have borrowed these funds in domestic currency)
 - c. Do you have an option of borrowing in local currency from the bank? from the non-bank sources?
5. Does your establishment have its annual financial statement reviewed by an external auditor?
6. Please comment on whether access and/or cost of finance is a constraint for your business’s development. If yes, please comment on which of those constraints are currently the most pressing and relevant for your company’s growth.

IV. Business-government relations

In your opinion what should the government priorities be in improving business climate? (e.g. improving public infrastructure, utilities, court system, enforcement of property rights; providing export subsidies, production subsidies; improving legislation: labor code, competition law, tax code)

V. Capacity, Innovation and Learning

1. What was your establishment’s average capacity utilization over the last year (capacity utilization is the amount of output actually produced relative to the maximum amount that

could be produced with the existing machinery, equipment and regular shifts) – did you operate below capacity, above the capacity or approximately at your capacity.

2. Has your company undertaken any of the following initiatives in
 - a. Develop a major new product line
 - b. Upgraded an existing product line
 - c. Introduced new technology that has substantially changed the way the main product is produced
 - d. Discontinued at least one product (not production) line
 - e. Opened a new plant
 - f. Closed at least one existing plant or outlet
 - g. Agreed a new joint venture with foreign partner
 - h. Obtained a new licensing agreement
 - i. Major changes or improvements in production or delivery methods to customers (through changes in techniques, equipment and/or software, such as adding or improving manufacturing systems, logistical systems, tracking systems, computer systems and equipment, introducing worker training programs) – please specify which changes were introduced

3. Which of the following is the most important influence on your company to develop new products or services and markets? Pressure from
 - a. Domestic competitors
 - b. Foreign competitors
 - c. Customers
 - d. Shareholders
 - e. Creditors
 - f. Government

4. Which of the following is the most important influence on your company to reduce the production costs of existing product and services? Pressure from
 - a. Domestic competitors
 - b. Foreign competitors
 - c. Customers
 - d. Shareholders
 - e. Creditors
 - f. Government

5. What do you see as the major obstacles for your company to introducing new technologies and innovation? (e.g. costs of licensing, government regulations, competition, learning curve for new technologies (the time and cost it takes to learn and implement new technologies)).

VI. Labor relations

1. How many employees does your company hire?

2. Are you able to find sufficiently qualified/skilled labor in the Georgian market?
3. Do you need to bring qualified specialists from abroad?
4. What is the average premium you pay for a skilled worker (% above the average unskilled wage)?
5. Do you provide formal (beyond regular “on the job”) training to your workers?
6. What are the main problems/concerns associated with providing training for your workers?

- losing the trained work force to competitors
- cost of training
- work ethics, motivation
- lack of relevant experience
- lack of proper background education

How will the introduction of the new labor code affect your company? Do you expect to make significant adjustments? How do you expect these adjustments to affect your company in the short and medium term? In the long term?

Appendix 5: Initiatives in the Compilation of Encouraged Indicators for Georgia: a Multilateral Approach

Under the technical assistance to strengthening capacity of NBG to compile and analyze financial soundness indicators, a joint ADB-National Bank of Georgia (NBG)-National Statistical Service (Geostat) - International School of Economics at the Tbilisi State University (ISET) was implemented in Georgia in November 2013.

Main statistical activities were carried out under the above mentioned project:

- Survey was conducted and administered by GeoStat for nonfinancial corporations (NFCs). The survey instruments (survey program and methodology, questionnaire, explanatory notes, etc.) were prepared jointly with NBG. The results of the survey, which will be available by the end of October 2014, will be used to calculate FSI indicators as prescribed by the IMF manual, be, such as:
 - Total debt to equity;
 - Return on equity;
 - Earnings to interest and principle expenses;
 - Net foreign exchange exposure to equity.
- Survey was conducted for pawnshops to collect data on assets and liabilities, to serve as additional information to Other Financial Corporations (OFCs) sector financial statements, and to allow for the calculation of OFCs related FSIs, such as:
 - Assets to total financial system assets, and
 - Assets to GDP.
- NBG collected data from the Public Registry Agency (PRA) to calculate residential and commercial real estate price indices, as real estate markets related FSIs. For this purpose, ISET developed a methodology to calculate the real estate price indices.

Based on the recommendation of IMF's FSI modifications to the current list of FSIs in 2013 (see methodology in Box 5), NBG decided to pursue the implementation of the new indicators covering money market funds, insurance corporations, pension funds, other nonbank financial institutions as well as nonfinancial corporations and households. It was agreed that the following indicators will be disseminated through IMF's website:

Other Financial Corporations (OFCs)

- 1) OFC assets to total financial system assets;
- 2) OFC assets to GDP.

Households:

- 1) Household debt to GDP;
- 2) Household debt service payments to household income.

Meanwhile, new indicators from the technical assistance funded by ADB will be uploaded in the NBG's website, excluding nonfinancial corporation which will be released in November 2014:

Other Financial Corporations:

- 1) IC assets to total financial system assets;
- 2) Other OFC assets to total financial system assets;
- 3) IC assets to GDP;
- 4) other OFC assets to GDP;

Nonfinancial corporations:

- 1) external debt to equity;
- 2) foreign currency debt to equity;
- 3) return on assets;
- 4) earnings to interest expenses;
- 5) liquidity ratios (current ratio/liquidity ratio);
- 6) NFC debt to GDP.

Households:

- 1) Household debt and household disposable income.

Box 5. FSIs for Georgia: Methodology

In compiling the Financial Soundness Indicators (FSIs), the NBG follows the analytical framework described in the FSIs Compilation Guide, and in the “Amendments to the FSIs: Compilation Guide (July 14, 2008)”. FSIs calculation methods and other details are given in the FSIs metadata, prepared for public dissemination on the NBG’s website. However, metadata posted on the IMF’s FSIs website is given in the standard format recommended by the IMF.

Methodology for data collection for pawnshops is based on the methodology prescribed for OFCs and given in the Monetary and Financial Statistics Manual (2000) and Monetary and Financial Statistics Compilation Guide (2008).

The nonfinancial corporations’ methodology is based on FSI I Compilation Guide (2006). Moreover, System of National Account (2008), Balance of Payments Statistics Manual (2009), Monetary and Financial Statistics Manual (2000) are also used for more accurate definitions of residency criteria and sectorization of economic entities, external debt, financial assets etc.

To calculate real estate prices indices, the International School of Economics at the Tbilisi State University (ISET). The dataset is obtained from online real estate marketplace, which collects information about sold residential and commercial real estate in different locations of the country. However, the data is primarily concentrated on the capital, Tbilisi. Data is collected on the daily basis from the marketplace. The results are published on www.ISET-PI.ge (Appendix 8).

Appendix 6: Non-Financial Corporation Questionnaire

Financial Indicators of the Non-Financial Corporation
(at the end of period) pls indicate the reference date

1. Assets and Liabilities

Name of the indicators	N	GEL	Comments
Total Assets	1		Nonfinancial assets plus Financial assets
Of which in foreign currency	2		item 2 item 1
Financial Assets	3		Includes currency and deposits, debt securities, shares and other equity, trade credits, financial derivatives and other financial assets; item 3 (item4 to item9)
Currency holdings in national currency	4		
Currency holdings in foreign currency	5		
Currency in banks vaults in national currency	6		
Currency in banks vaults in foreign currency	7		
Deposits in non-resident banks	8		
Securities	9		
Of which emitted by non-residents	10		item 10 item 9
Total Liabilities	11		Includes loans, debt securities, trade credits, financial derivatives and other liabilities
Of which: shares in foreign currency (in foreign companies), including investments in own branches and daughter companies	12		item 12 item 11
Liabilities in foreign currency	13		item 13 item 11
Liabilities to the other nonfinancial corporations	14		item 14 item 11
Financial derivatives	15		item 14 item 11

2. Equity and Reserves

Name of the indicators	N	GEL		Comments
		At the beginning of period	At the end of period	
A	B	1	2	3
Equity and Reserves	16			item 16 = item 1 minus item 11

3. Interest Income and Expenses

Name of the indicators	N	GEL	Comments
------------------------	---	-----	----------

Earnings before interest and tax	17		Net operating income (item 18) plus Interest income (item 19) plus Other income (net; item 22) minus Interest receivable from other nonfinancial corporations (item 21)
Net operating income	18		Revenue from sales of goods and services (excluding indirect sales taxes) minus cost of sales
Interest income	19		
Of which interest on loans granted to the households	20		item 20 item 19
Interest receivable from other nonfinancial corporations	21		
Other income (net)	22		
Interest expense	23		

4. Debt service payments

Name of the indicators	N	GEL	Comments
Debt service payments	24		
Of which: on loans received from the households	25		item 25 item 24
on loans received from the other non-financial corporations	26		item 26 item 24

5. Financial Stability Indicators: should be calculated by the Geostst – will this be calculated from individual corporations? or as a summary table for all NFCs?

	N	Ratio	Numerator	Denominator
Total debt to equity	2 7		item 11 minus item 15	item 16.2
Return to equity	2 8		item 17	(item 16.1plus item 16.2)/2
Earnings to interest and principal expenses	2 9		item 18 plus item 19 plus item 22 plus item 21	item 24
Net foreign exchange exposure to equity	3 0		item 2minus item 13 plus item 12	item 16.2

Appendix 7: Pawnshop Questionnaire

კითხვარი და კონსულტაციები მის შევსებაზე უფასოა!

National Statistical Service Geostat	
 0180 თბილისი, ცოტნე დადიანის ქ. #30, ტელ: (995 32) 236 72 10/209, ფაქსი: (995 32) 236 72 10/204 ელ-ფოსტა: info@geostat.ge. ვებ-გვერდი: www.geostat.ge	
Pawnshop Survey	კითხვარი # (ერთდროული) დამტკიცებულია საქართველოს სტატისტიკის ეროვნული სამსახურის საბჭოს დადგენილებით
<ul style="list-style-type: none"> • კითხვარი ივსება ლომბარდებზე . • „ოფიციალური სტატისტიკის შესახებ“ საქართველოს კანონის 25-ე მუხლის პირველი პუნქტის თანახმად საქსტატი უფლებამოსილია ადმინისტრაციული ორგანოებისგან და სხვა ფიზიკური და იურიდიული პირებისგან მოითხოვის და მიიღოს თავისი ფუნქციების შესასრულებლად საჭირო ყველა სტატისტიკური და სხვა ინფორმაცია (მათ შორის კონფიდენციალური). • ინდივიდუალური მონაცემები ითვლება კონფიდენციალურად და დაცულია საქართველოს ზოგადი ადმინისტრაციული კოდექსითა და „ოფიციალური სტატისტიკის შესახებ“ საქართველოს კანონის 28-ე მუხლით. • კითხვარი შეივსება 2013 წლის მდგომარეობით, დარიცხვის მეთოდის მიხედვით. 	

Part I. Identification Data

Name of interviewer	
Name of the enterprises	
Code – is this for enumeration code? Or area code?	
Name of respondent	
Phone number of respondent	
Type of main economic activity	
Type of other economic activities	
Address	
Municipality	
City	
Town	
Street	

Pawnshop Questionnaire continued...

Part II. Assets (at the end of period; Thousand. of GEL)

Item Name (1)	# (2)	Total (3)	Of which		Comments (6)
			In national currency (4)	In foreign currency (5)	
Cash	1				
Currency in banks	2				item 2 =item 3 plus item 4
Of which:					
In resident banks	3				
In nonresident banks	4				
Loans	5				
Of which:					
To the Households	6				item 6 item 5
Fix assets	7				
Other assets	8				
Total Assets ?					

Part III. Liabilities (at the end of period; Thousand. of GEL)

Item Name (1)	# (2)	Total (3)	Of which		Comments (6)
			In national currency (4)	In foreign currency (5)	
Loans	9				Item 10 plus item 11
Of which:					
From residents	10				
From nonresidents	11				
Securities	12				
Other liabilities	13				
Total liabilities ?					

Part IV. Equity (Thousands of GEL)

Item Name (1)	# (2)	Total (3)	Of which		Comments (6)
			In national currency (4)	In foreign currency (5)	
Profit/losses in the reporting period	14				Computation?
Other equity	15				

Part V. Memo items

Item Name (1)	# (2)	Total (3)	Of which		Comments (6)
			In national currency (4)	In foreign currency (5)	
Number of borrowers	16		X	X	
Of which:					
Households	17		X	X	item 17 item 16
Annual weighted average interest rate on loans	18				Annual weighted average interest rate on loans: $\bar{P} = \frac{\sum PV}{\sum V}, \text{ where}$ $P - \text{contracted nominal annual interest rate}$ $V - \text{contracted value of loan}$

Would there be any summary of the items/indicators above to be computed by GeoStat?

Appendix 8: Real Estate Market Prices

Methodology

According to the best global practices, residential and commercial real estate price indices are expressed by several widely-used indices such as Laspeyres real estate index or the Paasche real estate index. Another popular measure, the Fisher real estate index is the combination of the two. However, the indices heavily depend on the available sample and do not take into account sample volatility across time. One way of remedying this issue is to construct a standardized real estate unit in each time period (using a hedonic regression technique) and use this unit to obtain quality-adjusted indices. The latter are called Laspeyres hedonic imputation index and Paasche hedonic imputation index (Handbook on Residential Property Price Indices, *Eurostat Methodologies and Working Papers*, 2013).

To calculate the standardized real estate unit price, we construct a linear regression model on data in each time period using unit price in log form as a dependent variable and controlling for various characteristics such as unit location, area, renovation type and so on (the model is laid out in detail later). In short, the general exposition of the model is the following:

$$\ln(P^t) = \hat{\beta}_0^t + \sum_{k=1}^K \hat{\beta}_k^t z_k^t + e^t$$

Where P^t is the price of the real estate unit in period t , (z_1, \dots, z_K) is the characteristic vector of the unit, and e^t is the error term. The dependent variable is transformed due to the fact that real estate prices tend to have a log-normal distribution.

The exact formula for Laspeyres hedonic imputation index is

$$I_L^{0t} = \frac{P^t(\bar{z}^0)}{P^0(\bar{z}^0)} = \frac{\exp(\hat{\beta}_0^t + \sum_{k=1}^K \hat{\beta}_k^t \bar{z}_k^0)}{\exp(\hat{\beta}_0^0 + \sum_{k=1}^K \hat{\beta}_k^0 \bar{z}_k^0)}$$

Where a vector $\bar{z} = (\bar{z}_1, \dots, \bar{z}_K)$ is the standardized real estate unit of period 0 (the base period). The vector is obtained by averaging each characteristic in the sample. For factor variables, the mode is taken.

Similarly, the Paasche hedonic imputation index is

$$I_P^{0t} = \frac{P^t(\bar{z}^t)}{P^0(\bar{z}^t)} = \frac{\exp(\hat{\beta}_0^t + \sum_{k=1}^K \hat{\beta}_k^t \bar{z}_k^t)}{\exp(\hat{\beta}_0^0 + \sum_{k=1}^K \hat{\beta}_k^0 \bar{z}_k^t)}$$

To obtain a Fisher-type hedonic imputation index, we take the geometric average of the two indices:

$$I_F^{0t} = [I_L^{0t} * I_P^{0t}]^{\frac{1}{2}}$$

We will calculate the three indices separately for residential and commercial properties. Residential properties will further be divided into apartments and private houses, the index will be calculated separately for them and a weighted average will be calculated as the overall residential property index.

Data

The data about real estate market is obtained from the online real estate marketplace www.place.ge. The website lists residential and commercial properties in Georgia. The website was created in January 2013, so our database includes properties advertised on the website in 2013. In total, 74,605 observations had been advertised as of 10 November 2013.

The database includes the following information about each property:

- Date of advertising
- Seller's price (in USD)
- Address of the property: city, region, district, and street
- Area of the property
- Area of land of the property (if any)
- Type of settlement (for sale, for rent, for lease)
- Type of property (apartment, house, commercial)
- Renovation type (no renovation, renovation needed, renovation in progress, renovated long ago, renovated, newly renovated, euro-renovation)
- Age (old, new, in progress)
- Number of rooms
- Number of bedrooms (if applicable)
- Number of bathrooms (if applicable)
- Number of balconies (if applicable)

We would like to stress that the price is not the transaction (actual sale) price, but the one set by the seller. It is usually negotiable and is thus consistently higher than the sale price. This introduces bias in the index, but if we assume that the bias is more or less constant, it will not affect the estimation of index fluctuation over time.

Preliminary regression analysis has shown that these variables are highly significant when explaining the price and they explain around 70% of the variation in price.

The numbers of advertisements are not evenly distributed among cities: The bulk of the ads were for properties in Tbilisi (88.79%), followed by Batumi (2.55%), Rustavi (0.80%), Mtskheta (0.77%), and Kutaisi (0.72%). The rest of observations are scattered throughout the whole Georgia. We will consider indices for these five cities separately.

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