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Forecasting Georgia Economic Growth 2020-2030

Firms, households, government agencies, and non-government organizations rely on forecasts when making decisions regarding the allocation of scarce resources. This paper develops evidence-based forecasts for key macroeconomic variables for the country of Georgia. Sources of data include the International Monetary Fund's World Economic Outlook, The World Bank, and others. This paper uses, primarily, exponential smoothing models generated by the statistical application Forecast Pro 100 to generate forecasts with 95 percent confidence limits. Finally, recognizing the high degree of uncertainty associated with long-term forecasting, we include scenarios to generate high, middle, and low values for the key variables. This analysis shows population, a key economic resource, to be declining, along with the labor force participation rate, after a considerable rise. Gross fixed capital formation appears to be rising, while total reserves (including gold) is holding steady. With real GDP rising at an average rate of about five percent over the past decade, our forecast shows GDP continuing to increase over the next decade, along with GDP per capita, indicating a rising level of general wellbeing. Georgia's inflation rate is low, and there is no credible evidence that the rate of inflation will accelerate in the coming years. This paper develops three scenarios for economic growth for Georgia for the period 2020-2030. All three scenarios – low, medium, and high–show continued healthy growth.

Keywords: Georgia, economics, forecasting, macroeconomics, GDP.

Economic Resources

Land. Georgia has manganese, silver-lead and zinc ores, barite, coal, and marble. Oil and peat deposits have been also discovered. Much of the country is mountainous and not suitable for large scale agriculture. Much of the infrastructure of Georgia was built during the Soviet period. This includes roads, bridges, electrical power generation and transmission systems, gas pipelines, and water and sewage systems. Maintenance of these systems, and further development require large capital investments. With the Rose Revolution of November 2003 under President Mikheil Saakashvili, the government made significant investments in infrastructure, including border-to-border superhighways. Georgia maintains some 1,045 miles in common carrier service not including industrial lines (Transportation in Georgia). A world-class motorway crosses the country east to west. Tbilisi has a metro system. Much of the internal transportation uses bus and minibus networks. There are 14 airports with paved runways. The largest, Shota Rustaveli International Airport 11 miles southeast of Tbilisi, accommodates a number of airlines. Ports on the Black Sea include Batumi, Poti, Sokhumi, and the Kulevi Oil Terminal. We would not expect to see much change over the coming decade.

Labor. The graph below shows a substantial increase in the labor force participation rate, from 62.7 percent in 2009 to a peak of 66.8 percent in 2015, and a decline to 65.8 percent in 2017. The rate may continue to decline over the next decade.

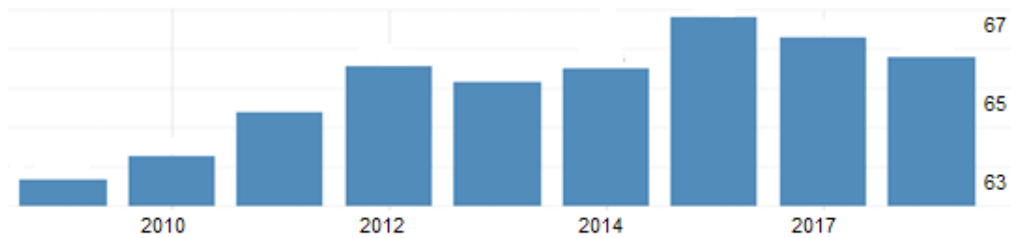


Figure 1. Georgia Labor Force Participation Rate, 2009-2017. (Trading Economics, 2018, from National Statistics Office, Georgia)

The population density in Georgia is 56 per Km² (146 people per mi²). 58.9 percent of the population is urban (2,302,656 people in 2018). The median age in Georgia is 38.1 years. The population of Georgia was 3,904,339 as of June 14, 2019, based on the United Nations estimates (Worldometers, 2019). This is down 28 percent from a 1990 peak of 5,410,372, just prior to the breakup of the Soviet Union. We forecast Georgia's

population will fall to about 3.7 million by 2030.



Figure 2. Georgia Population, 1950-2018. Worldometers, 2019.

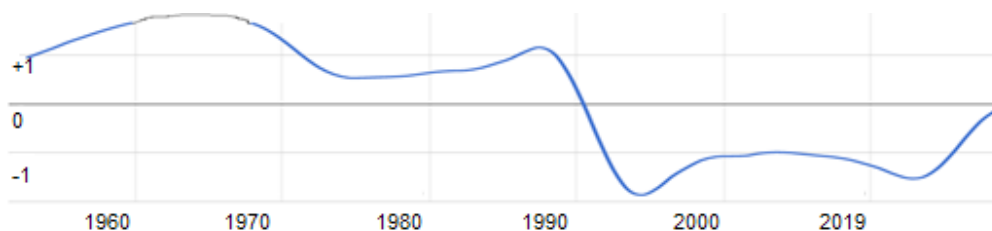


Figure 3. Georgia Population Growth Rate (percent). Worldometers, 2019.

We find historical population data for Georgia from 1980 to 2017 in the International Monetary Fund’s April 2019 World Economic Outlook (WEO). We use Forecast Pro 100 to forecast population to 2030. Our model is Holt exponential smoothing with a linear trend and no seasonality. (Shmueli and Lichtendahl, 2018, describe smoothing as “based on averaging values of multiple periods in order to reduce the noise,” p. 79). The sample size is 22. The adjusted R2 is 0.99. The mean absolute percent error (MAPE) is 0.48 percent, and the mean absolute deviation (MAD) is 0.02.

Our forecast shows a steady decline in Georgia’s population over the next decade.

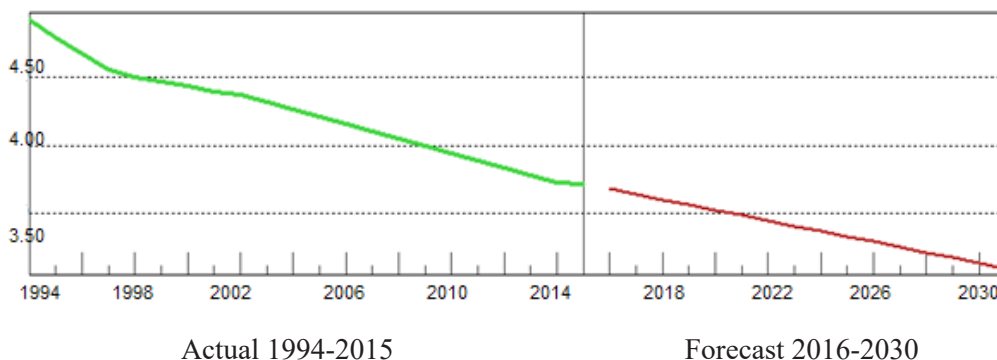


Figure 4. Georgia Population, 1994-2015 actual with forecast to 2030 (million persons).

Caucasus Business Week (2018) reports, “According to national statistics service of Georgia, the year of 2009 recorded highest unemployment indicator (16.9 percent) and the lowest figure was recorded in 2015 (12 percent).”

During the period 2009-2017, the unemployment rate in Georgia fell from 18.3 percent to 13.9 percent.

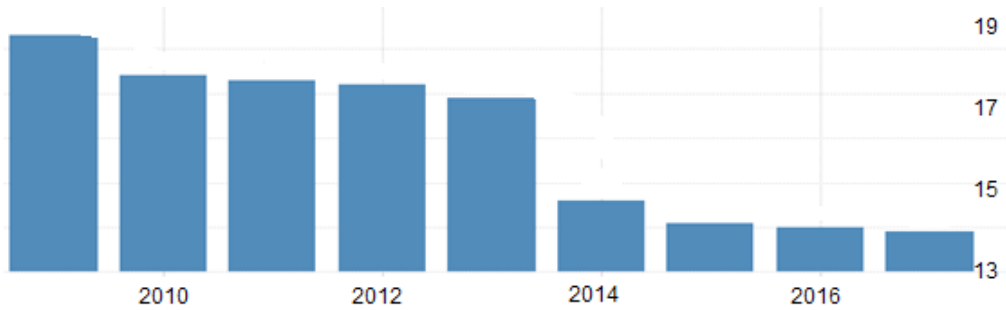


Figure.5 . Georgia Labor unemployment rate, 2009-2017.

(Trading Economics, 2018, from National Statistics Office, Georgia)

Capital. The World Bank (2019) includes in capital “land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings.”

Georgia’s gross fixed capital formation (percent of GDP) is shown below for the years 1990 to 2017. Investment collapsed after the dissolution of the Soviet Union.



Figure 6. Georgia’s investment in fixed capital, 1990-2017, percent of GDP

(World Bank and OECD, 2019)

Foreign Direct Investment in Georgia increased by \$197 million in the fourth quarter of 2018. Foreign Direct Investment in Georgia averaged \$317 million from 2005 until 2018, reaching an all-time high of \$740.50 million in the third quarter of 2014 and a record low of \$79.60 million in the third quarter of 2005. (Trading Economics). We see no significant change in FDI over the next decade.



Figure 7. Georgia FDI 2006-2018, million US dollars (Trading Economics).

Driving Forces

Those forces that drive any economy include education, technology, healthcare, globalization, energy, trade, and institutions.

Education. . Georgia spends 3.8 percent of its GDP on education, compared to a world average of 4.8 percent (World Bank Group, 2019). Georgia has a total of 613,000 pupils enrolled in primary and secondary education. Of these pupils, about 287,000 (47%) are enrolled in primary education. Paresashvili & Oqruashvili (2017), commenting on the challenges of the building of human capital in Georgia, conclude, “Innovative development can be achieved first of all, by means of innovative changes in the education system” (p.7). Increases in education for 21st century jobs will enhance Georgia’s economic development in the coming decade.

Healthcare. The World Health Organization (2018) reports that life expectancy for Georgians at birth is 68 for males and 77 for females. The probability of dying between 15 and 60 years per 1,000 population is 238 for males and 83 for females. Georgia’s

total expenditure on health per capita was \$628 in 2016, or 7.4 percent of GDP. Improvements in the healthcare system will contribute to Georgia's economic development in the next decade.

Technology. Georgia has been positioning itself as a hub for information and communication technology. The State Program on Broadband Infrastructure Development in Georgia is expected to create a fiber-optic internet network in more than 2,000 cities and villages in Georgia. (Agenda.ge, 2016). Incentives to innovate will contribute to economic growth.

Energy. Georgia is a net energy importer (WEO April 2019, p. 49). Georgia had a total primary energy supply (TPES) of 4.793 Mtoe (million tons of oil equivalent) in 2016. Electricity production was 11.6 TWh, of which 81 percent is from hydroelectricity and 19 percent from natural gas. Georgia has no nuclear energy (International Energy Agency, 2019).

Trade. Georgia is a member of the GUAM Organization for Democracy and Economic Development (Georgia, Ukraine, Azerbaijan, and Moldova) and a member of the World Trade Organization (WTO) and the Organization of the Black Sea Economic Cooperation (BSEC). Georgia is an Observer state of the Southeast European Cooperative Initiative (SECI, 2019).

The IMF reports, "Since 2014, Georgia has been forced to deal with large and persistent external challenges to its economic stability, including pressure on its currency as well as lower global oil and commodity prices, which have undercut how much revenue it can obtain from exports" (International Monetary Fund, 2019a).

Georgia's trade deficit widened to \$454.7 million in November of 2018 from \$429 million in November 2017. Exports surged 29.4 percent from a year earlier to \$283.3 million and imports went up at a softer 13.9 percent to \$738 million. Considering the first eleven months of 2018, the deficit was recorded at \$5.3 billion, compared to a \$4.6 billion gap in the same period of 2017. Balance of trade in Georgia averaged a deficit of \$237 million from 1995 until 2018, reaching an all-time low of \$6.3 million in April of 1995 and a record high of \$629 million in December of 2014. IMF (WEO April 2019) projects Georgia current account balance for 2019 to be negative 8.0 percent of GDP, 7.8 in 2020, and 7.0 percent in 2024.

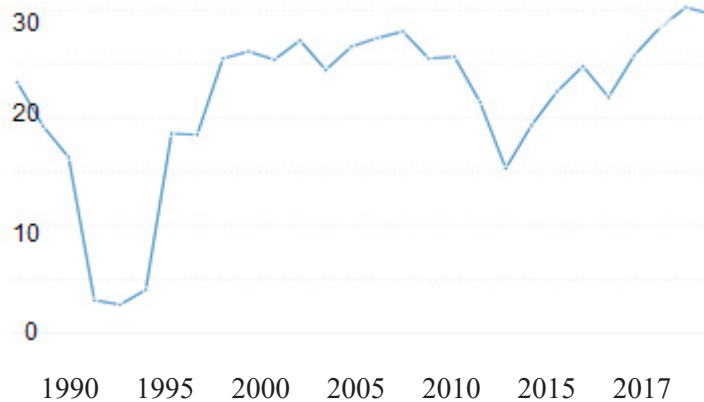


Figure 8. Georgia's gross fixed capital formation, 1990-2017, percent of GDP. (World Bank)

In millions of US dollars, the top export destinations of Georgia are Russia (\$403), Bulgaria (\$326), Azerbaijan (\$261), Turkey (\$229) and China (\$209). The top import origins are Turkey (\$1,400), Russia (\$787), China (\$757), Azerbaijan (\$547) and Ukraine (\$451). (OEC, 2019). Economic ties with China are increasing. First deputy prime minister, Dimitry Kumsishvili, said Georgia will see more Chinese investment in its power, financial services, railways and port construction sectors. “The opportunities come from growing demand for infrastructure projects, trade and investment channels, tourism activities and financial cooperation brought by the development of the Belt and Road Initiative” (China Daily, 2017).

Tourism. Georgia joined the World Tourism Organization in 1993 (UNWTO, 2019). In *Lifting the Veil* in 2009 (Raupp & Apkhazava), we noted the change in policies regarding tourism in Georgia, from being an essentially closed part of the Soviet Union to one of invitation and open hospitality. In our later paper (Raupp, 2013), we noted the importance of tourism in bringing hard currency reserves into the Caucasus Region. Tourism in Georgia had been increasing up to the invasion by Russia in August 2008. Efforts are being made to resume the favorable trend in attracting tourists to Georgia. Tourism in Georgia (2019) is an increasingly important component of the country's economy. In 2015, the tourism sector employed around 158,500 people, producing 6.7% of Georgia's GDP and providing US\$1.94 billion of revenue. In 2018, the number of international arrivals reached a record high of 8.7 million people with foreign exchange income in the year's first three quarters amounting to US\$2.6 billion. The country plans to host 11 million tourists by 2025 with annual revenues reaching US\$6.6 billion.” Government investment in tourism, both in infrastructure and in marketing, would have a positive effect on Georgia's GDP and total reserves (Raupp, 2013).

Reserves. Georgia has seen a steady increase in reserves over the past two decades, with a dip from 2012 to 2015, as shown in the graph below. Estimated total reserves in 2017 were about \$3.039 billion. Persistent trade deficits threaten to cut into total reserves over the coming decade.

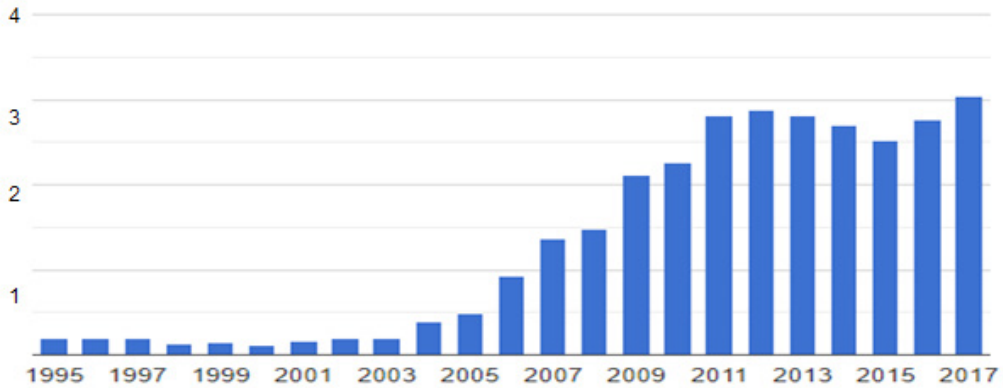


Figure 9. Georgia total reserves (includes gold, current billion US\$), 1995-2017.

(International Monetary Fund, International Financial Statistics and data files. 4.0)

Institutions. The Georgian Orthodox Church is a major institution, and its Patriarch Ilia II is perhaps the most highly respected figure in Georgian public life. The Patriarch is exceptionally well-informed and he is concerned about corruption in government and about the inequality of income and wealth.

Another strong institution in Georgia is its central and local government. Since the Rose Revolution of 2003, led by Mikheil Saakashvili, Georgia is the least corrupt of the fifteen former Soviet states (Transparency International, 2018). Elected as an independent in November 2018, Salome Zurbishvili, the French-born former foreign minister of Georgia, is its first female President. Following her term, the President will be elected by the Parliament as part of the transition to a stronger parliamentary democracy.

The 2019 Corruption Perceptions Index (CPI) paints a bleak picture of anti-corruption efforts in Eastern Europe and Central Asia. In a region where only one country scores over 50 out of 100 and all other countries score 45 or less out of 100 on the index, there has been very little progress in combatting corruption over several years. Georgia is that one country, scoring 58 points out of 100. (Transparency International, 2018). Continued measures to reduce corruption at all levels would contribute to healthy growth in the coming decade.

Total Factor Productivity (TFP). TFP, also called multi-factor productivity (MFP), is calculated by dividing output by the weighted average of labor and capital input, with labor weighted at 0.7 and capital at 0.3. TFP is a measure of economic efficiency.

Most of Georgia’s economic growth during the period 2004-2012 may be attributed to total factor productivity gains from economic restructuring. But it has fallen since, leaving capital accumulation to play an increasingly important role.

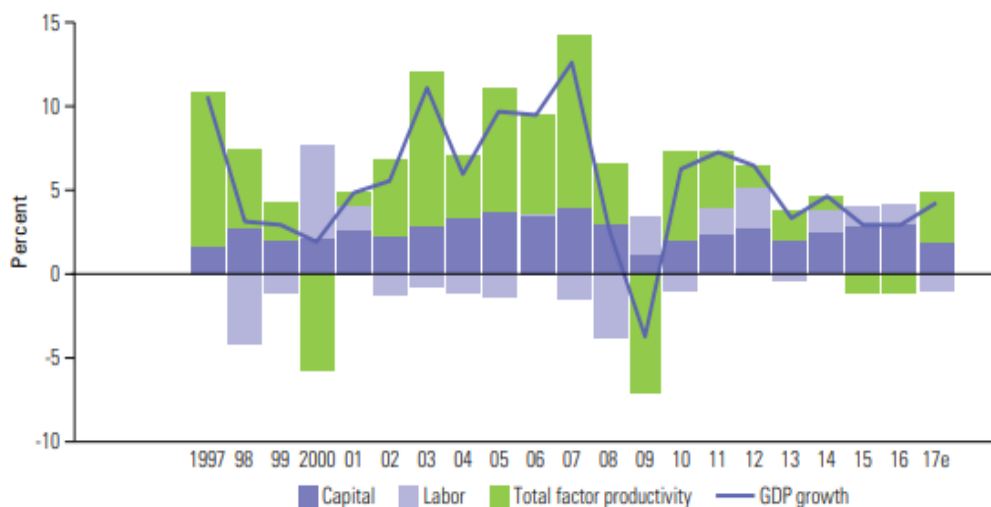


Figure 10. Contributions of capital, labor, and total factor productivity, Georgia, 1997-2017. (World Bank, 2019)

Gross Domestic Product (GDP)

Georgia’s economy relies heavily on domestic demand. Services account for nearly two-thirds of GDP, but—with the exception of tourism—are mostly made up of non-tradable activities, with the highest growth rates in domestic trade, hotels and restaurants, transportation, communications, and financial services. Personal consumption is supported by higher disposable incomes and credit growth. (World Bank Group, 2019.)

It is evident that the Georgian economy might enjoy a more robust economic growth through a greater degree of diversification. Investments by the government in marketing to external trading partners, especially those countries in the Black Sea Region,

might work toward that diversification. Agricultural products can be traded to a greater degree, but more scalable sectors could be developed in the financial and technology sectors. This would indicate a need for greater investments in education at all levels and in entrepreneurial ventures. The latter could be aided by investments in business incubators in cities and towns across the country.

Forecasting the GDP of any nation is uncertain. Studies show the most accurate forecasts tend to use multiple systems. In this paper, we report the results of several macroeconomic models, as well as the forecasting software, Forecast Pro 100 by Business Forecasting Systems (Stellwagen & Goodrich, 2017, 2018). Below, we show results using historical data from 1994 to 2016 from the October 2018 World Economic Outlook Database of the International Monetary Fund. We then forecast GDP to 2023 using Forecast Pro 100.

The model we use to forecast Georgia GDP is a Holt exponential smoothing model with linear trend and no seasonality. The sample size is 23, and the adjusted R2 is 0.99, indicating a good fit to the data. The mean absolute percent error (MAPE) is 3.25 percent, and the mean absolute deviation (MAD) is 0.27.

The IMF WEO Database forecast for 2023 is 20.606 billion Georgia lari (WEO, 2019). Using Forecast Pro 100, we show a forecast of 18 billion for 2023 and 20 billion by 2028. The graph below shows the results of the Forecast Pro model.

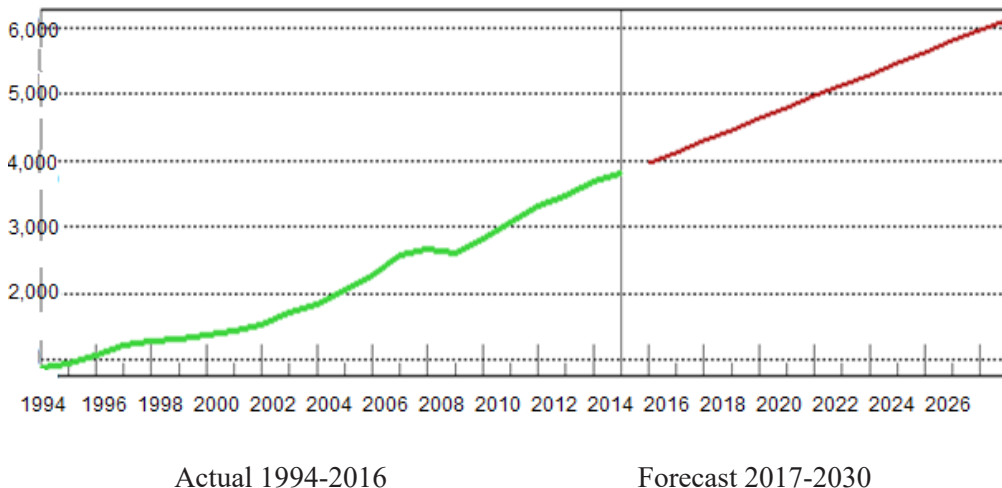


Figure 11. Georgia Historical GDP 1994-2016 and Forecast Pro 100 forecast 2017-2030

The World Bank provides data for Georgia from 1965 to 2017. The average value for Georgia during that period was 12.1 billion U.S. dollars with a minimum of 4.7 billion

U.S. dollars in 1994 and a maximum of 21.8 billion U.S. dollars in 1985.

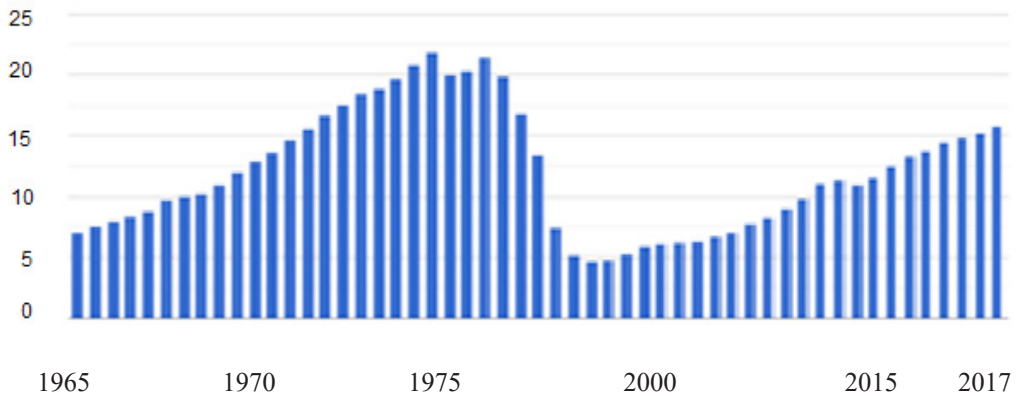


Figure 12. Georgia Real GDP (billion 2010 U.S. dollars), 1965-2017.

(World Bank Group, 2018)

The National Statistics Office of Georgia provides GDP growth rate data for Georgia from Q1 2004 to Q3 2018. The average value for Georgia during that period was 5.36 percent with a minimum of -8.7 percent in Q2 2009 and a maximum of 13.9 percent in Q3 2007.

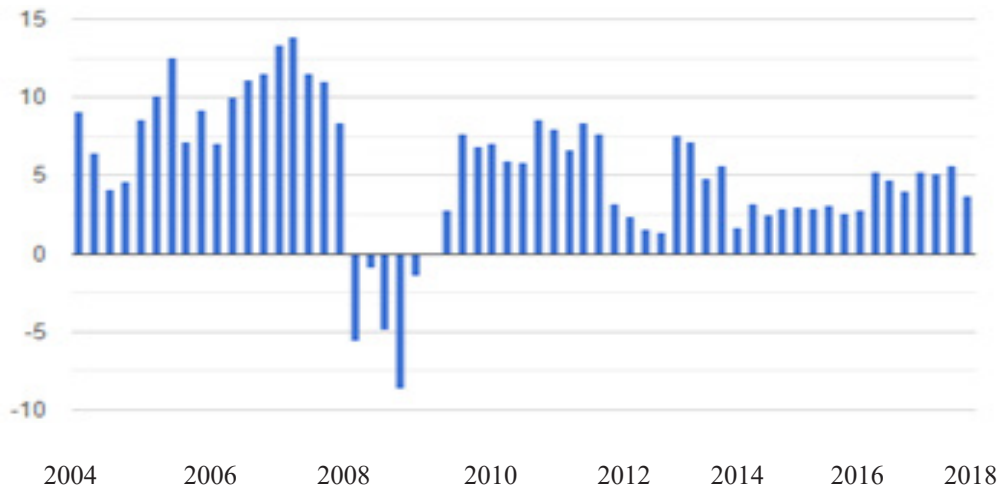


Figure 13. Georgia GDP Growth Rate, 2004-2018. (World Bank Group, 2018)

The GDP in Georgia was worth \$15.16 billion in 2017. GDP averaged \$7.62 billion from 1990 until 2017, reaching an all-time high of \$16.51 billion in 2014 and a record low of 0 in 1991. Georgia’s GDP is projected to trend around \$21 billion in 2020, according to Trading Economics (2018). IMF (WEO April 2019) projects Georgia real

GDP annual percent change for 2019 to be 4.8 percent, 5.0 percent for 2020, and 5.2 percent in 2024.

GDP per capita. Georgia’s GDP per capita in 2017 was \$4,078 (U.S. dollars), at purchasing power parity (PPP). This was number 8 of the 10 countries in the Black Sea Region, the average of which was \$6,293. Georgia’s GDP per capita is expected to trend to around \$4,678 by 2020 (Trading Economics).

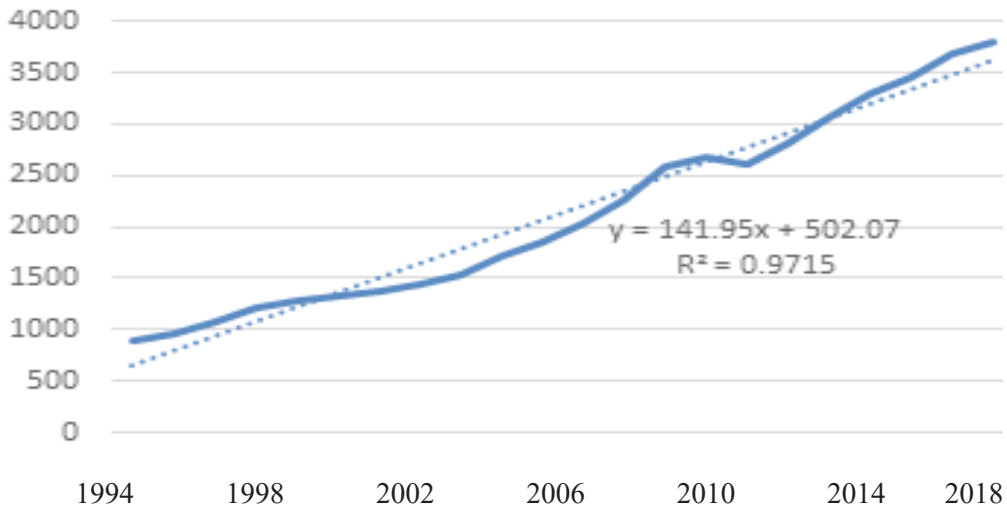


Figure 14. Georgia real GDP per capita, 1994-2015. (

Data from IMF WEO April 2019. Chart created in Excel.)

Drawing on data from the April 2019 IMF World Economic Outlook, Forecast Pro projects an increase in Georgia GDP per capita from 3,793 lari to about 6,300 in 2030. The mean absolute percent error for the forecast is 3.74 percent, and the mean absolute deviation is 73 lari. The adjusted R² is 0.99 for the series.

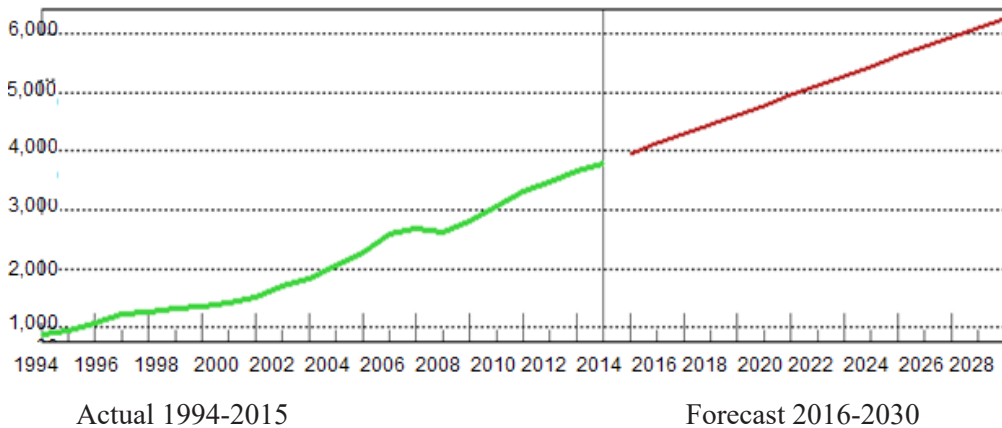


Figure 15. Georgia real GDP per capita, 1994-2015 actual, 2016-2030 projected.

(Data from IMF WEO 2019. Forecast and chart created in Forecast Pro.)

Currency

The Georgian lari (GEL) is worth about \$0.37, down from about \$0.60 some 10 years ago. A weaker lari makes Georgian exports more attractive to international buyers and imports from international sellers less attractive; each has the effect of increasing GDP. The IMF reports, “The banking sector remains well capitalized, liquid, and profitable, but dollarization remains high” (International Monetary Fund, 2018).

The chart below shows the value of one Georgian lari in terms of the United States dollar over the 10-year period 2009 to 2019. The high for the period was about 0.62 lari to the dollar. The low was about 0.36.

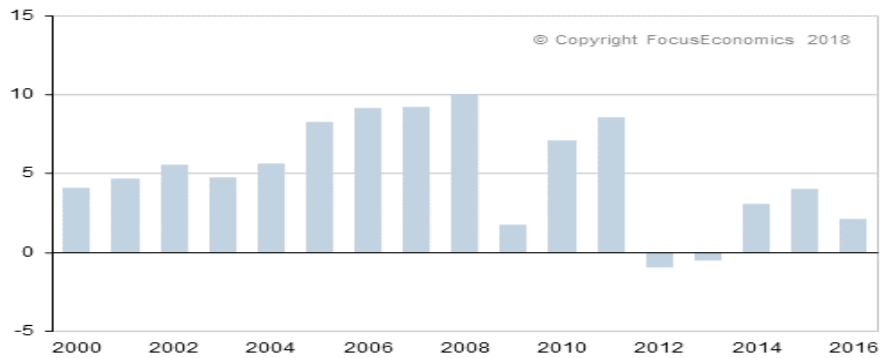


Figure 16. The value of one Georgian lari in terms of U.S. dollars, 2009-2019. (XE.com)

Inflation

The IMF (WEO April 2019) projects Georgia inflation for 2019 to be 2.5 percent and 3.0 percent in 2020 and 2024. Using consumer price index (CPI) data, Focus Economics (2018) shows a higher inflation rate at 6.0 percent and presents historical data from 2000 to 2016 in the following chart:

Georgia Inflation Chart



Note: Inflation, annual variation of consumer price index (CPI) in % (aop).
Source: National Bank of Georgia.

Figure17. Georgia's inflation rate, 2000-2016. (Focus Economics, 2019)

Distribution of Income and Wealth

Georgia's GINI index was 40.1 in 1999 and 36.5 in 2014 (World Bank Group, 2018). The implication is that the distribution of income—and, therefore, wealth, as well—has become less disparate.

Issues

Vladimir Putin remains an existential threat to the nation of Georgia. Putin's military forces occupy the northeastern province of Abkhazia, the north central region of South Ossetia, and the village of Akhagori bordering on and east of South Ossetia. Putin's invasion of Georgia in August 2008, along with the disdain of the current United States administration for NATO and the European region generally, offer no comfort to a nation seeking long-term peace and prosperity. (See Tumin, 2018.)

Scenarios

Georgia has been making progress economically and politically since the Rose Rev-

olution of 2003. A strong parliamentary democracy promises even greater stability in the coming years.

An IMF report in May 2019 (International Monetary Fund, 2019b) reported that Georgia's economic growth is projected to remain stable in 2019. Over the medium term, IMF said that structural reforms and infrastructure investment will be critical to support higher and more inclusive growth, and Georgia remains vulnerable to external developments. This requires continued exchange rate flexibility and reserves buildup, prudent monetary and fiscal policies, and sound financial sector policies. The IMF believes that diversification would offer greater macroeconomic stability.

The following scenarios are intended to provide a range of values depending on those "external developments" and the response of the Georgian authorities to both internal and external challenges.

Scenario 1: Base Scenario. Our most likely forecast for Georgia's real GDP (RGDP) in 2030 is 21 billion lari, up about 40 percent from 2017.

Scenario 2: High Scenario. At a confidence level of 95 percent, our forecast shows Georgia's RGDP could be as high as 24 billion lari, up 60 percent from 2017.

Scenario 3: Low Scenario. At a confidence level of 95 percent, our forecast shows Georgia's RGDP could be as low as 18 billion lari, up 20 percent from 2017.

Postscript

As this paper was in final editing, we received a report from the International Monetary Fund (2020). Highlights of the report are as follows:

- 2019 growth exceeded expectations, highlighting the resilience of the Georgian economy.
- Continued prudent policies are needed to maintain the growth momentum and bring inflation down to the 3-percent target by end-2020.
- Advancing structural reforms will make the economy more resilient to external shocks and improve medium-term growth potential.

An International Monetary Fund (IMF) team, led by Ms. Mercedes Vera-Martin, visit-

ed Tbilisi during February 5-11, 2020 to discuss recent economic and financial developments and progress with structural reforms. At the end of the visit, Ms. Vera-Martin issued the following statement:

“Georgia’s growth remains strong. According to preliminary estimates, real GDP grew 5.2 percent in 2019 compared to our projected 4.6 percent, and the current account deficit declined to a record low of 4.4 percent of GDP. Import growth remained broadly flat despite robust domestic demand, while exports increased by 12 percent (y/y). Despite higher policy rates, credit growth remained sustained, partly supported by lower foreign exchange reserve requirements. Strong revenue growth brought public investment to a record high (8 percent of GDP) without increasing the fiscal deficit (2.1 percent of GDP). After reaching 7 percent (y/y) at end-2019, inflation declined to 6.4 percent (y/y) in January.

“The growth outlook for 2020 remains stable, at 4.3 percent, but risks are now balanced due to higher-than-envisaged economic activity in 2019. Inflation is projected to converge to the 3-percent target by end-2020 due to tightened monetary policy and as the impact of one-off effects dissipate. The uncertain global outlook calls for continued exchange rate flexibility, reserve buildup, and prudent macroeconomic policies. The team welcomes the authorities’ continued commitment to maintain a tight monetary policy, for as long as needed, and a responsible fiscal policy.

“The 2020 budget appropriately targets a neutral fiscal stance. The fiscal deficit is expected to increase slightly, to 2.4 percent of GDP. The team welcomes the authorities’ efforts to accelerate VAT refunds by introducing an automatic repayment system; and steps to finalize the Public-Private Partnership framework and improve the management of state-owned enterprises, so that the authorities remain vigilant against a buildup in fiscal risks.

“Advancing structural reforms remain key to promote higher resilience to external shocks and more inclusive growth over the medium term. The team welcomes the new bank resolution legislation and steps taken to approve a new insolvency law. The current environment offers an opportunity to continue advancing with other reforms, including adopting an indexation rule for the basic public pension, addressing infrastructure investment needs, and improving education, to promote private-sector activity and create jobs.

“The team is looking forward to conducting the discussions for the sixth review under the Extended Fund Facility in April. The team would also like to thank the authorities

and technical team, and representatives of the private sector and development partners for their open and candid discussions.”

At the same time, while Georgia is not a Eurozone economy, there is a growing trade relationship between the two areas. A weaker Eurozone economy will likely have a negative, although small, impact on Georgia’s economic growth. Focus Economics (2020) offers this gloomy assessment for the Eurozone aggregate”

Prolonged weakness in the single-currency bloc’s industrial sector amid frail external demand, coupled with policy uncertainties at home, likely continued to constrain growth, with the French and Italian economies both unexpectedly contracting in the quarter.

This year, the economy looks set to remain anemic. The ECB sees growth at 1.1% in 2020 and 1.4% in 2021. Meanwhile, our panelists are slightly more pessimistic: The panel estimates growth will decelerate to 1.0% in 2020, which is unchanged from last month’s forecast, before edging back up to 1.2% in 2021.

Foreign sales are poised to cool, constrained by an unsupportive external environment, which will also weigh heavily on investment activity. On top of that, downside risks to the outlook include political instability in Italy, uncertainty related to the renegotiation of the currency bloc’s trading relationship with the U.K., an intensification of trade tensions with the U.S. and the coronavirus outbreak in China.

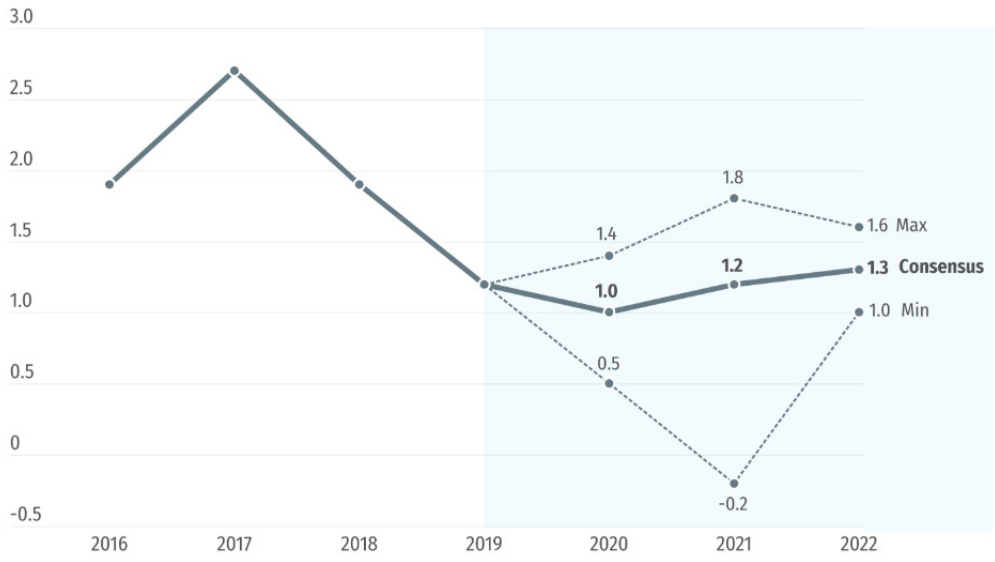


Figure 18. Eurozone GDP, year-on-year change

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