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Torbjörn Becker



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Russia's Oil Dependence and the EU

*Torbjörn Becker*¹

Abstract

Russia's macro economic fate has for a long time been connected to its vast natural resources and oil in particular. This paper shows just how deep Russia's dependence on oil is when it comes to its macro economic development (at least) since the break up of the Soviet Union. Although many analysts and policy makers discuss Russia's oil dependence, not everyone fully appreciates its quantitative importance and what it means for Russian policy making. This paper provides a detailed analysis of the link between Russia's economic growth and international oil prices, both when it comes to actual outcomes and the forecasts that are crucial for policy makers and other economic actors. The strength of the relationship is staggering. Depending on measures and time periods used, international oil prices account for 50 to over 90 percent of Russia's actual growth or forecast errors. Since international oil prices are exogenous to Russian policy makers it means that they do not really control the fate of their economy. Good macro economic management, in particular a flexible exchange rate, can mitigate some macro economic volatility that are due to changes in international oil prices but structural reforms to support diversification are needed to take control of the country's macro economic future. Investors and consumers in the EU could be Russia's prime partners to make this happen and it would benefit a vast majority of citizens both in Russia and the EU. However, it will require significant policy changes on both sides that currently look doubtful for other reasons than simple economics.

· Director of the Stockholm Institute of Transition Economics (SITE) at the Stockholm School of Economics, www.hhs.se/site. Email: torbjorn.becker@hhs.se.

¹ This paper is a forthcoming chapter in EU Economic Stagnation and Political Insecurity, edited by Steven Rosefielde. The author would like to thank the editor for his patience, careful reading and valuable comments. All remaining errors are of course mine alone.

Introduction

This chapter makes two simple but important points, first, Russia's oil addiction runs much deeper than most understand, and second, close ties with the EU will remain Russia's best hope to change this for the foreseeable future.

Although Russia's oil dependence is the topic of many discussions of the Russian economy, few understand just how deep this runs and what it means to the income of Russia both in the short and the long term.² This chapter will show how striking the correlation between international oil prices and the income of Russia is. This correlation goes far beyond what can be expected from sectoral statistics or regular growth accounting and should once and for all lay to rest any claims that "oil" is not so important for the economic development of Russia.

Similarly, the power of economic geography or strength that countries can derive from having prosperous neighbors should not be underestimated.³ Russia is of course an enormous country with many neighbors, but the most accessible and prosperous of the markets in their neighborhood are still the countries that are part of the EU (despite its inability to deal with the aftermath of the financial crisis and even after the UK leaves the union.)⁴ Instead of making these countries part of a problem that includes sanctions and poor political and business relations, Russia need to rethink its approach towards the EU. This may be hard for a military superpower, but should be easy for any policy maker focused on economic prosperity.

The chapter first details exactly how important international oil prices are for the economic fate of Russia. The subsections in the first part deal with how difficulties in forecasting oil prices spill over to forecasts of Russian income; if Russia would be better off without oil; and how Russian policy makers learnt an important lesson on how to deal with falling oil prices in the global financial crisis in 2008/09. The chapter then describes the strong and important economic ties that exist between Russia and the EU despite recent sanctions before moving on to what needs to be done in the short and longer term to secure economic growth in Russia moving forward. Finally, there are some concluding remarks that sum up the discussion in the chapter.

² Becker (2014) provides some quantitative estimates on the relationship that are less detailed than what is presented later on in this chapter.

³ There is a long list of papers that estimate and theoretically explain how and why gravity models, where distance, size and development of markets are important for bilateral trade and investments, see for example Anderson (2010) or Kleinert and Toubal (2010). Becker (2016) takes a closer look at the investments between Sweden and Russia.

⁴ Becker (2015) details the trade links between Russia and the EU.

Russia's macro economic legacy

Russia's macro economic performance since the break up of the Soviet Union in 1991 has had several ups and downs, but overall, per capita income has grown significantly. There are many descriptions of what caused the ups and downs as well as the increase in income, ranging from the effects of shock therapy to the political leadership or the pace of economic reforms in general.⁵ Although they are all important factors, there is a much simpler “model” of what has been behind much of the ups and downs and the significant increases in income—the rise and volatility of international oil prices. Most scholars, analysts and policy makers would acknowledge that “oil” plays an important role for Russia's economic development. However, not everyone understands the truly fundamental role *international oil prices* have had in explaining both short-term fluctuations and long-term growth in income. The fact that it is international oil prices rather than Russian decisions on how much oil to produce and sell is extremely important since it means that the fate of the Russian economy is in the hands of the international oil market rather than Russian policy makers (regardless of whether or not they renationalize Russian oil companies.)

A common argument against the importance of “oil” for the Russian economy is that only around 10 percent or so of real activity is related to the oil industry and therefore it simply cannot be so important. This argument has several shortcomings, first the purely statistical issue of measuring the oil sector is not trivial, since it will always involve more or less arbitrary boundaries between sectors; are the IT services used in the oil sector recorded in the IT sector or the oil sector; are the houses built to accommodate oil workers part of the real estate sector or the oil sector and so on. This problem of boundaries between sectors is neither unique to the oil sector, nor to Russia, but the point is that simple sector statistics are not always useful for understanding macro economic dynamics and in the case of Russia and its oil sector statistics, it is extremely misleading.

The world's simplest macro “model”?

A central hypothesis in this chapter is that international oil prices have governed Russia's macro economic performance for a long time. This hypothesis can be tested empirically. In this section, we will explore just how far this hypothesis takes us in understanding Russian income dynamics over the last couple of decades. An even longer-term hypothesis would be that international oil price fluctuations were also a key determinant of the fate of the Soviet Union but this will not be considered here.⁶

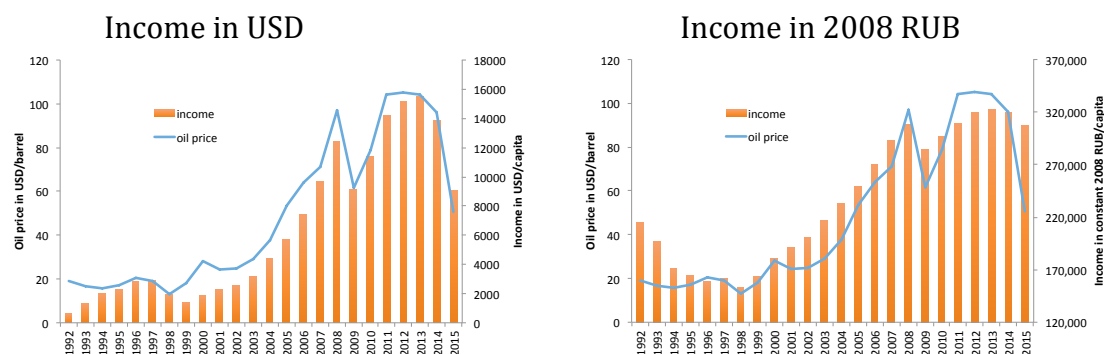
Figure 1 provides the first evidence of the strong correlation between international oil prices and Russian incomes measured both in terms of current USD and constant (2008) RUB. For the readers that prefer income measured in

⁵ For different accounts of Russia's economic development, see for example, Rosefielde (2007), Ofer (2010), Popov (2010) or Åslund (2012).

⁶ See for example Gaidar (2010).

purchasing power parity (PPP) terms, it can be noted that such a chart would be somewhere in between the two versions shown, but closer to the 2008 RUB chart than the USD chart. The extremely close co-movement between dollar income and international oil price is of course due to both changes in real ruble incomes and the exchange rate between the ruble and the dollar. The latter may not sound too important to readers that live in countries that have their own stable convertible currencies, but for many Russian citizens, dollar income was what mattered for a long time (and for some, still is).

Figure 1. Oil prices and GDP per capita



Source: IMF (2016a)

The variables shown in Figure 1 have strong trends and we can suspect that they are not stationary from a statistical point of view. Formal unit root tests of the variables cannot reject the null hypothesis of a unit root in all of the plotted series. Furthermore, statistical tests indicate that oil prices and income measured in USD are cointegrated, while oil prices and real ruble income are not.⁷ The detailed account of these more technical time series considerations are omitted here but we use this insight in the statistical analysis that follows.

Table 1 contains descriptive statistics of three series: international oil prices, Russian income measured in U.S. dollars, and Russian income measured in constant 2008 rubles. The statistics for the series are shown in levels, first differences and growth rates, where the two latter are common transformations used when running regressions on time series that are not stationary in levels. The first observation from Table 1 is how volatile oil prices were between 1992 and 2015, ranging from a low of 13 dollars per barrel to 105 dollars per barrel. This volatility can also be seen in income measured both in U.S. dollar and real ruble terms. Although average income measured in levels, differences and growth rates for both dollar and rubles have been higher in 2000-2015 compared with 1992-2015 (with one exception), volatility has remained high in both the longer and shorter sample.

⁷ The tests are based on Johansen (1991).

Table 1. Descriptive statistics on oil price and income

	Levels			First differences			Percent growth rates		
	oil price	USD income	2008 RUB income	oil price	USD income	2008 RUB income	oil price	USD income	2008 RUB income
1992-2015									
min	13.1	614	153239	-45.5	-4818	-25093	-47.2	-34.7	-12.8
max	105.0	15531	322599	25.9	2826	23037	57.0	115.0	10.5
average	48.8	6379	236968	1.4	367	4006	7.8	16.6	1.8
median	33.3	3783	224797	1.3	563	10174	7.9	24.6	4.2
st. dev.	33.4	5095	62234	16.0	1782	14337	26.3	32.1	6.4
2000-2015									
min	24.3	1893	180814	-45.5	-4818	-24330	-47.2	-34.7	-7.9
max	105.0	15531	322599	25.9	2826	23037	57.0	37.9	10.5
average	64.4	8612	268863	2.1	477	8977	10.6	14.6	4.1
median	63.0	9094	288578	5.4	794	12516	13.2	24.7	5.1
st. dev.	30.4	4854	49689	19.2	2110	12556	28.0	21.8	4.9

Source: Author's calculations based on IMF (2016a) data

Although we could estimate vector error correction models with a cointegration relationship we settle for simple bivariate OLS regressions on first differences or percent growth rates given the limited number of observations (but still acknowledging the non-stationarity of the series in levels). This “model” lacks many standard variables that can be included in growth regressions, but again, the limited number of observations is a good reason to not add a long list of explanatory variables that may or may not be exogenous. The international oil price is however an exogenous variable and the direction of causality is not an issue in the regressions presented below. Nevertheless, the regression results should only be regarded as a way to provide relatively reasonable quantifications of the relationships between Russian income and international oil prices that we see in Figure 1 and not interpreted as a full-fledged macro model of Russia.

Table 2 shows one-variable regressions of USD or 2008 RUB income on international oil prices in first differences and growth rates for the full sample (1993-2015) and the more recent sample (2000-2015). The more recent sample has the advantage of omitting the rather unstable initial part of Russia's transition process and it also coincides with the current political leadership's tenure in the highest political offices. Although the regression coefficients based on growth rates are easier to interpret, it does not necessarily produce the most accurate or powerful relationships from a statistical point of view but the difference in explanatory power between the model of first differences and growth rates are not substantial. Instead, all the regressions except one generate high or very high adjusted R-squares and the coefficients on changes in international oil prices are significant at the 1 percent level in all but one regression for which the R-square is also low. This is the regression using

percent growth rates and USD income and the result is due to a very large outlier in the first year of the regression.

Table 2. One variable regressions of income on oil price

Dep. Vars.	First differences		Percent growth rate	
	USD income	2008 RUB income	USD income	2008 RUB income
1993-2015				
oil price (same trans.)	105.03***	596.68***	0.4311*	0.1653***
constant	221.96*	3182.44	13.20*	0.4646
Adj. R-sq.	0.88	0.42	0.08	0.43
# Obs	23	23	23	23
2000-2015				
oil price (same trans.)	105.72***	553.27***	0.6862***	0.1399***
constant	260.23	7842.61***	7.32***	2.64***
Adj. R-sq.	0.92	0.69	0.77	0.62
# Obs	16	16	16	16

Source: Author's regressions based on IMF (2016a) data

In short, changes in international oil prices explain between half and two thirds of the variation in income changes or growth. In the extreme case of first differences of USD income, the adjusted R-square is over 90 percent, i.e. less than 10 percent of the variation in dollar income is left unexplained once changes in international oil prices are included in this one-variable regression. This is nothing short of a remarkable one-variable macro “model” for any country or time period.

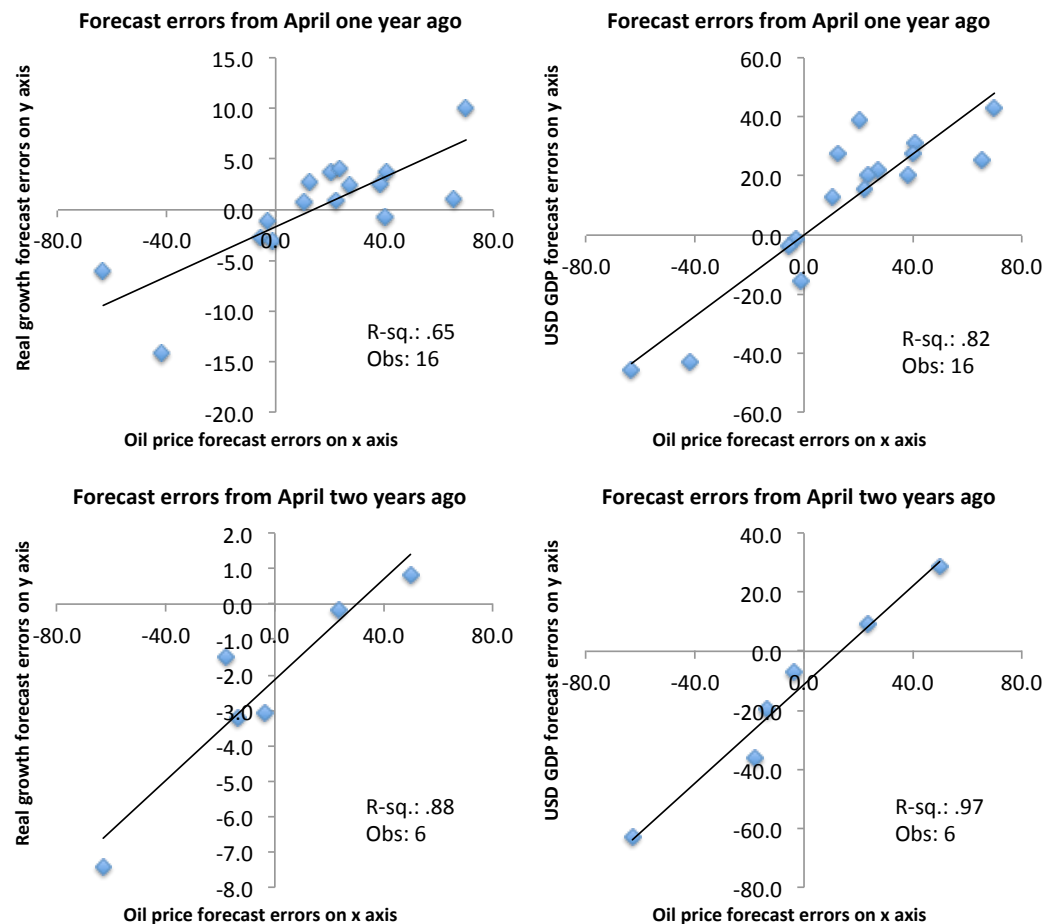
For sure, other factors than international oil prices impact Russian income growth, but it is undeniable that no other single factor would come close to the importance oil prices has had on economic growth over the last decades. One could be tempted to say that this strong relationship between income and oil prices means that Russia has a very simple model at hand to forecast its economic future, but as we will see in the next section, this is not the case.

Or not so simple?

Although the estimated macro “model” only includes one variable, the variance in international oil prices implies that growth forecasts also have very large variances. In other words, a significant share of Russia's macro economic volatility comes from oil prices so Russian economic policy makers are “hostage” to the international oil market to a very substantial degree when they make plans for their own economy. Of course, most modern, open economies are subject to external shocks, but the concentrated exports of a single set of commodities with very volatile prices makes the Russian situation particularly difficult. Russian policy makers are of course not unaware of this situation and

talks of diversification have been around forever in Russia and a few words on this will come later in this chapter.

Figure 2. Forecast errors in income and oil prices



Source: Author's calculations based on IMF (2016b), World Economic Outlook data from all vintages April 1999 to April 2016.

Figure 2 illustrates the extent to which policy makers are in the hands of international oil markets when making their forecast of the Russian economy. In particular, the scatter plots show the IMF's World Economic Outlook forecasts of oil prices and real growth of Russian GDP. The two top panels show the one-year ahead forecast and the bottom panels the two-year ahead forecasts. Data is available since 1999 and the one-year ahead forecast is thus available for 16 years. However, the two-year ahead forecasts are only available for six years but still included here as an illustration that if anything, the relationship grows stronger with the forecast horizon. The scatterplots all indicate the importance of international oil prices for Russian income dynamics. Between 65 and 95 percent of all the forecast errors of Russian GDP can be derived from changed forecasts of international oil prices. Even if policy makers know that oil prices are important for the Russian economy, these are staggering numbers that imply

that Russian policy makers have not really been in charge of their country's economic fate for a long time. This does not automatically imply that Russia would have been better off without oil and some counterfactuals are simulated below to illustrate this point.

Russia without oil-driven growth

In addition to the above discussion of the volatility international oil price fluctuations bring to the forecasts and outcomes of Russian income, there is a long literature on the so-called natural resource curse.⁸ In short, the presence of natural resources and the rents they provide may prevent countries (read political leaders or special interests) from developing proper institutions and strategies that would allow non-extractive parts of the economy to prosper because this could make it harder to control resource rents. The rigidity impedes institutional development and income growth by transforming what should be a blessing into a curse.

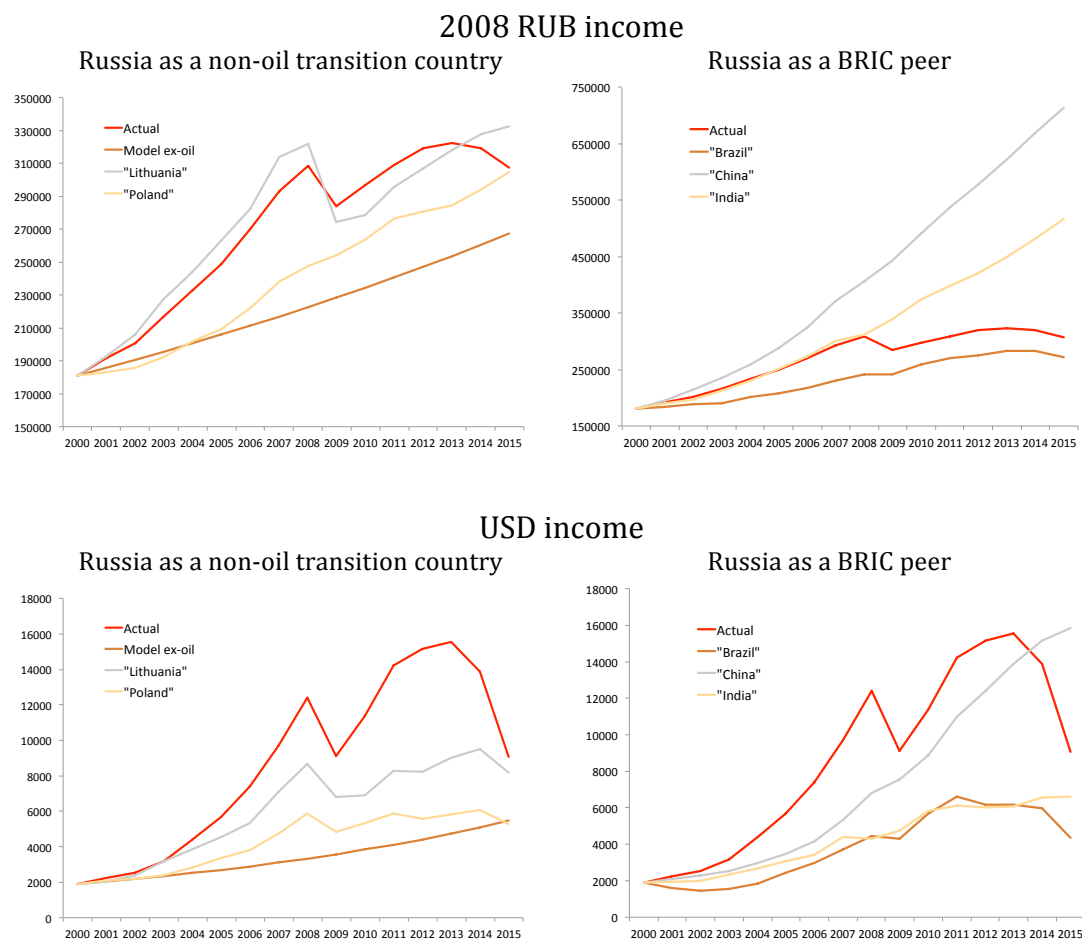
We do not have a counterfactual to what Russia's growth would have been without oil or how that would have generated a different set of institutions, economic policies, or growth over the last couple of decades. However, we can run alternative growth scenarios for the last 15 years by using one of the models estimated above and by using other countries' growth experiences over the same time period to illustrate how Russian income would have developed with different growth paths. Since we know that there is a significant difference in the growth trajectories for U.S. dollars and real (2008) ruble income we do the same exercise based on both real growth in domestic currency terms and in terms of U.S. dollars.

There are two groups of countries that seem relevant as the basis for alternative Russian growth scenarios. First, we have the set of successful transition countries that like Russia emerged after the collapse of communism and the break up of the Soviet Union. This group of countries is here illustrated by the Polish and Lithuanian growth experience. Poland being a more slow and steady example and Lithuania a high growth, high volatility example among the transition countries in Eastern Europe. Second, we have the BRIC countries that Russia is often bunched together with for the simple reason that they are the four largest countries that are not among the high-income group of countries and despite the fact that the BRIC countries differ in many other important dimensions, including per capita GDP. This latter note is particularly important if we believe in catch up growth or income convergence.

⁸ Sachs and Warner (2001) discuss how natural resources crowd out other exports and Boschini, Pettersson and Roine (2007) show how institutional quality interact with different types of natural resources to sometime reverse the curse.

Figure 3 provides the counterfactual simulations of how Russian real ruble and U.S. dollar income would have developed if we apply the path of growth rates of the countries mentioned above to the common starting point of Russia in year 2000. In addition to the different countries, the left panel also includes the prediction generated by the models estimated in Table 2 if we take out the impact of changes in oil prices. This simply amounts to using the estimated constants as the yearly growth rate. For the simulation of real ruble income we use the real growth rates of the respective countries and regression and similarly for U.S. dollar growth rates. It is important to understand that real domestic currency and U.S. dollar growth rates differ quite significantly for the countries and it highlights the importance of exchange rate policies in connection with growth discussions.

Figure 3. Russian income with alternative growth paths



Source: Author's calculation based on IMF (2016a)

In the top left panel, Russia's actual real ruble income is compared to the hypothetical cases of Lithuanian and Polish growth as well as the models predicted growth had oil prices not changed over the period. It is rather striking how similar Russia's actual growth path is to the simulated Lithuanian counterfactual, with very strong growth prior to 2008, then the collapse at the time of

the global financial crisis and subsequent return to more modest growth. This is in stark contrast to the Polish counterfactual, where the slow initial growth picks up and remains steady over the 2008/09 years. In 2015, the Polish tortoise has caught up with the Russian hare and basically end up in a dead race while the Lithuanian high growth, high volatility path comes in first place. The Russian model counterfactual without changes in oil prices generates a growth rate that (of course) is steady but too slow to match the other growth paths.

Turning to the same countries but looking at USD income in the lower left panel, the effect of exchange rates becomes very evident. Russia experienced a much higher growth path until 2013 when income in USD terms was dramatically higher than it would have been for the other growth paths. Then the ruble halved its value relative to the USD and in a very short time period, this growth path was only marginally above the Lithuanian counterfactual (while still well ahead of the income level that would have resulted with Polish USD growth or model without oil price changes).

In the right hand panels we turn to counterfactuals based on Russia's BRIC peers. Here the importance of exchange rates and what income to focus on becomes even starker. Looking first at real ruble income, had Russia experienced Chinese growth rates over the period, real incomes would have been 130 percent higher than the actual Russian real income level in 2015, while Indian growth would have led to 68 percent higher income in 2015. Only the other natural resource rich BRIC country, Brazil, falls behind in income.

However, comparing how USD income develops paints a very different picture. According to this metric, Russia outpaced all the other BRIC countries, including China, through 2013, but was overtaken by China in 2014 and 2015 when the ruble exchange rate plummeted. It is interesting to note how steady the Chinese growth rate is compared to the other BRIC countries both in terms of real local currency and USD.

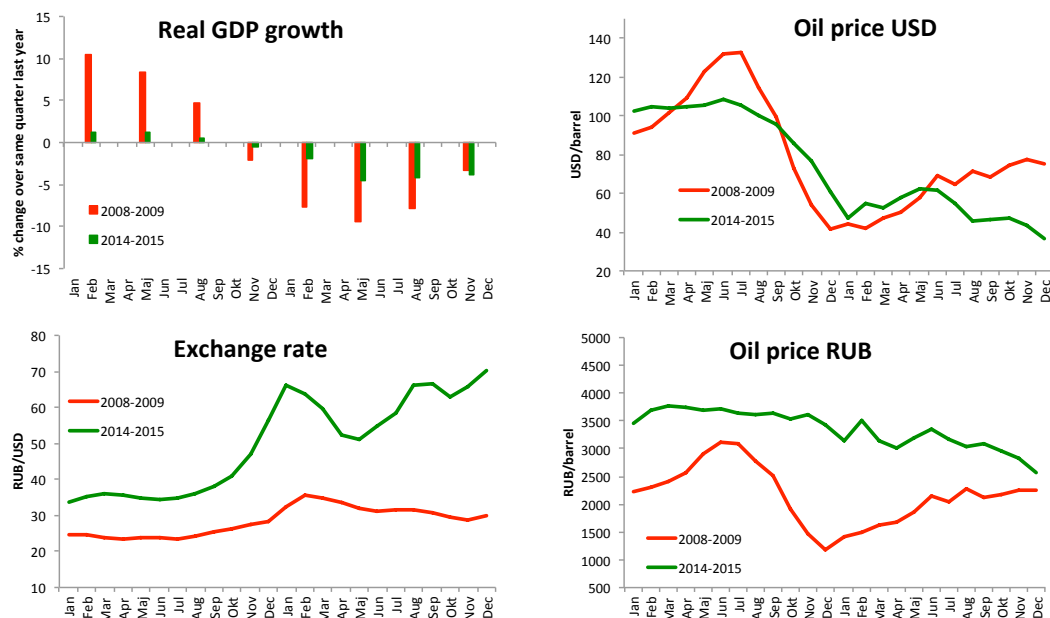
This comparison of different counterfactual growth paths leads to a number of conclusions. First of all, the currency used when comparing income and growth paths matters much more than most would expect. When income levels in USD are compared, only China is ahead of Russia in 2015, but for most of the period, Russia was the leader of the pack. Focusing instead on real domestic currency incomes, Russia is a long way behind the Chinese and Indian growth experience and is more or less at par with the steady but not so fast growing Polish experience. The second observation is that the even slower and steadier model without changes in oil prices is far behind the actual Russian income level. In other words, the volatility in income that changes in oil prices bring has at least generated a higher average growth rate, so there has been some sort of reward for the added uncertainty. This is of course a result of looking at a period when oil prices on average has increased, which has not always been the case and is a very uncertain proposition for the long-run given the shift to other energy sources.

In short, this exercise suggests that it is far from clear that Russia would have been better off in terms of income without its oil in the last couple of decades. At the same time, it also points to the vital role proper exchange rate management has to mitigate the international oil price induced volatility on real income. Russia has two recent falls in real income with rather different management of the exchange rate that will serve to illustrate this further in the next section.

Crisis management 2008/09 vs 2014/15

Figure 4 summarizes how the key macro variables developed from January 2008 to December 2009 and contrast this with how they moved in the same months of 2014 and 2015. It is clear that Russian policy makers learned important lessons on how to manage the exchange rate in the 2008/09 crisis. This was of great importance in the more recent downturn. The key policy difference between the two recent crises was to let the exchange rate adjust more rapidly and in line with market forces to keep international oil prices measured in rubles more or less constant. This helped preserve international reserves at the central bank and protect the fiscal account from deteriorating rapidly in response to a sharp drop in USD oil prices. Finally, it facilitated a reorientation of the real economy from imports to exports, which reduced the risk of a negative trade balance that would put additional pressure on international reserves.

Figure 4. Macro economic performance 2008/09 vs 2014/15



Source: Author's calculations based on CBR (2016) and IMF (2016a) data

There was of course a price for letting the exchange rate adjust in response to the oil price shock, which is that USD incomes experienced a very large decline.

This hurts consumers that want to buy imported goods or travel abroad, it generate negative returns for investors that do their accounting in dollars, and it increases costs for households and companies that have borrowed in dollars. For some households and companies this amounted to a significant loss in welfare or profits but for the macro economy at large it is the only sustainable policy. Propping up an overvalued exchange rate could have led to massive losses of international reserves at the central bank and a more depressed real economy.

The lesson is that Russia's oil dependence brings volatility and that not only policy makers at the central bank need to realize this but also households and companies in order to reduce the impact of future oil price volatility. The only way to really disconnect the macro economy from international oil prices is to sell off the natural resource assets to foreign investors that would then have to carry the risks of future oil price volatility. However, this strategy seems to have little support at the highest political level in Russia. Alternatively Russia could build up a portfolio of other financial instruments that pay out when oil prices fall, which would be similar to what has been suggested for Chile with its high dependence on international copper prices.

As long as neither of these policies is implemented, the only remaining macro economic insurance Russia has is a flexible exchange rate. This finally seems to have dawned on the key policy makers in the most recent downturn. However, some pedagogical work remains to explain this to households and companies so they also adjust their decisions accordingly. For the longer-run, good macro economic management to mitigate oil price volatility should be combined with structural policies that help develop other sectors of the economy. In short, this is the old diversification solution to the problem, and here the EU can play a positive role if Russia lets it, and the economic links and importance of the EU is the topic of the next section.

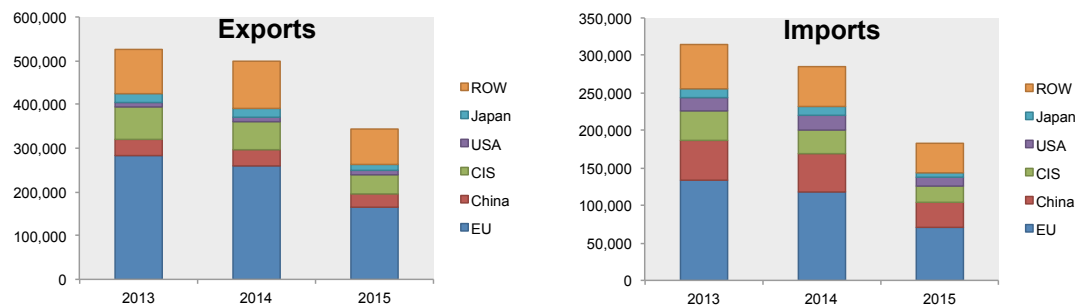
Why EU links are important for Russia

Geography is an important determinant of trade and investment flows between countries. Moreover, large markets tend to generate more flows than smaller. These are some of the relatively straightforward conclusions from standard gravity models that are used to predict both trade and investment flows. This is also the case for Russia that has a very large share of its trade with the countries that make up the EU. EU countries are also the home to the major foreign investors in Russia, although investment data are complicated to interpret for reasons that we will discuss below. If Russia is serious about diversifying its economy away from oil, the EU offers both the prospect of a future market for new Russian exports as well as a source of investments that can bring both money and knowledge that can be used to develop these new export goods.

Trade patterns

Figure 5 shows how the destination and source of Russian exports and imports have changed over the last three years. The EU's position as Russia's major trading partner is unthreatened despite significant declines in the share of exports and imports to and from the EU that has come with the different sanctions both the EU and Russia have introduced. In 2013, the EU accounted for 54 percent of exports and 43 percent of imports to Russia and two years later this was down to 48 and 38 percent respectively. This is still well ahead of China that accounted for 19 percent of imports and only 8 percent of exports in 2015, or the CIS countries that together accounted for around 12 percent of both imports and exports. Russian trade with the USA and Japan in contrast only ranges from 2 to 6 percent of imports and exports.

Figure 5. Russian trade by country



Source: Author's calculations based on IMF (2016c)

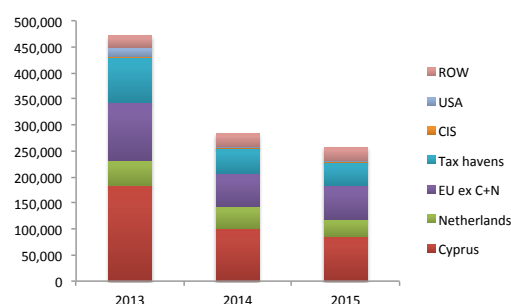
Figure 5 also lays bare the massive drop in trade that Russia experienced from 2013 to 2015 due to the fall in oil prices (that affected exports), massive currency depreciation (that reduced imports), and sanctions. From 2013 to 2015, total exports declined by 35 percent and imports by 42 percent. Since the sanctions between Russia and the EU happened at the same time as the general macro shock of falling oil prices it is hard to disentangle the more precise effect sanctions have had on trade, but the reduced share of trade with the EU indicate that sanctions have mattered but Russia and the EU are far from shutting down trade completely.

However, when we look more closely at how much exports and imports have declined with different trading partners, it is noteworthy that the decline in trade with EU is basically matched by the decline in trade with CIS countries. This suggests that the trading partners own macro economic situation also contributes to the changes in trade with Russia, and some of the decline in trade with the EU can be the result of the macro economic difficulties some EU countries have experienced. This comes back to the value of having prosperous neighbors when geography matters to trade. A stagnant EU is not in the interest of Russia any more than a stagnant Russia is of interest to the EU from an economic perspective or the welfare of the citizens both in Russia and the EU.

Capital flows, FDI, knowledge transfers

The other important economic connection between the EU and Russia is in terms of capital flows and investments. During the years of high and ever increasing oil prices Russia did not really need extra inflows of foreign exchange, but there was still ample scope to import ideas and know-how to support more wide-ranging economic development. Now with relatively low oil price and an even stronger need to find new products to export to diversify the economy, attracting foreign investments should be high on the agenda for Russian policy makers. Figure 6 shows that EU countries have been the prime source of foreign investments in Russia, although the data on the source of investments is of mixed quality since much of international capital flows go through tax havens. We know that Russian companies and individuals often place assets in tax havens in general and Cyprus in particular. It is therefore no surprise that Cyprus is the country with the largest recorded FDI stock in Russia. However, the flows from Cyprus are not likely to come with much foreign know-how but simply bring back Russian money that has been parked outside the country until a suitable investment opportunity has appeared. Much of the investment from the Netherlands can also be expected to be a result of use of offshore havens and there is also a large part that comes from what we all think of as tax havens outside of the EU. When these flows are parsed, EU countries emerge as the largest foreign investors in Russia, often in the form of mid-sized German companies or multinationals. These types of investments can bring both new technologies and management practices with the money to the Russian market and help modernize the economy and make it more competitive on international markets.

Figure 6. Source countries of FDI stock in Russia

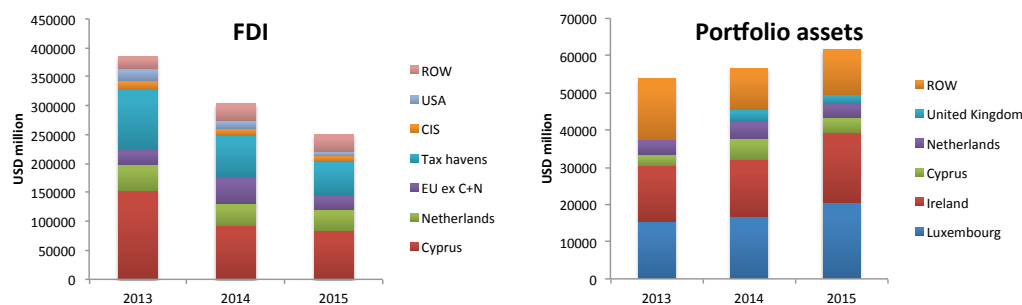


Source: Author's calculations based on CBR (2016)

Russian companies and individuals also make investments abroad as can be seen in Figure 7. Tax havens seem to also dominate the list of destinations for such flows. Nevertheless, the haven countries are in many cases EU countries and destinations Russian investors trust with their money. If sanctions and other policies make economic transactions more uncertain for Russian investors, this carries a cost to all investors that want to do business in Russia. Although it is

hard to quantify the costs associated with this uncertainty, we can be sure that the mere discussion of sanctions contributed to an increase in uncertainty for any transaction that involved Russian entities. Recorded outward FDI stocks of around 250 billion USD in 2015 are significantly higher than the 60 billion or so stock of portfolio assets, but there is a stark difference in trends between 2013 and 2015; FDI stocks have declined by 35 percent while portfolio assets have increased by 15 percent. The reason is not obvious but it could possibly be the case that the increased uncertainty has led to a shift to assets that are easier to move on short notice.

Figure 7. Russia's foreign investment stocks abroad



Source: Author's calculations based on CBR (2016)

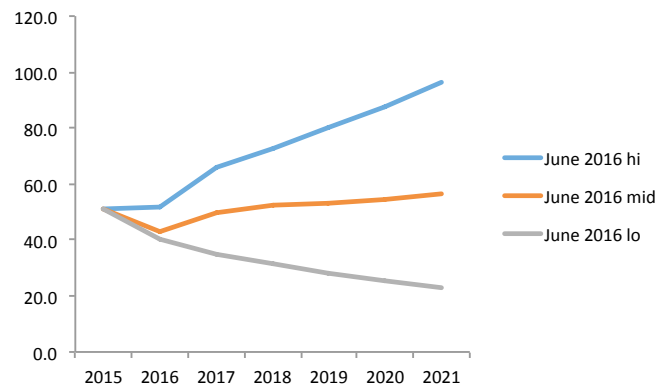
Looking ahead

Short and medium term macro

The volatility in oil price forecasts will continue to affect Russia in a major way in the short and medium run. In IMF's June 2016 forecast of oil prices the baseline projection was revised up from the forecast presented in the WEO in April, which is a bit of good news for the Russian economy. However, the projected level is still rather low at around 50 USD/barrel over the coming years. More problematic is that the uncertainty of the forecast continues to be very high. The 68 percent confidence interval for mid-2017 goes from around 35 to 66 USD/barrel while the 99 percent interval goes from a low of 20 to a high of 100 USD/barrel. And this is just a 12-month ahead forecast. No confidence bounds are provided for longer forecast horizons. In Figure 8, the 68 percent confidence interval's high and low prices are plotted. Since no confidence intervals are presented after 2017, it is assumed here that prices grows at 10 percent per year in the high oil price scenario while they decline by 10 percent annually in the low oil price case (which is very modest given the 12-month uncertainty).

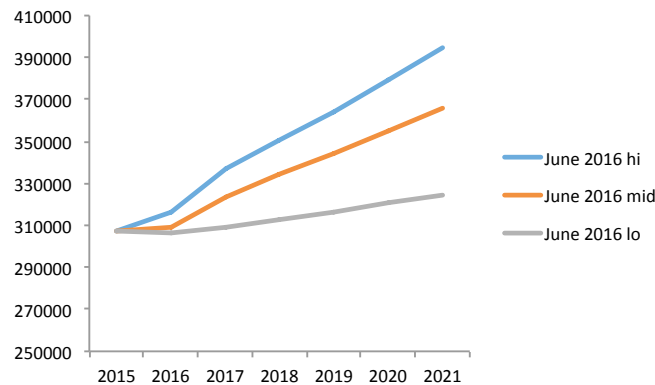
The different oil price paths can be translated into real GDP growth projections by using the estimates of the one-variable model presented in Table 2 based on growth rates of real income and oil prices over the last 16 years. The three oil price paths thus generate three paths for real income as is shown in Figure 9.

Figure 8. Oil price forecast mid-2016



Source: Author's calculations based on IMF (2016a)

Figure 9. Model forecast of real income in 2008 RUB



Source: Author's calculations based on IMF (2016a)

None of these scenarios imply that the Russian economy implodes, but the income level is 18 percent lower in the low oil price scenario compared to the high oil price scenario. In the low oil price scenario the real GDP growth rates is around 1 percent while the high oil price scenario leads to growth of a bit more than 4 percent per year. The three percent difference in average growth adds up to a cumulative 18 percent difference by 2021. To put this in perspective, an 18 percent increase in PPP income today would correspond to Russia moving up from ranking 48th in international income rankings to match Slovakia in 39th place while an 18 percent drop would move Russia down to Romania (59).

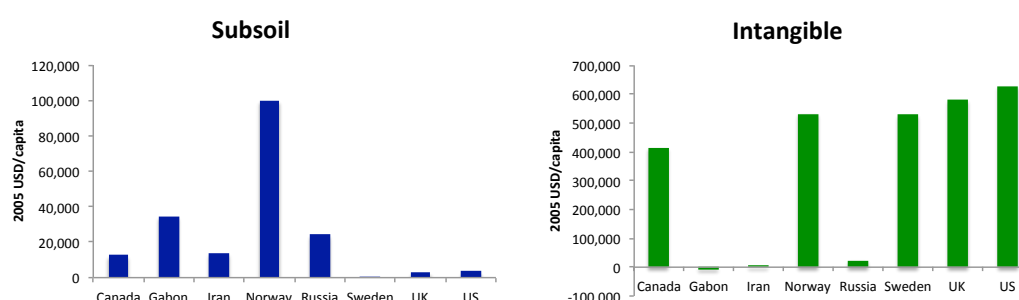
These scenarios do not include the very sharp swings in oil prices we have seen over the last decade and it will be important that Russian policy makers stay the course on flexible exchange rates in the event of future gyrations of oil prices. The political leadership should back this policy as well and educated households and companies to not expect to be saved every time the exchange rate moves in an unfavorable direction.

A flexible exchange rate is of course not a way to completely offset the real effects of low oil prices and the government should make sure that fiscal priorities are towards spending that help growth both in the short and long run. This would suggest that spending on human capital (education, research and health) rather than military spending should be protected in times of declining real revenues. These short-run considerations should be complemented by structural reforms that generate long-term growth and some possible areas are discussed below.

Long-term structural reforms needed

Russia's natural resources have been an important growth driver for a long time and contribute significantly to the country's wealth. However, Russia's natural resource wealth is in itself not enough for Russia to become a high-income country. Figure 10 shows some of the sources of wealth different countries possess as compiled by the World Bank (2011). The study looks at a long list of resources countries have to generate income. One category is subsoil wealth, which for Russia would include, inter alia, oil, gas and minerals. The combined value of all known subsoil assets are added together and divided by the countries population to arrive at the estimates presented in the left panel of Figure 10. Norway is a resource rich country with a small population, so the per capita value of its subsoil assets is substantial at around 100000 dollar. Russia has more subsoil assets but a population that is almost 30 times that of Norway, which means that the per capita asset value is only around 24000 dollar. This is of course still a large amount compared with a country like Sweden that have little subsoil wealth, but not enough to support a large country like Russia for many years, especially since we are looking at non-renewable natural resources.

Figure 10. Sources of the Wealth of Nations



Source: World Bank (2011)

However, high-income countries have another type of asset that even for Norway is far more valuable than its subsoil wealth and that is what is labeled intangible assets. Among the high-income countries the value of this is between 400000 and 600000 dollars per capita. Resource rich Gabon, Iran or Russia on the other hand have very low estimated levels of intangible assets compared the high-income countries. It is interesting to note that for Russia, intangible wealth of

24000 dollars is almost exactly the same as subsoil wealth. When all the sources of wealth are added together, Russia has 73000 dollars per capita while the United States have ten times as much wealth per capita, largely because of its intangible capital.

The key question is then what factors contribute to the build up of intangible wealth. In earlier studies, the World Bank found that education and rule of law were two important factors in explaining the estimated intangible wealth. A long list of research would point more generally to the importance of institutions, regulations and how well the government functions. With credible institutions as a foundation, a well-regulated market economy and a highly educated work force, income will be higher in general. The transition process from a centrally planned communist economy with little independent legal institutions to a well-functioning market economy with democracy and a transparent legal system is difficult at best and seemingly impossible at worst.

Figure 11. Governance indicators Russia vs EU transition countries



Source: World Bank (2015) Worldwide Governance Indicators (WGI) and author's calculations

Note: EU10 hi and EU10 lo is the best and worst of the ten transition countries that joined the EU in 2004 and 2007.

However, several of the "new" EU member states that joined the union in 2004 and 2007 made significant progress in many important areas. Figure 11 shows four indicators that we think are important factors in creating well-functioning market economies: control of corruption, rule of law, the quality of regulations and the effectiveness of the government. The bars indicate the best and worst performing of the ten new EU member states and Russia. Starting with control of

corruption, the worst of the new EU members was doing better than Russia already in 2000 and then made some progress to 2014, while Russia basically made no progress. A similar picture emerges with regard to regulatory quality; Russia is behind and no progress has been seen the last 15 years. In terms of rule of law Russia is also behind the worst of the new EU countries but at least made some progress between 2000 and 2014. Finally, with regard to government effectiveness, Russia made significant progress over the last 15 years, but still is behind the worst of the new EU countries. Note that these countries are also transition countries, so there is really no reason why Russia should not be able to do what these countries did if its policy makers made it a priority. We can only imagine how attractive Russia would be to foreign investors if it set itself a goal to reach the *best* performing new EU country rather than playing catch up with the worst performers in terms of institutional reforms.

Concluding remarks

This chapter has focused on Russia's macro economic challenges that come with the heavy influence international oil prices have on the Russian economy, and its (still) strong and important economic ties to the EU.

When it comes to Russia's oil dependence, this is certainly a challenge for policy makers in charge of the macro economy. However, oil and natural resources are important assets that can contribute to the prosperity of the country and its citizens if managed well. That requires sticking to a policy of letting the exchange rate adjust to changes in oil prices to manage short run macro issues and long-term structural reforms that would allow Russia to become a modern market economy where intangible wealth is an order of magnitude larger than its subsoil wealth.

Its geographic proximity to the EU (which despite its many problems still is a major economic power) suggest that developing closer links in terms of trade and investments should be a top priority for Russia's economic policy makers. This may be in conflict with other parts of the government and political system that do not appreciate various EU policies that seek to limit Russia's influence in its "near abroad". However, the alternatives do not seem more tempting: pray for ever increasing oil prices, or waste resources on conflicts that look good on TV and generate public support the next quarter but are detrimental to economic prosperity.

A first step towards a better relationship with the EU and removal of sanctions is to contribute to a peaceful resolution of the conflict with and in Ukraine. This would in one go reduce government expenditures, save lives, and boost investor confidence. Although this may not be in the standard economics textbooks on growth, it holds great promise for the future growth of Russia that a large majority of people would like to see materialize.

References

- Anderson, J 2010, *The Gravity Model*, Working Paper 16576, National Bureau of Economic Research, Cambridge, MA.
- Åslund, A., 2012. *How Capitalism Was Built*, Cambridge University Press.
- Becker, T 2014, A Russian Sudden Stop or Just a Slippery Oil Slope to Stagnation?, *BSR Policy Briefing* 4/2014, Centrum Balticum, Turku.
- Becker, T 2015, Russia's economic troubles – a perfect storm of falling oil prices, sanctions and lack of reforms, SIEPS, *European Policy Analysis*, 2015:9.
- Becker, T 2016, 'Investment Relations between Sweden and Russia', forthcoming in *The Russian Economy and Foreign Direct Investment*, Eds. Kari Liuhto, Sergei Sutyurin, and Jean-Marc F. Blanchard, Routledge Studies in the Modern World Economy.
- Boschini, A.D., Pettersson, J. & Roine, J., 2007. Resource Curse or Not: A Question of Appropriability. *Scandinavian Journal of Economics*, 109(3), pp.593–617.
- CBR (2016), Central Bank of Russia, Statistics, <http://cbr.ru/Eng/statistics/>
- Fortescue, S & Hanson, P 2015, 'What drives Russian outward foreign direct investment? Some observations on the steel industry', *Post-Communist Economies*, vol. 27, no. 3, pp. 283-305.
- Gaidar, Y., 2010. *Collapse of an Empire*, Brookings Institution Press.
- IMF (2016a), International Monetary Fund, World Economic Outlook, April 2016 database, <http://www.imf.org/external/pubs/ft/weo/2016/01/weodata/download.aspx>
- IMF (2016b), International Monetary Fund, World Economic Outlook, databases from 1999 to 2016, <http://www.imf.org/external/ns/cs.aspx?id=28>
- IMF (2016c), International Monetary Fund, Direction of Trade Statistics database, <http://data.imf.org/?sk=9D6028D4-F14A-464C-A2F2-59B2CD424B85>
- Johansen, S., 1991. 'Estimation and hypothesis testing of cointegration vectors in Gaussian vector autoregressive models'. *Econometrica: Journal of the Econometric Society*, 59(6), p.1551.
- Kleinert, J & Toubal, F 2010, 'Gravity for FDI', *Review of International Economics*, vol. 18, no. 1, pp. 1-13.
- Liuhto, KT 2015, 'Motivations of Russian firms to invest abroad: How sanctions affect the Russian outward foreign direct investment?', *Baltic Region*, vol. 26, no. 4, pp. 4-19.

Ofer, G., 2010. WIDER Working Paper No. 2010/59 Twenty Years Later and the Socialist Heritage is still Kicking: the Case of Russia. pp.1–33.

Popov, V., 2010. WIDER Working Paper No. 2010/13 The Long Road to Normalcy: Where Russia Now Stands. pp.1–31.

Rosefielde, S., 2007. *The Russian Economy: From Lenin to Putin*. Wiley-Blackwell.

Sachs, J.D. & Warner, A.M., 2001. The curse of natural resources. *European economic review*, 45(4-6), pp.827–838.

World Bank (2011), The Changing Wealth of Nations data,
<http://data.worldbank.org/data-catalog/wealth-of-nations>

World Bank (2015), Worldwide Governance Indicators (WGI) data,
<http://info.worldbank.org/governance/wgi/index.aspx#home>