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How fast can Russia grow?

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How fast can Russia grow?

Abstract

In this note I gauge Russia's future growth potential under various assumptions in a standard growth-accounting framework. Russia's GDP growth during the next two decades will be substantially lower than during the previous 15 years, mostly because of rapid decline in labor force. In addition, much of the potential for rapid productivity growth has already been exhausted. Russia's GDP growth will be below two per cent per annum.

Keywords: Russia, demographics, total factor productivity, capital stock

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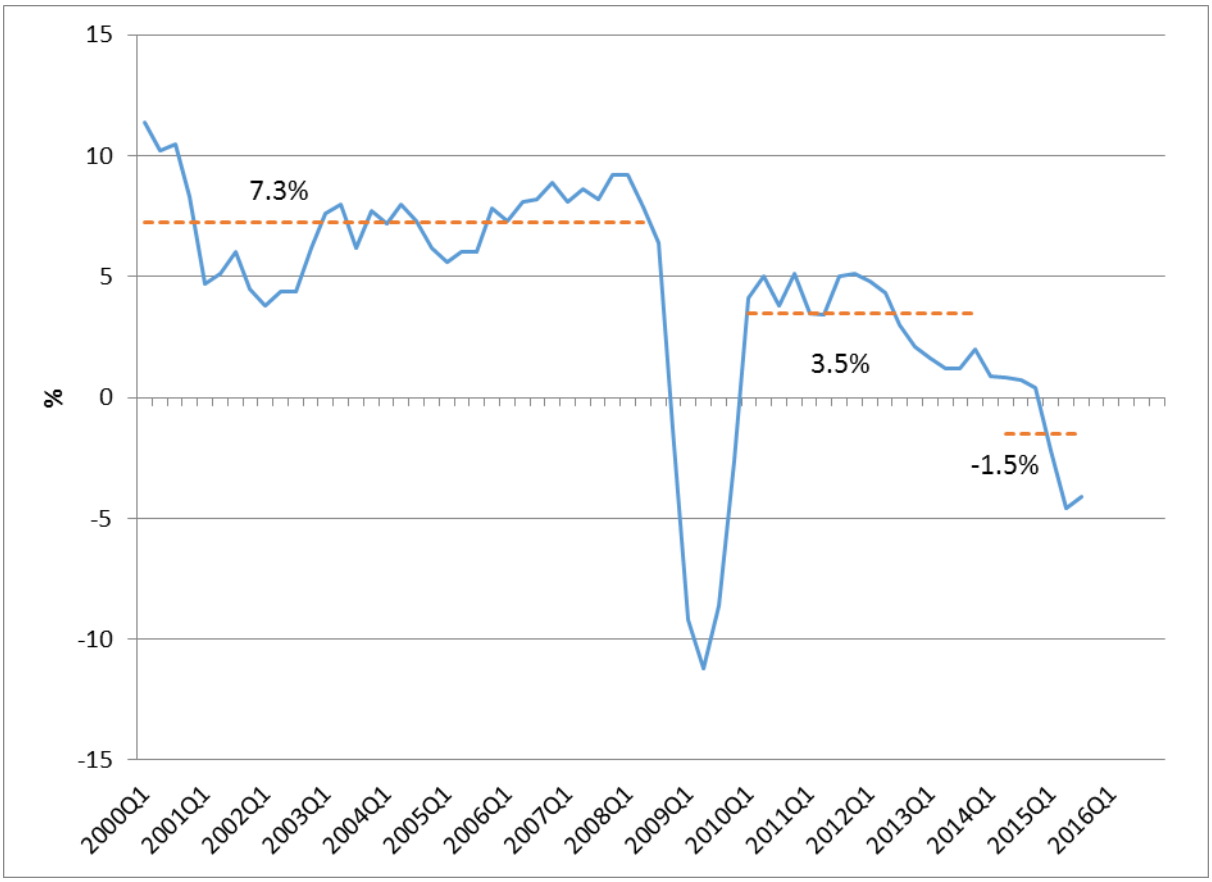
1. Introduction

In this note, I discuss Russia's long-term growth prospects in a growth-accounting framework. While lower oil prices have depressed Russia's economy in recent quarters, GDP growth has actually been decelerating since 2011 (Figure 1). Furthermore, growth prospects for the next 20 years or so are relatively dim, even if the current geopolitical tensions magically disappeared tomorrow. Russia's working-age population is set to decline markedly, fixed investments remain low and future of productivity growth is uncertain.

Combining these three trends suggest that Russia's growth potential – even under the most optimistic scenarios – is about 1–2 per cent p.a. over the next two decades. This is substantially lower than growth rates during the boom years of 2000–2008. In other words, it now seems inevitable that Russia's relative contribution to global economy will continue to decline.

Figure 1. Russian GDP growth, 2000–2016, y-o-y change



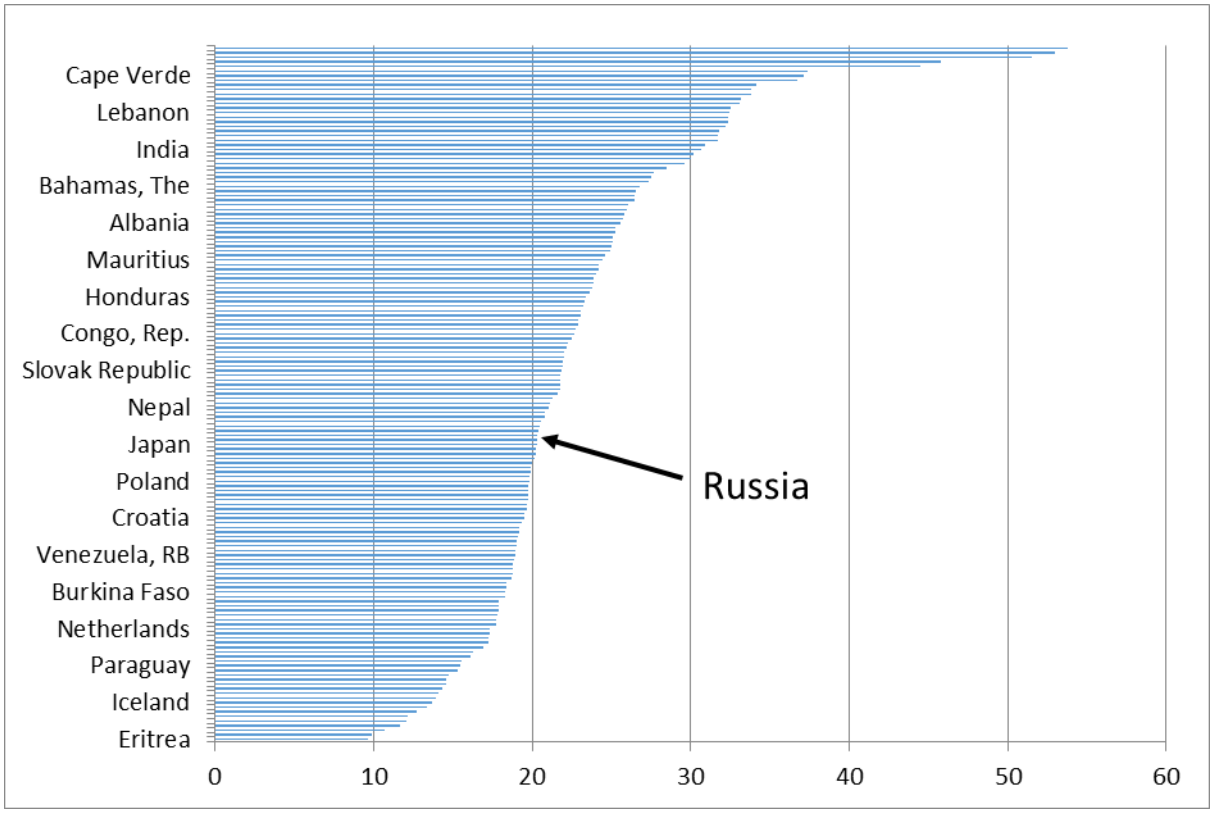
Sources: Rosstat and own calculations.

2. Recent developments

2.1 Growth slowed even before 2014

Between 2000 and early 2008, Russian GDP grew at an average rate of close to 7.5% p.a. In the wake of the global financial crisis in 2008 and 2009, Russia has failed to reacquire this high-growth dynamic, despite the fact that oil prices have recovered somewhat. Indeed, Russian GDP growth has decelerated almost continuously since 2011.

Figure 2. Fixed capital formation, % of GDP, average 2010–2012.



Source: World Bank.

While there is no apparent single reason for this slowdown, four important factors should be noted:

Russia's working-age population had started to decrease. This trend, ceteris paribus, automatically slows GDP growth.

Fixed capital investment has remained low since the global financial crisis. Between 21% and 22% of GDP, to be more precise. While this would not be problematic for a country like, say, Germany, Russia's investment ratio remains well much below that of e.g. the Czech Republic and Romania (see Fig. 2 above). Russia's investment ratio is also considerably lower than its BRIC colleagues India and China.

Productivity growth has been falling for nearly a decade. Productivity growth had slowed considerably already before global financial crisis (Voskoboynikov and Solanko, 2014).

The oil price remains high or average in the long-term historical perspective. While the oil price is nowhere near the highs of 2008 or 2013, it is also not anywhere near the lows experienced around 1998.

Deryugina and Ponomarenko (2014) use a large Bayesian VAR model to assess the relative importance of various macroeconomic factors in explaining the short-run evolution of Russia's GDP. They find that the oil price in combination with EU demand is enough to forecast and explain most short-term variations in Russian GDP. More significantly, Rautava (2013), who notes a similar dependence on the price of oil, finds that Russia's trend growth halved to approximately 2 % after the global financial crisis.

2.2 Price of oil

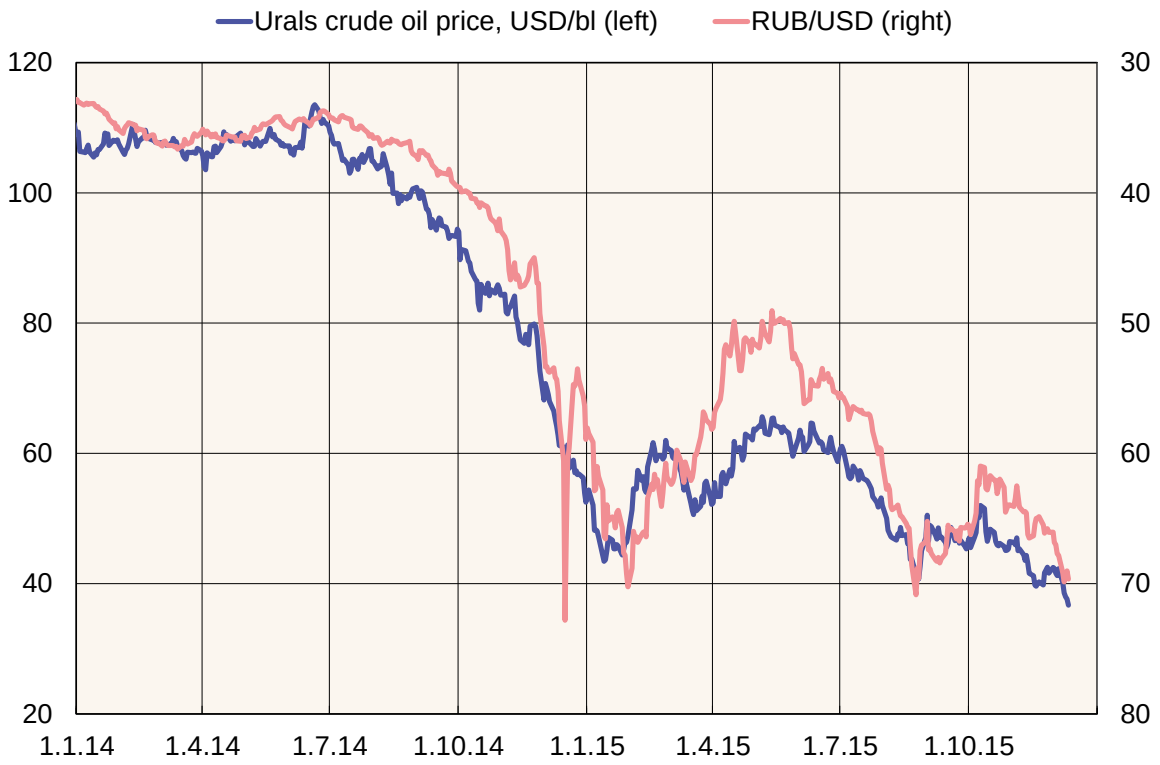
It is difficult to overstate the importance of energy prices for the Russian economy. Crude oil, oil products and natural gas brought in 70 % of Russia's export earnings in 2014. The energy sector provides Russian Federation with more than 50 % of its tax intake (at the federal level).

Figure 3 illustrates the tight connection between price of oil and the ruble's exchange rate. One can see that even in 2014, which saw the annexation of Crimea in March and subsequent sanctions, the Russian currency and financial markets remain relatively calm,[2] while the ruble goes into a steep decline as the oil price plummets. The connection is reciprocal, of course. When price of oil stabilizes and recovers somewhat in February and March 2015, the ruble finds its legs. In summer 2015, when oil prices head down again, the ruble follows suit.

If price of oil only affected Russia's terms of trade, a floating exchange rate would be effective in helping the economy adjust. In Russia's case, however, it appears that the oil price is determinative of many things, including the willingness of foreign investors to fund projects in Russia. It seems that many Russian companies have difficulty in accessing global financial markets, and their foreign indebtedness is decreasing rapidly. For the public sector, Russia's sovereign wealth funds have provided a partial answer to this dilemma. During good times they mopped up budget surpluses. In the current situation, however, these funds are being depleted. Obviously, Reserve Fund was set for exactly this purpose: to cover budget sector deficits in downturns.

[2] This relative calm was partially ensured by Central Bank of Russia interventions in the forex market.

Figure 3. Price of crude oil in dollars and ruble exchange rate from January 2014 to December 2015



Source: Bloomberg.

3. Long-run growth

In this section, I assess Russia's growth potential for the next two decades with a Cobb-Douglas production function, writing (in logarithms) growth in GDP yt as a function of growth in labor supply lt and capital stock kt. In addition, an increase in total factor productivity at may boost economic growth by allowing more efficient ways of combining labor and capital (often with more advanced technology, but also "soft" infrastructure improvements such as organizational innovations). The labor share in total output with α and capital share is denoted as β.[3] Thus, the Cobb-Douglas production function is:

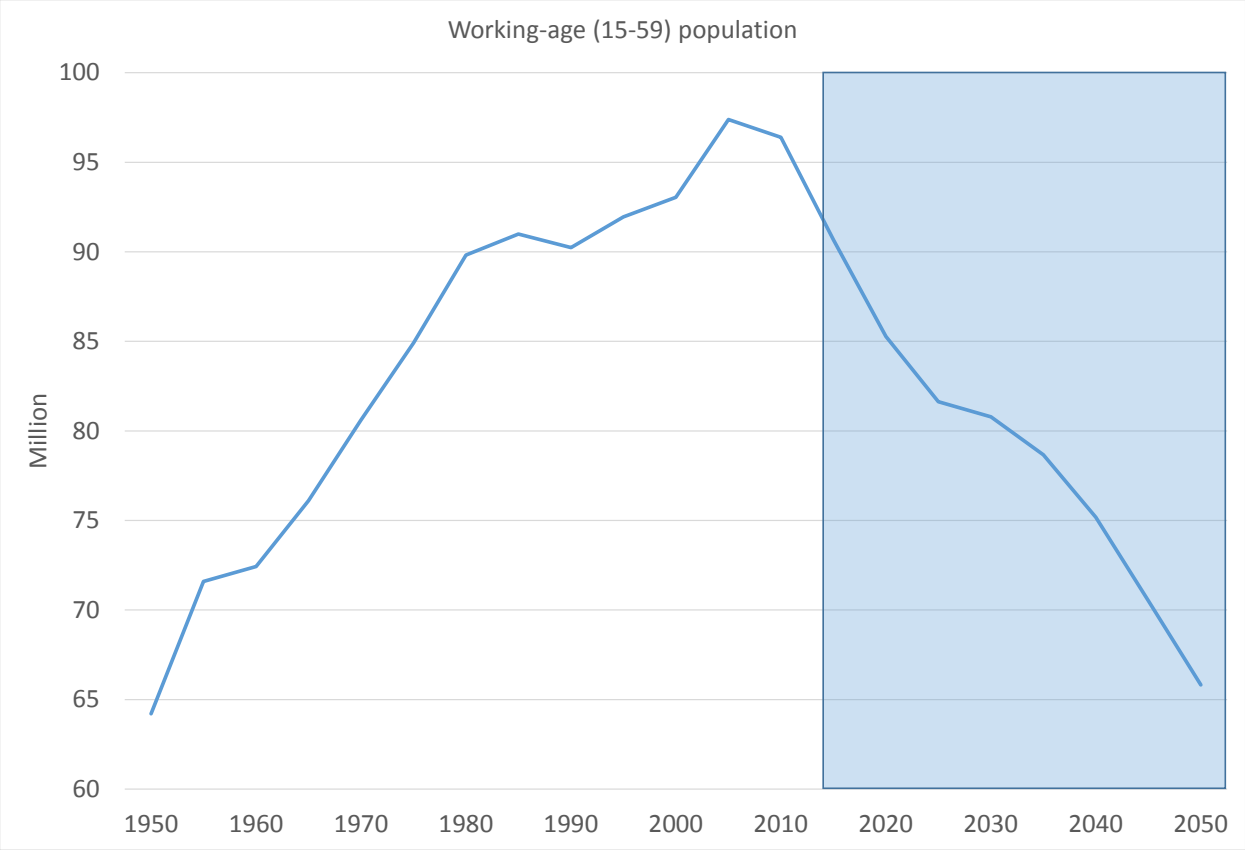
$$yt = at + \alpha lt + \beta kt \quad (1)$$

Figure 4 shows the evolution of the structure of Russia's working age population (15–59; Russia's official pension age is still 60 for men and 55 for women) from 1950 to 2050. Forecasts from 2015 to 2050 are the "medium variant" from the United Nations. While the accuracy of any demographic forecast decreases as the forecast horizon increases, we can predict the trend in the working-age population over the next 20 years quite well as almost all people who will be of working-age in this time have already been born. According to the UN prediction from July 2015, Russia's working-age

[3] Labor share of income is set to 0.65, which corresponds to Russian national accounts. The results were nearly identical when I also performed the same exercise with a labor share of 0.55.

population will decline from 90.7 million in 2015 to 78.7 million in 2035, which translates to an average change of -0.7% a year.

Figure 4. Russia's working-age (15–59 years) population in millions



Source: United Nations.

Estimating the capital stock of any country is fraught with difficulties, but these problems are accentuated in countries that underwent the transition from socialist command economies to market-based systems. Now that Russia is over two decades into its transition, however, there is some hope that Russia's capital stock can be estimated with a modicum of accuracy.

Kaitila (2015) summarizes research on Russian capital stock development and finds that estimates of it vary considerably. In addition, for the period 2003-2012 he finds capital stock to have increased on average by 3.2% p.a.[4]

In the following exercise, I assume that Russia's capital stock expands by 1.5% per annum over the next two decades. (In an alternative "Low" scenario, I assume that the capital stock declines by 1 % per annum for the next five years, due to Russia's restricted access to capital markets as outlined in the previous section.) This is slower growth than before the global financial crisis, but still presupposes resumption of investment growth.

There are a number of studies attempting to estimate Russia's total factor productivity growth. Voskoboynikov and Solanko (2014) estimate that it grew 2.5% per annum between 1995 and 2008. Kuboniwa (2011) estimates TFP growth was 2.6% per annum between 1995 and 2010. Given that average Russian incomes have increased and the country is now closer to more advanced countries

[4] He also constructs four different scenarios for Russia's GDP growth between 2015 and 2030 with GDP growth rates ranging from 1.7% to 4%.

in terms of productivity, it seems reasonable to expect that TFP growth will decelerate in the future. Also, in the aforementioned studies TFP growth was found to decelerate towards the end of the data sample. In this exercise, however, TFP is assumed (perhaps a bit optimistically) will still grow by 1.5% per annum, even in the out years of 2031–2035. In the "Low" scenario, TFP growth is significantly lower during the next five years as Russian companies are unable to invest in new capital, which is often a prerequisite to boosting TFP.

With these assumptions, I formulate two scenarios of Russian GDP growth. In the baseline scenario, current geopolitical tensions have no negative effects on Russian economy in 2015 and beyond. In the "Low" scenario, Russia suffers from economic sanctions in 2015–2020. From 2021 on the two scenarios are identical in their assumptions.

Table 1a. Baseline scenario of Russian growth

	Labor	Capital	TFP	GDP
2015-2020	-1.2 %	1.5 %	2.0 %	**1.7 %**
2021-2025	-0.9 %	1.5 %	1.8 %	**1.7 %**
2026-2030	-0.2 %	1.5 %	1.6 %	**2.0 %**
2031-2035	-0.6 %	1.5 %	1.5 %	**1.6 %**

Table 1b. "Low" scenario of Russian growth

	Labor	Capital	TFP	GDP
2015-2020	-1.2 %	-1.0 %	1.3 %	**0.2 %**
2021-2025	-0.9 %	1.5 %	1.8 %	**1.7 %**
2026-2030	-0.2 %	1.5 %	1.6 %	**2.0 %**
2031-2035	-0.6 %	1.5 %	1.5 %	**1.6 %**

In 2035, Russia's real GDP under the baseline scenario is almost 45% higher than it is now. With an initial five-year period of less favorable development under the "Low" scenario, 2035 GDP is 32% higher than now.[5]

Is this low or high growth? Between 2000 and 2008, Russia's real GDP expanded approximately 75%. Thus, it is fair to say that growth will be much slower than what most Russians have become accustomed to. But if policymakers can dampen expectations about growth, it is not a priori clear that even the "Low" scenario is particularly low. In any case, both of these scenarios imply that Russia relative contribution to global GDP is set to decline further. The political consequences of this diminished role, if any, remain to be seen.

[5] It might be more realistic to replace GDP growth rates between 2015 and 2017 with our forecast from September 2015. In this case, the GDP change would be -4% in 2015, -2% in 2016 and +1% in 2017. The new GDP growth figures affect both scenarios equally.

4. Concluding remarks

Russia's economy is in dire straits, with GDP this year is expected to contract about 4 %. Prospects for recovery depend very much on price of oil and regaining access to international financial markets. However, even if the current geopolitical tensions would magically disappear tomorrow, the Russia economy is poised for relatively low growth over the next two decades. While this is probably true for most of world's economies, compared to go-go years between 2000 and 2008 Russia's growth slowdown may be quite traumatic for some.

Notably, certain long-term factors like demography are beyond current administration's control. Others could be influenced by policy, however. For example, the investment ratio would likely be higher in an environment with better business climate. Allowing greater competition would also foster productivity. Potential enhancements in business climate and productivity would help Russia diversify its economy and perhaps add to the sophistication of products and services.

Obviously, the challenges facing policymakers is well understood inside Russia, too. (For a recent exposition along these lines, see Kudrin and Gurvich, 2015.) For now, calls for market-friendly reforms (even from well-connected insiders like Alexey Kudrin) have gone unheeded. The current administration's priorities are elsewhere.

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