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June 14, 2016

Approved By
European Department

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STRUCTURAL POLICIES IN RUSSIA: A MEDIUM TERM PERSPECTIVE[1]

A. Introduction

1. **This paper describes structural reform policies in Russia in the last 15 years.** In line with IMF(2014a), structural reform policy actions are defined as those aimed at improving or strengthening a country's environment to conduct sustainable economic activity or its competitiveness, through the strengthening of market-based incentives in product, service, labor, trade, capital and financial markets. Adopting a medium-term perspective is important as structural reforms require consistent implementation and take time to mature. Taking an encompassing approach is also important as economic reform does not usually occur in isolation of other institutional and social reforms. This is in line with the way that a number of institutions evaluate cross-country business environments or competitiveness (including the World Economic Forum (WEF), the World Bank, or the European Bank of Reconstruction and Development). Policy actions aimed at structural reforms in Russia are identified through an analysis of policy statements, as well as other official documentation.

2. **In turn, the paper explores the impact of structural reform policies by analyzing Russia's progress in indicators tracking cross country competitiveness.** This is done by analyzing Russia's performance in the indicators surveyed by the WEF in its Global Competitiveness Index (GCI) Database for the period 2006–15. The paper examines whether the pace of reform is affected by external shocks and the political cycle. It also proposes a simple indicator of policy actions, and looks at its relationship with changes in GCI indicators. Particular attention is placed at the existence of convergence of Russia's GCI indicators to those of better-performing countries, in particular those in the OECD. In this regard, the paper explores how the pillars of Russia's competitive advantage evolved through time. Although this analysis does not constitute a formal evaluation of government policy actions, it provides some intuition as to whether structural policies had a positive impact in GCI indicators, which are widely used for international comparisons. In turn, this allows organizing some thoughts about the agenda going forward.

3. **The paper is organized as follows:** Section II provides a description of the domestic and international context during the last 15 years, while Section III describes the authorities' views on reform, their diagnostics on challenges, and policy actions. Section IV broadly analyzes Russia's reform performance, and offers some thoughts on the reform agenda going forward. Section V summarizes the main messages.

[1] The authors of this paper are Gabriel Di Bella, Oksana Dynnikova, Nina Chebotareva and Tatiana Chernisheva.

B. The Context

4. **The period 2000–15 can be split considering both domestic and external developments and the timing of policy actions.** Many of the policy actions can be better understood as a reaction of the context in which they were implemented. Concretely, external factors include the oil price super-cycle, the global financial crisis and external sanctions. Domestic factors mainly include the economic cycle. The use of these criteria results in 5 sub-periods:

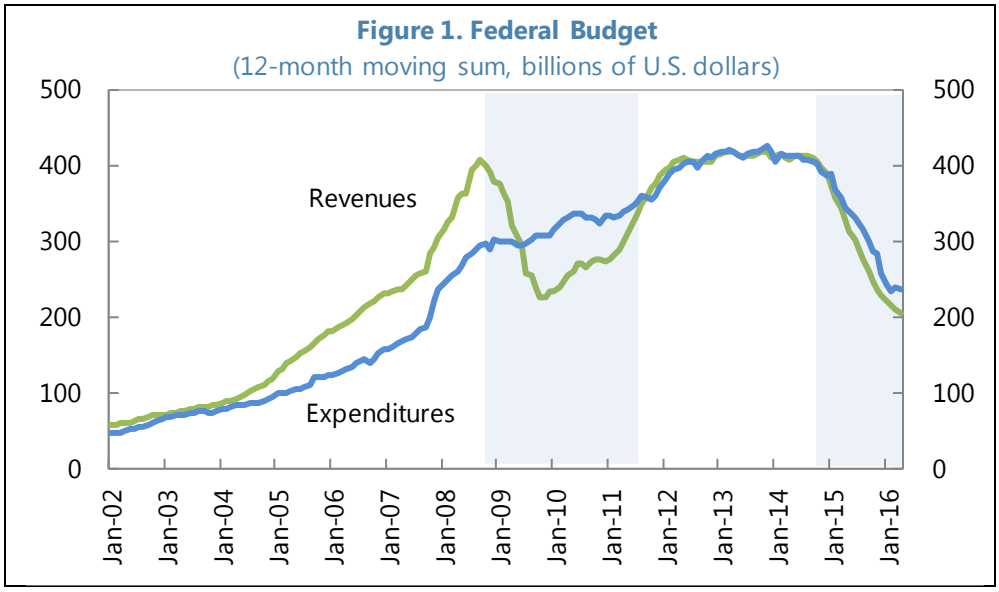
- **2000–03:** A period characterized by state-building efforts, relatively high levels of poverty, and memories of the unstable 1990s still fresh. The economy is completing its recovery from the 1998 crisis, amidst low but increasing oil prices. Stabilization proceeds but positive results are perceived to be linked to better terms of trade. GDP recovers about 40 percent of what was lost in 1990s, unemployment rates decline and the social situation stabilizes. Russia is invited to the G-8, and the process of WTO accession begins to take shape. From an institutional perspective, the period is characterized by state-building efforts after the instability of the 1990s, including building a coherent framework for the relations between the federal and regional governments. The IMF program expires.

- **2004–07:** Aggregate demand grows at double-digit rates. Higher and increasing oil prices multiply social programs, some of which grow at double digits in real terms. Increases in income per-capita result in a decline of poverty rates of close to 50 percent. By 2007, Russia is among the top 10 largest economies. The high oil price triggers a review and change of the functions of the Reserve Fund, and the creation of the National Well-Being Fund. The government's policies aim to develop the state, improve the public administration and the business climate, and reform the political and judicial system. There is a strong drive to increase population growth through family support policies.

- **2008–10:** The global financial crisis results in a sudden-stop of external financial flows and a fall in oil prices. The authorities refocus their priorities to diversify the economy. Policy actions are aimed at establishing areas for economy modernization and increasing efficiency, including in energy, transportation, nuclear technologies, IT, space and telecommunications, medical equipment, pharmaceuticals, agriculture, and military modernization. Continued attention is given to improving the business climate, reducing administrative barriers, and a privatization program is announced. Government programs are maintained and spending levels (in US$-terms) increase despite the decline in oil prices (Figure 1).

- **2011–13:** Oil prices recover to pre-crisis levels. Attention is given to the need to reduce administrative barriers to private investment and combat corruption. The authorities aim to increase the middle class by 25 percent and develop professional communities of medical, teachers, scientists and cultural workers. Russia joins the WTO.

- **2014–15:** New oil price shock and conflict in Eastern-Ukraine. The authorities renew their efforts at economic diversification as low-oil prices and external sanctions are perceived as long-lasting. Government spending (measured in US$ terms) decreases for the first time in the new century (Figure 1). The nominal anchor of monetary policy changes from the exchange rate to inflation. The real exchange rate (RER) depreciates significantly for the first time since the 1998 crisis.



C. The Authorities' Views on Reform and Policy Actions

5. The authorities have generally identified the right challenges facing Russia. Table 1 presents a broad overview of the authorities' views on structural reform needs organized around the three categories and 12 pillars defined in the WEF's Global Competitiveness Index (GCI) database.[2] These were identified from a review of official statements, in particular the annual Presidential Addresses over the last 16 years (GoR, 2000-15).[3] The authorities identified the main issues to be:

- Burdensome administrative barriers and governance problems.
- Negative demographic trends and infrastructure-driven bottlenecks.
- Insufficient market competition, in part due to a large footprint of the state in the economy.
- Lack of economic diversification exposing the economy to terms of trade swings.

To address these issues, the authorities persistently refer to the need to strengthen property rights, tackle corruption, reform public administration, increase market competition, strengthen the business climate, and implement policies to diversify the economy out of oil, among other.

[2] These 12 pillars include Institutions (Pillar 1; with 21 indicators), Infrastructure (2; 9 indicators), Macroeconomic Environment (3; 5 indicators), Health and Basic Education (4; 10 indicators), Higher Education (5; 8 indicators), Goods Market Efficiency (6; 16 indicators), Labor Market Efficiency (7; 10 indicators), Financial Market Development (8; 8 indicators), Technological Readiness (9; 7 indicators), Market Size (10; 4 indicators), Business Sophistication (11; 9 indicators), and Innovation (12; 7 indicators). In turn, these pillars are grouped in three categories "Basic requirements (Pillars 1 – 4); "Efficiency enhancers" (Pillars 5 – 10); and Innovation (Pillars 11 – 12). The paper uses a sample including 117 countries and 114 indicators for the period 2006-15.

[3] The Russian Constitution (article 84) mandates the President to annually inform Parliament about the situation of the country, and on the guidelines of the internal and foreign policy of the State. This document's structure makes it suitable to identify the authorities' diagnostics, challenges and plans (e.g., the addresses of 2004-05 are referred to as a unified program of action for the following decade). Other documents reviewed include "Strategy 2020" (GoR, 2011), "Go Russia!", which describes objectives and policy actions to transform Russia into a modern economy (2009); as well as the Prime Minister's (2015) views on challenges and needed reforms.

Table 1. Russian' Authorities Ideas on Reform and Diagnostics

Basic Requirements (Pillars 1 – 4)

Institutions (Pillar 1)

Property rights	"The prosperity of each individual should be determined by his labor abilities, qualifications and effort. Everyone has the right to dispose of what he earned" (2005); "The stability of the right to private property enables planning and concluding contracts, encourages people to buy property and expand production" (2005).
Justice system	"If part of the Russian society continues to the see the court system as corrupt, there can be no speaking of an effective justice system in our country" (2005); "The observance of principles of justice is directly connected with the equality of opportunities, and this must be guaranteed by the state" (2005) "Independent and fair court is fundamental for just public order. The execution of court rulings is still a huge problem" (2008)
Wastefulness of government spending	There is the intention to switch to, "results based budgeting" (2006); "Work at all levels of executive authority should be result-oriented" (2012);"All budgets at all levels must switch to program principle" (2013). In addition, there is the belief that public spending should play a catalytic role, "Budget funds should only catalyze private investment" (2007).
Public trust in the state	"The cause of many problems are ingrained in the lack of trust in a state that has deceived citizens in many occasions" (2001); "Over the years the executive and the legislative authorities have promised far more than the Russian economy can actually deliver. These empty promises deceive people hopes, have a negative impact on economic policy, and create conflict and distortions in inter-budgetary relations." (2003); "Outstanding problems include lack of trust in some government institutions and big business; corruption; social responsibility of business and government" (2006).
Burden of government regulations	"Russia's colossal capabilities are blocked by an unwieldy, clumsy and ineffective state mechanism" (2002); "The weakness of the state will cancel out the effects of economic and other reforms" (2003); "The Russian bureaucracy has enormous power, but quantity of power does not correspond to the quality; administrative reform has dragged for too long" (2003); "Russian people can achieve a better life if only we do not get in their way. At the very least we must not get in the way, and it would be better still if we help" (2003); "The problem of having an efficient state has not been solved so far. Our bureaucratic apparatus is largely an exclusive and often arrogant cast regarding state business as an alternative from of business (2005).
Irregular payments and bribes	"Corruption is not the result of lack of repression, but the direct result of limiting economic freedoms" (2002);"The Russian bureaucracy has proved itself poorly prepared to develop and implement the decisions the country needs. It has proved itself good at obtaining benefits and revenues through use of its powers and position (2003); "The dishonest part of our bureaucracy (at the federal and local levels alike) has used the achieved stability in its own mercenary interests, to achieve its own selfish goals rather than increase the prosperity of society" (2005); "Even threat of 12 years prison sentence cannot stop bribery. Apparently, in a number of cases economic measures (fees) might be more efficient (2010); "Audit chamber should be more proactive" (2012); "Corruption could be eliminated only with active involvement of the society" (2012); "Managing excessive state property is costly and corruption-inducing" (2010); "Law 94 (on state procurement) does not work. Inappropriate expenses exceed RUR1 trillion" (2010); "Public procurements became a real source of corruption" (2012).
Efficiency of legal framework in settling disputes and challenging regulations	"Focusing on the efforts of law enforcement bodies against crime, including tax evasion, we encountered frequent violations of the rights of our business community, and sometimes blatant racket on the part of the state officials" (2005); "The work of controlling bodies should not be assessed by the number of inspections" (2012); "If a strong state is our goal we need to overcome low efficiency and corruption. The headcount of controlling bodies is about 1 million people – too many inspections" (2012); "Work of controlling and supervising bodies change too slowly, prosecuting approach prevails. This hampers business of law abiding citizens" (2014); "Relations between business and state must be based on the notion of a common cause, on partnership and fair dialog" (2014).
Reliability of law enforcement	"There is no place in our law enforcement agencies for people whose primary interest is to fill their own pockets rather than uphold the law" (2005).
Ethical behavior of firms	"Party and corporate elites behave no better than the state bureaucracy" (2005).

Table 1. Russian' Authorities Ideas on Reform and Diagnostics (Continued)

Infrastructure (Pillar 2)	"The poor condition and low density of the road network, oil pipelines, the gas transport system, and the infrastructure of the power industry puts serious restrictions to the development of the Russian economy (2004);" The undeveloped road and port infrastructure has become an obstacle for export. We need to unite the economic centers of the country to provide economic subjects with access to regional and international markets. Well-developed transport infrastructure is capable of turning Russia's geographical features into a real competitive advantage (2004); "People still live in dilapidated and unsafe buildings and apartments" (2004); "There are huge losses of electric energy in long-distance transmission" (2009); "A breakthrough in transport development is necessary including road-building, regional air transportation, sea and railway transportation development" (2012).
Macroeconomic Conditions (Pillar 3)	Creation of the "Stabilization Fund" (2001); and the "Reserve Fund and National Well-Being Fund (NWF) (2007); "A balanced budget is the most important necessary condition for macroeconomic resilience and financial independence" (2015). "Development institutions (Russia has around two dozens of them) are affected by large volumes of bad debt, and thus, should be cleaned" (2015).
Health and Primary Education (Pillar 4)	"Healthcare modernization is taking place and at a sluggish pace and has not brought any results so far. Russia lags many countries in healthcare. Child mortality is 1.5-2 times as high as in developed countries; the country has an ineffective health care system, the quality and services drop and costs rise (2004); "Guarantees of healthcare assistance are often declarative. People do not know what they are entitled to for free and they must often pay for themselves" (2004); "Obligatory medical insurance still does not work properly. Insured persons' rights only partly matched by financing. No choice of insurance company and medical organization in reality (such opportunities are formally envisaged by the law), under-developed voluntary medical insurance result in low competition in healthcare" (2008).
Demographics and life expectancy	"In the next 15 years consequences of demographic decline of the 1990s will be felt and the number of women of reproductive age will decline" (2010). "Immigration (in particular from CIS countries) supported population numbers, Russia remains attractive" (2003).
Primary Education	"Schools should be more than educational institutions. Schools must mold moral values of future citizens" (2013); "There is lack of daycares and kindergartens" (2010).
Efficiency Enhancers (Pillars 5 – 10)	
Higher and professional education (Pillar 5)	"Global competitive environment demands strengthening the practical component of our higher education system. Professional education is not firmly bound to the situation of the labor market. More people are going into higher education by the level of teaching is falling."(200x); "Results of reforms in education should be evaluated by the quality of education, its accessibility and its relevance to labor market's demands" (2004). Access to education is part of what the authorities analyze, "There is a lack of access to quality education for low-income groups" (2004).
Goods market efficiency (Pillar 6)	
Tax Policy	"Tax policy should remain based on the primary principles of simple procedures for tax calculation; the enforcement of legal norms; equal treatment of those subject to taxation and a sensible level of taxes" (2003); "Tax system should not be burdensome for business, should be fair to all economic agents, should become more favorable for investment and development of businesses, contribute to bring work out of the "shadows" (2004); "The tax system needs to be soft on business; equitable for all economic agents, and needs to be refocused from fiscal to incentive function" (2004); "Tax reforms are becoming a constant and ongoing process; the frequency of amendments to tax legislation exceeds the allowable level. This reflects that the quality of the work is low (2003)"; "Tax agencies must not terrorize businesses" (2005).
Intensity of Market Competition	"Only a handful of more than 10,000 unitary enterprises work effectively" (2002); "There is a need to gradually transfer the functions that the state should not or cannot perform effectively" (2004);"The government must restructure the huge network of budget-funded institutions that sprout all around the country and change procedures for their financing and in many cases, change their status. There are more than 35,000 federal state institutions, which force their services on business and individuals" (2004); "Sustainable and rapid growth is only possible if we produce competitive goods. Everything we have must be competitive (goods and services, technology and ideas; business and the state, private companies and state agencies, entrepreneurs and civil servants" (2003).

Table 1. Russian' Authorities Ideas on Reform and Diagnostics (Concluded)

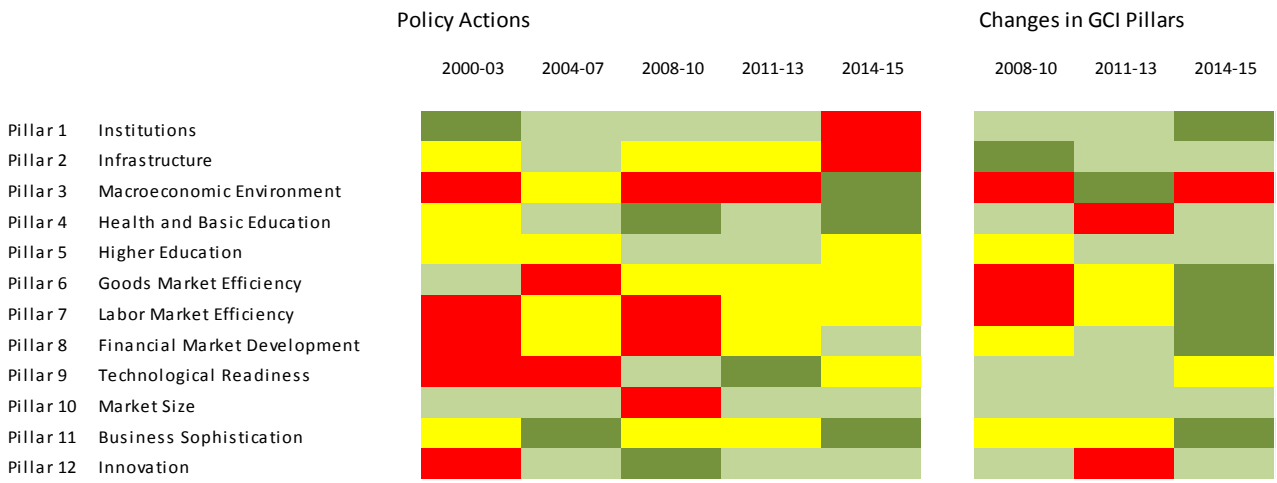
Ease to do business	"It is clear that private initiative (both from Russian business and foreign companies) is the driving force of economic growth. Russia's success depends to a great extent on the successes of its business people" (2003); "There are many bureaucratic obstacles, getting an export permit takes over 20 days" (2013);" We need to lift off the restrictions for business as much as possible, free business from officious control and supervision" (2014); "Investors do not need rules and charades. They will invest their money only in a stable economy with clear and comprehensible rules of the game" (2005); "The key task now it to let citizens realize their abilities. Freedom for development in the economy, in the social sphere and in public initiatives is the best response both to external restrictions and to internal problems" (2014).
Labor market efficiency (Pillar 7)	"Russia needs labor force mobility is crucial. People should be able to take retraining or move to another location" (2013).
Financial market development (Pillar 8)	"The fact that young families are unable to afford housing of their own affects their plan to have children" (2004).
Technological readiness (Pillar 9)	"Create conditions for the inflow of private capital in all attractive sectors that are not in the list of those that should not be under state control" (2005); "Need provide an access to broadband Internet and 4G mobile communication, to move to digital TV all over the country" (2009);
Market size (Pillar 10)	
Foreign market size	"No country no matter how big and how wealthy can develop successfully in isolation from the rest of the world. The most successful countries are those that use their energy and intelligence to integrate themselves in the world economy" (2003); "Intense competition is an inherent part of the modern world. Our ability to compete and readiness to fight for resources and influence directly determines the situation within the country and Russia's authority in international affairs" (2003).
Innovation and sophistication factors (Pillars 11 and 12)	
Higher Education and Innovation	"Human capital is the key competitive advantage" (2004); "Education quality is becoming a serious threat for Russia's competiveness" (2008). Increasing growth requires, "high quality professional education, flexible labor market, favorable investment climate and modern technologies" (2013); "We need to do an inventory of our development institutions that got dispersed into a number of small unrelated projects many of which have nothing to do with innovation" (2013).
Technological modernization and competitiveness	"We need to create new technologies and competitive products" (2014); "Without adapting to this new environment (of low oil prices and external sanctions), Russia will exhaust its international reserves and economic growth will be low" (2015); "State Development institutions should support technological modernization" (2015).

Source: IMF staff on the basis of Russian official statements in GoR (2000-15).

Note:
In parenthesis the year of the Presidential Address where the statement was made.

6. **Structural reform-related actions have been implemented simultaneously in various fronts, but at times appeared somewhat reactive.** Table 2 presents a "heat map" for policy actions organized around the pillars of the GCI database, for the time periods defined above, together with changes in Russia's relative position *vis-à-vis* other countries in the sample (in percentile terms), since 2006. These actions are defined loosely as efforts to design, modify or implement legislation, regulations and policies aimed at structural reform. All actions are considered, regardless of whether they achieved their intended outcome or not.[4] Against a benchmark in which earlier reforms are focused in strenghtening basic requirements (Pillars 1-4) and proceed gradually to strenghten efficiency (Pillars 5-10), and then innovation (Pillars 11-12), (as recommended by IMF, 2013), policy actions in Russia appear to have been somewhat reactive to changing international and domestic conditions, rather than have followed a consistent blueprint for reforms.

Table 2. Heat Map for Russia's Policy Actions and Changes in GCI Pillars



Source: IMF staff calculations; Global Competitive Index and Database created and compiled by World Economic Forum

Notes:

Dark Green: Strong policy action (left); strong positive change in GCI (right)

Light Green: Moderate policy action (left); moderate positive change in GCI (right)

Yellow: Weak policy action (left); moderate negative change in GCI (right)

Red: Almost absent policy action (left); strong negative change in GCI (right)

[4] The table reflects the average number of policy actions per indicator per pillar, as described in the presidential addresses for the period 2000-15. The table does not intend to be an exhaustive catalogue of actions, but rather to provide a sense of priority areas. Effective actions are expected to positively affect GCI performance.

7. **Sustained policy action across the whole period is observed in relation to institutions, health and basic education, market size, and innovation.** On Institutions (Pillar 1), actions aimed at improving the protection of property rights, reducing red-tape, strenghtening public administration, simplifying dispute resolution procedures between the state and the private sector, increasing the state's effectiveness, and fighting corruption, among other.[5] On basic health and education (Pillar 4), policies aimed at improving demographics trends, and strengthening and making pre-primary and primary education more easily available, also in part to promote population growth. On market size (Pillar 10), actions were aimed at economic integration, in particular with CIS countries (including through the creation of the Eurasian Economic Union), and by efforts to join the WTO. On innovation (Pillar 12), the main actions aimed at strengthening research institutions, promoting the collaboration between industry and universities, and improving the match between labor market needs and university programs, among other.

8. **In turn, actions on other fronts are concentrated in specific periods.** For instance, efforts at improving infrastructure (Pillar 2) were significant in 2004-07, but less so in 2000-03, 2008-10 and 2011-13. Actions aimed at strenghtening higher education and training (Pillar 5) and technological readiness (Pillar 9), are mainly concentrated in 2008-10 and 2011-13. In turn, actions geared at improving business sophistication (Pillar 11) are mainly concentrated in 2004-07 and 2014-15.

9. **Most importantly, the prioritization and timing of policies seems linked to the authorities' views on the oil price cycle.** The authorities regarded the relatively high oil prices in early 2000s (as compared to late 1990s), as temporary, while by 2007 the high oil prices were perceived as persistent and part of a "new international reality". By 2014-15, low oil prices are again perceived as a persistent shock to which the country needs to adjust.[6]

[5] Reforms associated with improving the functioning of the Federation are difficult to classify within the GCI framework. However, in the early 2000s significant efforts were aimed at establishing a basic set of rules to guide the relationship between the federal government and the regions, including by eliminating inter-state barriers for the moving of factors; establishing clear rules for tax sharing; and delineating the powers between federal, regional, and local levels of authority, among other.

[6] For instance, the 2003 Presidential Address states that "Russia owes its economic growth above all to the unprecedented improvement in foreign trade conditions"; and that, "We must not forget that this favorable situation cannot and will not last forever". Similarly, the 2015 Presidential Address states, "Russia should be ready for a long period of low commodity prices and, likely, external restrictions". Conversely, Russia's economic development strategy through 2020 ("Strategy 2020") envisages high long-term oil prices (US$93/barrel in 2016 and US$112/barrel in 2020; GoR, 2011).

10. Accordingly, the pace of reform implementation appears associated with oil price fluctuations. Table 3 shows that 2-year improvements in GCI indicators (in percentile terms) are positively associated with decreases in oil prices, suggesting some cyclicality in reform implementation.[7] Moreover, increases in oil price volatility are negatively associated with reforms, suggesting that policy implementation paused somewhat in periods of higher volatility until it became clear whether observed oil prices were persistent. Both the coefficient for oil price fluctuations and oil price volatility are statistically significant and robust to alternative regression specifications. Initial conditions are also positively and statistically significantly associated with reforms, suggesting 'convergence' of Russia's GCI indicators, an issue that will be further discussed below. The election cycle appears not to have a robust association to reforms and it is not statistically significant.

Table 3. Change in Russia's GCI Indicators and the Oil Price Cycle

(Stacked 2-year percentile change of 114 GCI indicators for 2008 - 2015)

Variable	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Constant	1.27 **	1.56 ***	-0.69	1.67		
Change in Oil Price (percent)	-0.06 *	-0.06 *	-0.06 *	-0.06 *	-0.06 *	-0.06 *
Elections		-0.40	-0.41	0.34	0.34	0.32
Russia's percentile in 2006			0.07 *	0.07 *	0.07 *	0.08 *
2-year Oil Price Std. Dev./Average				-0.36 *	-0.36 *	-0.36 *
Basic Requirements					2.28 ***	
Efficiency Enhancers					1.50	
Innovation and Sophistication					1.14	
Institutions						1.55
Infrastructure						2.60
Macroeconomic Environment						3.61
Health and Basic Education						1.70
Higher Education						0.69
Goods Market Efficiency						1.22
Labor Market Efficiency						1.24
Financial Market Development						3.32
Technological Readiness						-0.22
Market Size						4.01 ***
Business Sophistication						0.79
Innovation						-0.76
R-squared	0.04	0.04	0.07	0.08	0.08	0.09
Adjusted R-squared	0.04	0.04	0.07	0.07	0.07	0.07
Observations:	832	832	832	832	832	832

Source: IMF staff calculations; Global Competitive Index (GCI) Database compiled by World Economic Forum

Note: White heteroskedasticity-consistent standard errors and covariance

Coefficient statistically Significant at 1 percent (*); at 5 percent (**); at 10 percent (***)

[7] Two-year changes are considered to smooth year-to-year volatility and focus on more persistent changes.

11. **The economic cycle, in large part linked to oil prices, also influenced policy actions.** The cycle affected the timing of structural actions on the macroeconomic front (Pillar 3) and on financial market development (Pillar 8). Although the need to diversify the economy appears very frequently in the authorities' statements, it is given a higher priority at times of negative output gaps and lower oil prices, which resulted in actions aimed at improving market efficiency (Pillar 6), labor market efficiency (Pillar 7), technological readiness (Pillar 9), business sophistication (Pillar 11), and innovation (Pillar 12).

12. **In line with lack of progress in some areas there is a call for more effective action.** A number of times the authorities' statements recognize lack of progress as one of the challenges to overcome (Table 1). This is particularly the case on the need to advance administrative reform, increase transparency, reduce the footprint of the state in the economy, increase market competitiveness, improve the business climate, and promote economic diversification, among other.

D. Achievements and Challenges

Achievements: Russia Gradually Closing Competitiveness Gaps with the OECD

13. **Gradual convergence of Russia's GCI indicators to those of more advanced economies is an achievement.** Table 4 shows that the improvement of Russia's GCI indicators in the period 2006-15 was generally largest for those indicators whose levels (in absolute terms), were the weakest in 2006. Convergence is preserved when percentiles (rather than absolute values) are used, namely GCI indicators (in percentile terms) also improved the most, on average, for those in which their initial percentile was weaker.[8] The regression coefficient when using percentiles is larger than that when using absolute values, suggesting either that Russia's absolute improvement in some indicators was larger than that for other countries; or, that Russia's weak progress (or absolute deterioration) in some indicators was coupled with weaker progress or a larger deterioration of those indicators in other countries in the sample.

[8] Successive GCI vintages incorporate new countries against which Russia compares, on average, favorably. Accordingly Russia's percentiles for 2015 when including all countries are better than those used in the paper, which are calculated on the basis of an unchanged country sample.

Table 4. Convergence of Russia's GCI Indicators

(Change in absolute and relative levels, 2015 vs. 2006)

Variable	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Russia's absolute level 2006	0.25 *	0.22 *	0.25 *			
Russia's Percentile 2006				0.32 *	0.31 *	0.31 *
Constant	-1.12 *			-16.28 *		
Basic Requirements		-1.17 *			-13.48 *	
Efficiency Enhancers		-0.91 *			-16.83 *	
Innovation and Sophistication		-1.02 *			-17.71 *	
Institutions			-1.25 *			-15.92 **
Infrastructure			-1.43 *			-8.12
Macroeconomic Environment						-18.43 **
Health and Basic Education			-1.05 ***			-10.92 ***
Higher Education			-1.29 *			-17.02 *
Goods Market Efficiency			-1.05 *			-15.36 **
Labor Market Efficiency			-0.78 **			-20.68 *
Financial Market Development			-0.75 ***			-9.63
Technologcial Readiness			-1.19 *			-22.27 *
Market Size			-1.81 *			-7.13 **
Business Sophistication			-1.18 *			-17.49 **
Innovation			-0.80 *			-23.90 *
R-squared	0.23	0.27	0.42	0.27	0.28	0.35
Adjusted R-squared	0.22	0.24	0.31	0.26	0.26	0.27
Observations:	72	72	72	113	113	113

Source: IMF staff calculations

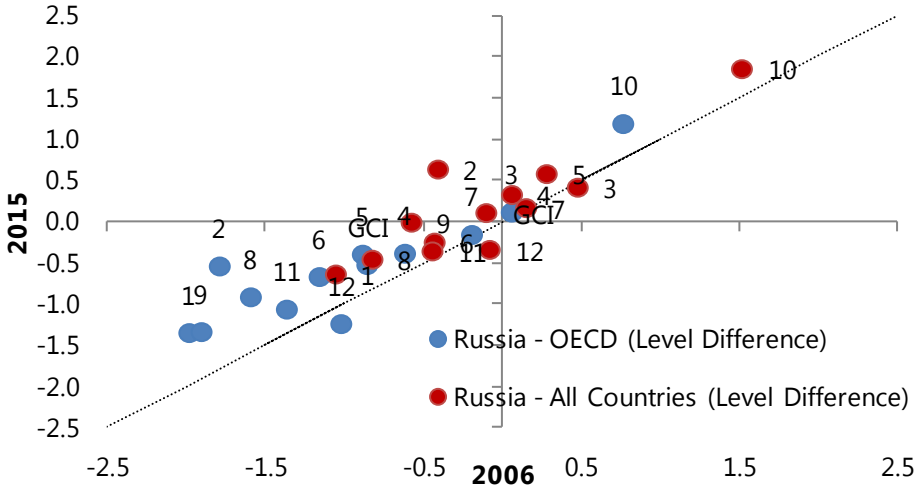
Note: White heteroskedasticity-consistent standard errors and covariance

Coefficient statistically Significant at 1 percent (*); at 5 percent (**); at 10 percent (***)

14. Early work towards OECD accession may have contributed to the observed convergence.[9] Figure 2 shows that, with the exception of innovation (Pillar 12), Russia's position improved in all pillars (in absolute terms) with respect to OECD averages (as it has more generally improved relative to the average of all countries in the sample). Russia's GCI indicators (in percentile terms) also broadly improved the most for those indicators which performed the worse *vis-à-vis* OECD averages in 2006 (Figure 3). In particular, convergence is stronger with respect to OECD countries than with respect to all countries, as reflected by a larger regression coefficient (Table 5). This is partly explained by an increase in the dispersion of performance in OECD countries for most indicators in 2015 *vis-à-vis* 2006 (Figure 4). However, when Russia's initial conditions are interacted with the average number of policy actions per indicator per pillar (as shown in Table 2), the resulting coefficients are not always significant, providing evidence that some actions were more effective than others.

Figure 2. Russia's Competitiveness

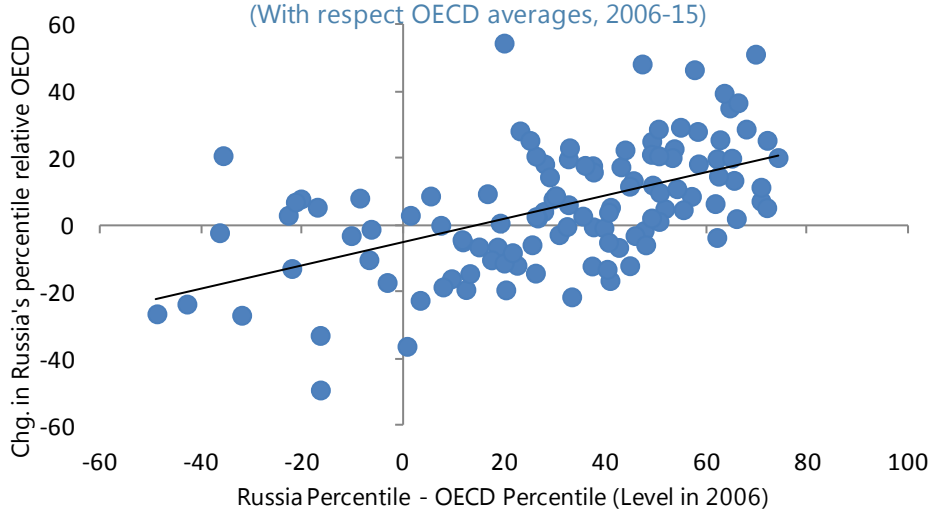
(Abs. level diff., 2015 vs. 2006; above 45 degree line = better)



Source: IMF staff and Global Competitive Database.

[9] The OECD's council decision approving Russia's request for accession was adopted in 2007, but the process was placed on hold in 2014. Accession talks were organized around the work of 22 committees in charge of analyzing Russia's policies. Seven among them issued opinions (including on foreign direct investment, labor and social policies, competition, and tax policy, among other), which described Russian policies and needed changes to converge to OECD standards. Given that many of these opinions were issued before 2014, it is likely that when the accession process resumes, an update may be needed for some of them. OECD accession is an open process, with no deadlines. The commission on economic development and integration (established in 2009 and that deals with Russia's participation in the WTO and on OECD accession, under the Deputy Prime Minister in charge of economic issues) should facilitate convergence to OECD standards, as one of its tasks is to ensure that new (or modified) regulations take into consideration OECD recommendations.

Figure 3. Convergence of Russia's GCI Indicators
(With respect OECD averages, 2006-15)



Source: IMF staff and Global Competitive Database.

Table 5. Convergence of Russia's GCI Indicators Relative to the OECD

(Percentile change of 114 GCI indicators with respect to OECD average 2015 vs. 2006)

Variable	Coefficient	Coefficient	Coefficient	Coefficient
Russia's percentile vis-à-vis OECD 2006	0.35 *	0.34 *	0.33 *	
Constant	-5.35 **			-7.75 *
Basic Requirements		-3.56		
Efficiency Enhancers		-5.40 **		
Innovation and Sophistication		-7.75 ***		
Institutions			-3.79	
Infrastructure			2.18	
Macroeconomic Environment			-3.19	
Health and Basic Education			-6.77	
Higher Education			-6.16	
Goods Market Efficiency			-3.51	
Labor Market Efficiency			-7.27	
Financial Market Development			5.71	
Technological Readiness			-16.83 *	
Market Size			4.58	
Business Sophistication			-7.51	
Innovation			-14.42 **	
Russia's percentile vis-à-vis OECD 2006 times:				
Policy action on Institutions				2.52 *
Policy action on Infrastructure				2.64 **
Policy action on Macroeconomic Environment				0.67
Policy action on Health and Basic Education				0.72 ***
Policy action on Higher Education				2.07 **
Policy action on Goods Market Efficiency				3.18 *
Policy action on Labor Market Efficiency				3.27 ***
Policy action on Financial Market Development				6.14 *
Policy action on Technological Readiness				1.15
Policy action on Market Size				-2.79
Policy Action on Business Sophistication				2.09 *
Policy action on Innovation				0.66
R-squared	0.30	0.30	0.39	0.39
Adjusted R-squared	0.29	0.28	0.31	0.32
Observations:	113	113	113	113

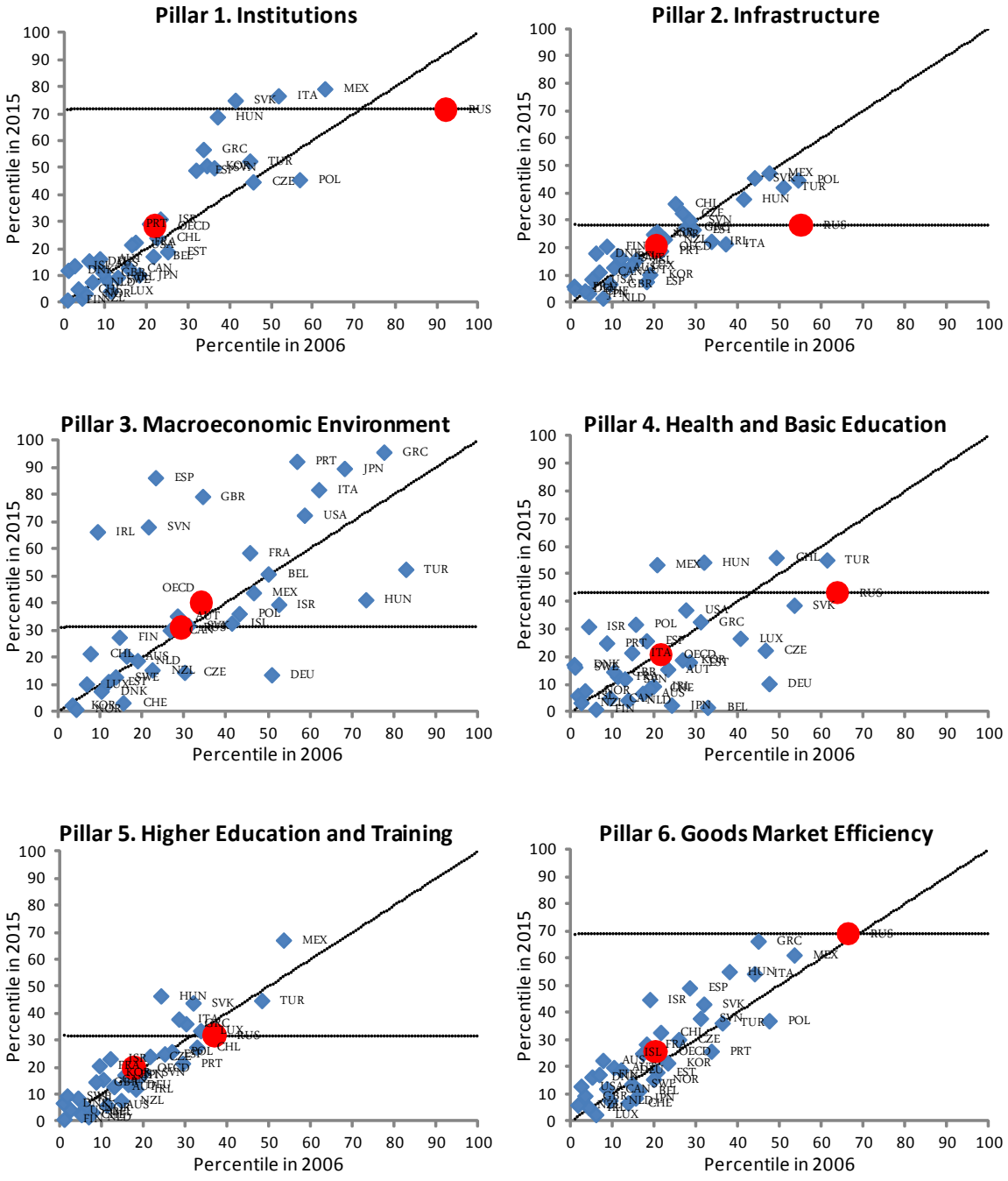
Source: IMF staff calculations; Global Competitive Index Database compiled by World Economic Forum

Note: White heteroskedasticity-consistent standard errors and covariance

Coefficient statistically Significant at 1 percent (*); at 5 percent (**); at 10 percent (***)

Figure 4. Competitiveness: Russia *vis-à-vis* OECD (Continued)

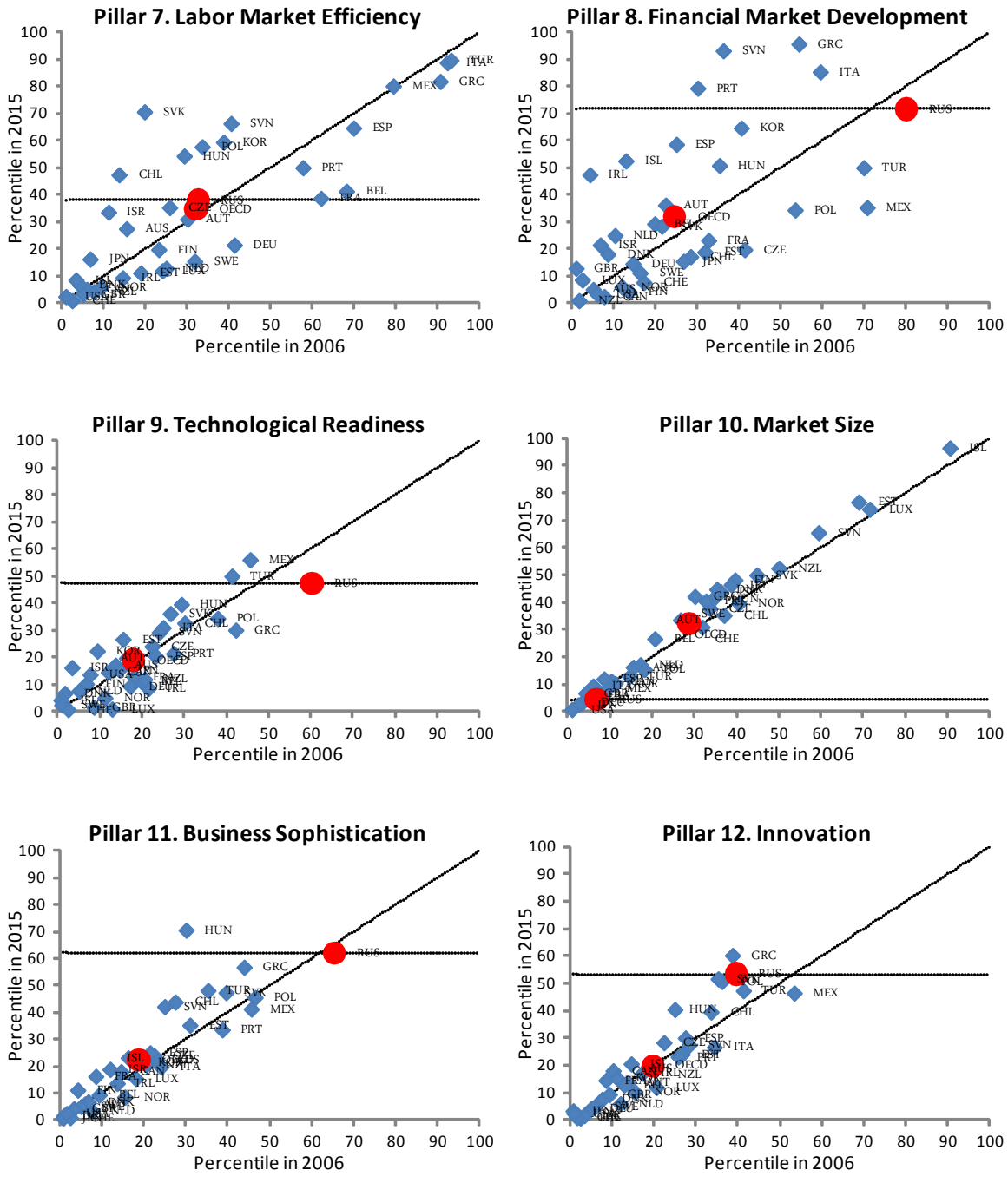
(Global Competitive Indicators, in percentiles; 1 = best)



Source: IMF staff calculations and Global Competitiveness Index Database

Figure 4. Competitiveness: Russia *vis-à-vis* OECD (Concluded)

(Global Competitive Indicators, in percentiles; 1 = best)



Source: IMF staff calculations and Global Competitive Database

Challenges: Large Competitiveness Gaps Remain

15. Despite convergence, Russia continues to compare unfavorably with respect to OECD averages in most GCI indicators. Table 6 shows that 50 percent of the GCI indicators improved significantly with respect to OECD averages since 2006, 23 percent remained about unchanged and the remaining deteriorated. However, large initial gaps have not been completely closed and thus the distribution (in percentile terms) of Russia's performance across GCI indicators in 2015 has remained similar to that in 2006, with less than 20 percent of such indicators at levels similar or higher than those of the OECD averages, and about 70 percent of them at levels that are lower than the OECD average by more than 20 percentage points. In particular, relative improvement (of between 5 and 20pp) in a number of indicators was more the consequence of OECD averages worsening rather than Russia's absolute performance improving, including on "property rights" and "intellectual property protection", where Russia's performance falls in the sample's lowest 10th percentile in 2015.

Table 6. Russia's GCI Indicators vis-à-vis OECD Average

(Level in 2015, and relative change in the period 2006 - 15; in percent over 114 indicators)

	Change (2015 *vis-à-vis* 2006)					
Level in 2015	**Much Better**	**Better**	**No Change**	**Worse**	**Much Worse**	**Grand Total**
High	4	4	4	1	3	17
of which , 2015 highest in series	3	3	2	0	0	7
Average	0	0	0	1	0	1
of which , 2015 highest in series	0	0	0	0	0	0
Low	4	5	4	1	1	14
of which , 2015 highest in series	4	2	1	0	0	6
Very Low	15	18	15	18	4	68
of which , 2015 highest in series	9	5	3	0	0	17
Grand Total	23	27	23	20	7	100
of which , 2015 highest in series	15	10	5	0	0	30

Source: Global Competitive Index Database and IMF staff calculations

16. Moreover, Russia's relative strengths and weaknesses with respect to OECD countries have remained broadly unchanged in the last 10 years. Russia's competitive edge is associated with its market size (Pillar 10), relatively flexible labor markets (Pillar 7) and macroeconomic performance (Pillar 3). Indeed, according to measures of market size, Russia compares significantly above the OECD average; for labor market efficiency, Russia is close to the OECD average, and better than second and third-tier performers among OECD countries.[10] Regarding measures linked to the macroeconomic environment, Russia compares shy above the OECD average, mostly due to its low public debt levels. With respect to infrastructure (Pillar 2), Russia compares slightly below the OECD average, and similarly to second-tier performers

[10] We split OECD countries according to their performance in GCI indicators in three tiers from best performers to weakest.

among OECD countries. In turn, Russia's relative performance is the weakest in market competitiveness (Pillar 6), business sophistication (11), and innovation (12). Figure 4 shows that in all of these, Russia compares worse than all OECD countries including those with the weakest intra-group performance.[11]

17. **Particularly challenging are indicators where Russia still compares unfavorably with respect to OECD averages, and which have stayed unchanged or worsened since 2006.** Table 7 shows relatively low (and unchanged) levels with respect to OECD averages for "efficiency of legal framework in challenging regulations"; "strength of auditing and reporting standards"; "quality of roads"; "intensity of local competition"; "effect of taxation on incentives to work"; and, "capacity to retain and attract talent", among other. In addition, indicators showing relatively low (and worsened) levels relative to OECD averages include "quality of the education system"; "degree of customer orientation"; "availability of latest technologies"; "firm-level technology absorption"; "FDI and technology transfer"; "local supplier quantity and quality"; "production process sophistication"; "capacity for innovation and company spending on R&D"; "strength of investor protection"; and, "state of cluster development", among other.

[11] Russia's performance in 2015 is slightly better than the weaker performers among OECD countries on institutions (Pillar 1); basic health and education (Pillar 4); higher education and training (Pillar 5); financial development (Pillar 8); and technological readiness (Pillar 9).

Table 7. Russia GCI Indicators vis-à-vis OECD Averages

(Relative Levels in 2015 and Relative Change in Levels, 2006 - 2015)

	Change (2015 *vis-à-vis* 2006)				
Level in 2015	**Much Better** *(Improvement vis-à-vis OECD average by 20 pp. or more)*	**Better** *(Improvement vis-à-vis OECD average by 5 to 10 pp.)*	**No change** *(Change vis-à-vis OECD average within 5 pp.)*	**Worse** *(Deterioration vis-à-vis OECD average by 5 to 20 pp.)*	**Much Worse** *(Deterioration vis-à-vis OECD average by more than 20 pp.)*
High (Higher than OECD average)	Mobile telephone subscriptions (2; 10, 45 ; 2 steps up) **General government debt (3; 9, 65 ; Unchanged)** Business impact of malaria (4; 1, 15 ; 3 steps up) **Buyer sophistication (6; 31, 31 ; 3 steps up)** **Ease of access to loans (8; 43, 44 ; 3 steps up)**	**Quality of railroad infrastructure (2; 25, 28 ; 1 step up)** Available airline seat (2; 9, 32 ; Unchanged) Pay and productivity (7; 20, 37 ; Unchanged) **Domestic market size index (10; 5, 33 ; Unchanged)** **GDP (PPP) (10; 4, 33 ; Unchanged)**	**Malaria cases (4; 1, 17 ; Unchanged)** Tertiary education enrollment (5; 15, 22 ; Unchanged) No. procedures to start a business (6; 28, 30 ; 1 step up) Flexibility of wage determination (7; 21, 55 ; Unchanged) **Foreign market size index (10; 3, 29 ; Unchanged)**	Mobile broadband subscriptions (9; 29, 26 ; 1 step down)	Government budget balance (3; 26, 45 ; Unchanged) Gross national savings (3; 38, 43 ; Unchanged) Hiring and firing practices (7; 33, 55 ; Unchanged)
Average (within 10 pp. of OECD average)	**Internet access in schools (5; 30, 25 ; 2 steps up)** **Gov't procurement of advanced tech products (12; 48, 38 ; 2 step**	Fixed telephone lines (2; 29, 22 ; 1 step up) Primary education enrollment (4; 38, 28 ; 2 steps up)	**Country credit rating (3; 31, 24 ; Unchanged)**	Mobile broadband subscriptions (9; 29, 26 ; 1 step down)	
Low (lower than OECD average by 10 to 20 pp.)	**Public trust in politicians (1; 47, 36 ; 1 step up)** **Ethical behavior of firms (1; 49, 31 ; 1 step up)**	Total tax rate (6; 75, 55 ; 1 step up) Venture capital availability (8; 49, 35 ; 1 step up) **Individuals using Internet (9; 33, 20 ; 1 step up)** **Control of international distribution (11; 43, 25 ; 1 step up)**	Quality of primary education (4; 44, 27 ; Unchanged) No. days to start a business (6; 47, 31 ; Unchanged) PCT patents (12; 35, 17 ; Unchanged)	Quality of math and science education (5; 44, 30 ; 2 steps down)	Redundancy costs (7; 58, 41 ; 2 steps down)
Very Low (Lower than OECD average by 20 pp. or more)	Favoritism in decisions of government officials (1; 64, 34 ; Unchar Wastefulness of government spending (1; 61, 37 ; Unchanged) Burden of government regulation (1; 80, 50 ; Unchanged) Transparency of government policymaking (1; 58, 34 ; Unchanged **Protection of minority shareholders' interests (1; 85, 31 ; Unchar** **Quality of overall infrastructure (2; 50, 22 ; Unchanged)** Extent of staff training (5; 61, 30 ; Unchanged) **Extent of market dominance (6; 51, 29 ; Unchanged)** **Effectiveness of anti-monopoly policy (6; 63, 26 ; Unchanged)** **Trade tariffs (6; 57, 18 ; Unchanged)** **Availability of financial services (8; 54, 29 ; Unchanged)** Soundness of banks (8; 84, 39 ; Unchanged) **Legal rights index (8; 58, 36 ; Unchanged)** **Nature of competitive advantage (11; 54, 25 ; Unchanged)** **Value chain breadth (11; 72, 25 ; Unchanged)** Extent of marketing (11; 59, 26 ; Unchanged) **Willingness to delegate authority (11; 60, 30 ; Unchanged)**	Property rights (1; 90, 26 ; Unchanged) Intellectual property protection (1; 91, 24 ; Unchanged) **Irregular payments and bribes (1; 72, 23 ; Unchanged)** Judicial independence (1; 79, 27 ; Unchanged) **Efficiency of legal framework in settling disputes (1; 72, 35 ; Unch** Business costs of terrorism (1; 72, 39 ; Unchanged) Business costs of crime and violence (1; 56, 30 ; Unchanged) Organized crime (1; 72, 31 ; Unchanged) Reliability of police services (1; 81, 26 ; Unchanged) Quality of electricity supply (2; 53, 20 ; Unchanged) **Availability of research and training services (5; 45, 23 ; Unchang** **Effect of taxation on incentives to invest (6; 78, 51 ; Unchanged)** Prevalence of trade barriers (6; 78, 34 ; Unchanged) Prevalence of foreign ownership (6; 89, 29 ; Unchanged) Business impact of rules on FDI (6; 84, 37 ; Unchanged) **Burden of customs procedures (6; 66, 23 ; Unchanged)** Reliance on professional management (7; 62, 26 ; Unchanged) **Affordability of financial services (8; 53, 31 ; Unchanged)** Regulation of securities exchanges (8; 72, 31 ; Unchanged) Fixed broadband Internet subscriptions (9; 40, 18 ; Unchanged)	Diversion of public funds (1; 79, 30 ; Unchanged) Efficiency of legal framework in challenging regs. (1; 80, 33 ; Unch Strength of auditing and reporting standards (1; 78, 28 ; Unchang Quality of roads (2; 91, 25 ; Unchanged) Quality of air transport infrastructure (2; 59, 26 ; Unchanged) Inflation, annual (3; 91, 27 ; Unchanged) Tuberculosis cases (4; 66, 19 ; Unchanged) Business impact of tuberculosis (4; 58, 20 ; Unchanged) Infant mortality (4; 42, 19 ; Unchanged) **Life expectancy (4; 69, 18 ; Unchanged)** Intensity of local competition (6; 62, 29 ; Unchanged) Agricultural policy costs (6; 90, 41 ; Unchanged) Imports (6; 92, 52 ; Unchanged) Effect of taxation on incentives to work (7; 84, 59 ; Unchanged) **Country capacity to retain talent (7; 72, 35 ; Unchanged)** **Country capacity to attract talent (7; 63, 39 ; Unchanged)** Financing through local equity markets (8; 66, 33 ; Unchanged)	Efficacy of corporate boards (1; 57, 31 ; 2 steps down) Quality of port infrastructure (2; 59, 27 ; Unchanged) HIV prevalence (4; 81, 23 ; Unchanged) Business impact of HIV/AIDS (4; 47, 22 ; 1 step down) Secondary education enrollment (5; 47, 25 ; 1 step down) Quality of the education system (5; 59, 32 ; 1 step down) Quality of management schools (5; 75, 26 ; Unchanged) Degree of customer orientation (6; 66, 26 ; Unchanged) Cooperation in labor-employer relations (7; 71, 36 ; Unchanged) Availability of latest technologies (9; 77, 20 ; Unchanged) Firm-level technology absorption (9; 73, 24 ; Unchanged) FDI and technology transfer (9; 84, 31 ; Unchanged) Exports (10; 69, 43 ; 2 steps down) Local supplier quantity (11; 66, 34 ; 1 step down) Local supplier quality (11; 65, 19 ; Unchanged) Production process sophistication (11; 72, 19 ; Unchanged) Capacity for innovation (12; 66, 26 ; Unchanged) Company spending on R&D (12; 58, 26 ; 1 step down) University-industry collaboration in R&D (12; 53, 24 ; Unchanged) Availability of scientists and engineers (12; 52, 24 ; 1 step down)	Strength of investor protection (1; 69, 32 ; 2 steps down) Int'l Internet bandwidth (9; 57, 24 ; 3 steps down) State of cluster development (11; 83, 28 ; Unchanged) Quality of scientific research institutions (12; 46, 20 ; 2 steps down)

Source: IMF staff calculations; Global Competitive Index Database compiled by World Economic Forum

Notes:

First figure refers to Pillar; second figure to Russia's percentile in 2015; third figure to OECD average percentile in 2015; and fourth whether Russia's level vis-à-vis OECD average, e.g. a move from "very low" in 2006 to "low" in 2015 would be represented by "1 step up"

Indicators in Bold refer to those that achieved best position in 2015 (the latest data point)

Indicators in red correspond to "Basic Requirements" (Pillars 1-4); in blue to "Efficiency Enhancers" (Pillars 5-10); and Green to "Innovation" (Pillars 11-12)

Russia's Structural Reform Agenda Going Forward

18. **Lower oil prices and a real exchange rate (RER) that is more aligned with fundamentals create the right incentives to advance structural reforms.** The authorities' view that oil prices will be persistently low and the associated realignment of the RER should serve as strong incentives to reinvigorate the structural reform agenda to find a less oil-dependent growth model. Adapting to better relative prices will require effective action in areas where Russia still lags OECD countries (many of which have seen only limited progress in the past 10 years), in part due to some cyclicality in policy implementation. Effective actions are needed to strengthen institutions (increasing the effectiveness of government spending, further reducing administrative burden, protecting investors' rights; Pillar 1);[12] foster market competitiveness (increase the intensity of market competition, make customs procedures more efficient, Pillar 6); technological readiness (facilitate technology transfer and absorption through FDI and the availability of latest technologies, Pillar 9); business sophistication (increasing the breadth of value chain and the availability and quality of domestic suppliers -all of which will require further localization of production-, including through cluster development, Pillar 11); and, innovation (support university-industry collaboration and research universities, Pillar 12). Progress in these areas should also support productivity increases (Kyobe, 2016). Better leveraging Russia's current competitive advantage on macroeconomic conditions, labor market flexibility, and market size will also be important.

19. **Increasing domestic market competition (Pillar 6) is essential.** The gaps of Russia's GCI indicators in this area with respect to OECD averages continue to be large, while simultaneously significant progress was observed for a large number of non-OECD countries in the past 10 years. Improvements will require identifying the true extent of the footprint of the state in the economy (which should also result in advances in transparency, and lay the ground for an increase in government effectiveness, and accounting standards, Pillar 1). Most importantly, it should result in a carefully designed, phased and transparent divestiture program of non-strategic commercial entities. This would apply to the more than 20,000 commercial entities in which the state has a stake and for which there is no sufficient information about performance (IMF, 2014b).

20. **Continue to leverage Russia's large market size will require firms to adapt to lower RER levels, as well as further trade integration.** Firms' incentives to adapt will be increasingly strong provided macroeconomic policies ensure that the RER remains aligned to fundamentals, and as delinked as possible from fluctuations associated with the oil price super cycle. This

[12] Inspections constrain (at times) economic activity and market access, and result in losses for businesses. Official statements recognize the burden imposed by unwarranted inspections and the need to streamline them.

should allow entrenching recent gains in the share of local products in domestic consumption. As production localization is related with the availability of economies of scale, firms will have to re-evaluate the trade-off between available varieties and volumes, and adapt varieties to a lower ratio between nominal per-capita income and prices of locally-produced tradable goods.[13] The availability of scale economies should also be supported from further trade integration. Russia (a WTO member since 2012, and of the Eurasian Economic Union, EEU), only has free trade agreements with nine CIS countries, Serbia, and recently Vietnam. This compares unfavorably with the trade integration (including through global value chains) that is observed in other emerging economies, in Latin America (e.g., Chile, Mexico), or Asia (e.g. South Korea, ASEAN economies).[14]

21. **Fiscal consolidation in response to lower long-term oil prices is needed to preserve Russia's macroeconomic edge (Pillar 3).** Fiscal consolidation should support keeping Russia's favorable position relative to OECD countries on macroeconomic issues, as it would contribute to maintain low public debt-to-GDP ratios, decrease long-term inflation, and preserve RER levels close to economic fundamentals. Regarding the latter, delinking oil price fluctuations from government spending will contribute to RER stability and provide the right price signals to firms in the tradable sector, and to workers alike.

22. **However, fiscal consolidation should not impact negatively on other competitiveness dimensions.** If fiscal consolidation relies on tax policy changes, these should affect the least possible incentives to invest or to work (in order not to affect market and labor market competition), or deteriorate income distribution (which would likely affect human capital formation). Increasing the progressivity of personal income taxes or taxing luxury consumption and of social "bads" may increase revenues without unduly affecting competitiveness. Improving tax administration, reducing evasion and tax expenditures could also help.[15] Gradual progress in pension reform should contribute both to fiscal consolidation and to support labor supply.[16]

[13] The automobile industry provides a good example of changes needed in business sophistication (Pillar 11). Government regulations (of 2006 and 2010) reducing import duties for car components and subcomponents in exchange for localization resulted in a number of car terminals establishing in Russia to supply (almost exclusively) the domestic market. The RER depreciation increased the ratio between car prices to income per capita. Lowering this ratio to support demand requires increased localization throughout the value chain, and further taking advantage of scale economies, both through increased trade integration and a reconsideration of available varieties.

[14] According to the Ministry of Foreign Affairs, there is interest from a number of countries, including South Korea, Singapore, Thailand, and MERCOSUR (among other) to start trade negotiations between with the EEU.

[15] There is limited disclosure of revenue loss due to tax reliefs and tax subsidies (IMF, 2014b).

[16] Labor supply growth will be constrained for years to come even if recent positive population trends continue; indeed, if such trend continues the case for preserving education and health expenditures would be stronger.

23. **In particular, Russia's fiscal spending in basic and advanced education, health (Pillars 4 and 5), and economic infrastructure (Pillar 2) should be preserved.** Absolute performance for these pillars has improved for a large number of countries in the last 10 years (Figure 5). Thus, decreases in spending in these areas are more likely to result in swift decreases in Russia's relative competitiveness.[17] This is compounded by the fact that Russia still maintains a negative gap with most OECD countries on basic health and education indicators (which constitute the core of human capital formation), and infrastructure, where needs are pervasive (in particular for roads, where Russia's corresponding GCI indicator falls in the lowest 10th percentile in 2015). Lower oil fiscal revenues will make institutional reforms to attract private capital into infrastructure a priority, including through public private partnerships (PPP). Reporting obligations under PPPs and other major and multi-annual contracts should improve transparency on this instrument and gradually increase its use (IMF, 2014b).[18] Supporting public infrastructure should also contribute to reduce high logistics costs (given Russia's extension) and contribute to regional income convergence.[19]

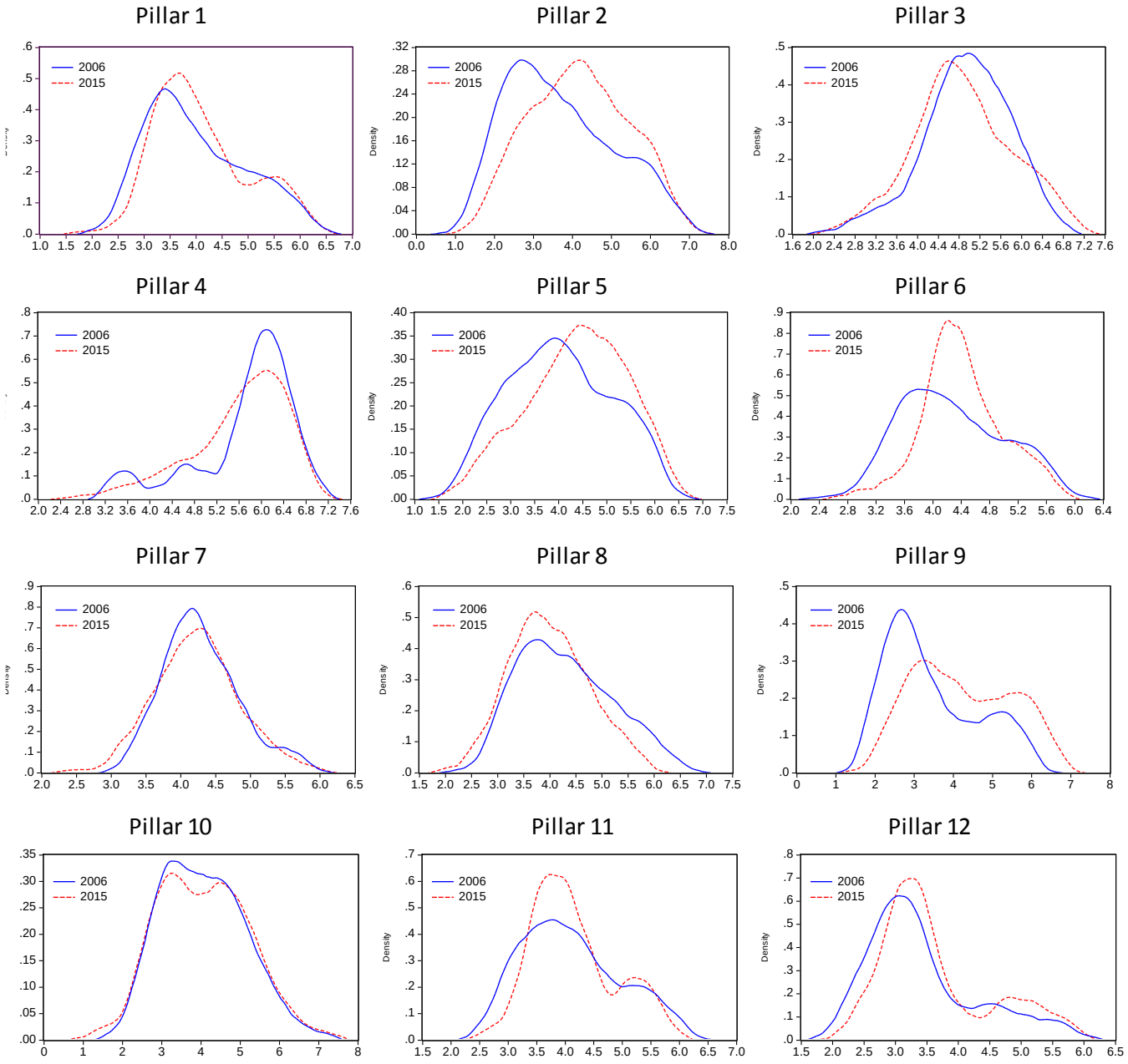
[17] Figure 5 shows that on Institutions (Pillar 1), Business Sophistication (Pillar 11) and Innovation (Pillar 12), there is stronger differentiation between best performers and the rest (i.e., the 2015 distribution of performance is bimodal). On basic education and health (Pillar 4) there is less cross country differentiation. On infrastructure (Pillar 2), higher education and training (Pillar 5), market competitiveness (Pillar 6) and technological readiness (Pillar 9), there are improvements across the board (the distribution of performance moved to the right). In contrast, the distribution of macroeconomic performance (Pillar 3), labor market efficiency (Pillar 7), and financial development (Pillar 8) moved to the left.

[18] The Federal Law on PPPs (224-FZ) was signed in mid-2015 and came into force in 2016.

[19] Data on regional income per capita for the period 1998-2014 suggests limited regional convergence, with large urban centers (and neighboring regions), and resource-rich regions explaining most growth at the aggregate level. At the same time, about 50 percent of investment on road infrastructure in 2014 was in Moscow and its metropolitan area (Blinkin, 2015).

Figure 5. Global Competitive Index Pillars

(Absolute levels; 1-7(best); distribution in 2006 and 2015)



Source: Global Competitive Index (GCI) Database and IMF staff calculations

24. **Russia's experience with structural reforms suggests that the right diagnostics and the implementation of policy actions have been at times insufficient for progress.** In this regard, the establishment of clear (measureable) targets, carefully sequenced actions, with appropriate accountability for their implementation, and frequent monitoring could help advance reforms, and in parallel, contribute to improve investors' perceptions.[20]

E. Summary and Conclusions

25. **The authorities have correctly identified in the past the needed structural economic problems affecting Russia.** However the sequencing and prioritization of policy actions have not been sufficiently focused and appear to have been reactive to the changing economic environment. In particular, oil price changes and its volatility appear to be related with the strength of reform implementation. Insufficient progress in some key areas, as recognized by the authorities, constitutes one of the challenges to overcome, which is consistent with some evidence on mixed effectiveness of policy actions.

26. **There is evidence of a gradual convergence of Russia's performance to that of more advanced economies, though significant gaps remain.** Progress in Russia's GCI indicators in the past 10 years has been generally stronger for those indicators in which Russia's performance was comparatively weaker in 2006. However, Russia continues to compare unfavorably with respect to OECD averages on a wide range of indicators. Most notably, Russia's relative strengths and weaknesses have remained persistently similar to those observed 10 years ago. This suggests that, despite progress, the pace of reform has been somewhat limited in some areas.

27. **The authorities' view that oil prices will be persistently low and a RER more aligned to fundamentals should serve as incentives to build a less oil-dependent growth model.** Adapting to the lower RER will require closing competitiveness gaps further in areas where Russia still lags OECD, including on institutions; market competitiveness; technological readiness; business sophistication; and, innovation. Better leveraging Russia's current competitive advantage on macroeconomic conditions, labor market flexibility, and market size is also important. In particular, leveraging Russia's large market size will require firms to recalibrate the trade-off between varieties and volumes, as well as further trade integration.

[20] The authorities monitor, e.g., the implementation of the 2012 decrees and other initiatives. The participation of independent local experts (e.g., from Research Universities) in the assessment of policy implementation in key areas should support accountability.

28. Fiscal consolidation against the backdrop of lower medium-term oil prices creates both risks and opportunities for reform implementation. Delinking government spending from fluctuations associated with the oil price super cycle should limit RER fluctuations and provide the right incentives for firms in the tradable sector and workers alike. However, public spending in education (both basic and advanced), health, and economic infrastructure should be preserved if Russia is not to lose international competiveness. Changes in the tax structure (if needed) should target consumption rather than investment, and avoid affecting incentives to work and invest. Pension reform should both contribute to support fiscal consolidation and labor supply.

29. Clear targets, carefully sequenced actions, appropriate accountability, and frequent monitoring could help advance reforms. Cutting the distance with the OECD will require carefully designed and sequenced policy actions, rather than actions that are reactive to the changing external environment. Initiatives to evaluate changes in regulations with respect to their ability to bring Russia closer to OECD standards should allow a fast resumption of accession talks while geopolitical tensions subside.[21]

[21] For instance, in January 2016, the government established allocations for key ministries for training of government officials by OECD experts.

References

Blinkin, M. (2015), "Presentation on Road Infrastructure Trends in Russia", mimeo; Moscow.

Government of Russia (GoR, 2000-15), "Presidential Address to the National Assembly and the Duma", Moscow.

Government of Russia (GoR, 2011), "Strategy 2020", Moscow.

Kyobe, A. (2016), "Raising Productivity Growth in Russia", 2016 Article IV Consultation with the Russian Federation, International Monetary Fund, Washington, D.C.

IMF (2013), "Anchoring Growth: The Importance of Productivity-Enhancing Reforms in Emerging Market and Developing Economies", IMF Discussion Note, Washington, D.C.

IMF (2014a), "Structural Reforms and Macroeconomic Performance: Initial Considerations for the Fund", Washington, D.C.

IMF (2014b), "Russian Federation: Fiscal Transparency Evaluation", Washington D.C.

Medvedev, D. (2015), "A new reality: Russia and global challenges" Russian Journal of Economics, Vol.1, Issue 2, pp. 109-129.

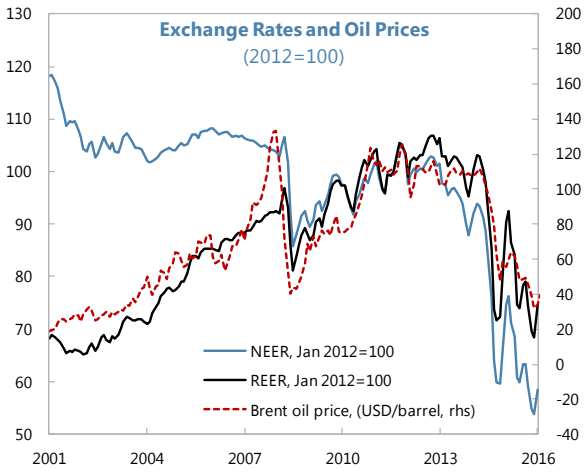
World Economic Forum (WEF, 2006-15), "Global Competitive Index Database", (several issues), Davos.

RAISING PRODUCTIVITY GROWTH IN RUSSIA[1]

The recent large real effective exchange rate (REER) depreciation provides an opportunity for Russia to increase and diversify its exports, an imperative, with the era of high commodity prices possibly at an end. The response of Russian exports, however, has been weak to-date suggesting structural constraints are preventing a rapid reallocation of factors of production from the non-tradable to the tradable sector. A supply-side growth diagnostic shows capital accumulation, a more efficient allocation of the labor force and higher productivity (within-sector and structural transformation) are needed to continue income convergence. Cross-country econometric estimations find improvements in the institutional and business environment are key reform priorities to increase productivity and facilitate a larger response of exports to movements in the REER. Firm-level estimations support cross-country findings.

A. Introduction

1. The decline in oil prices is an opportunity to focus on structural policies to increase productivity. After rising for nearly a decade, oil prices have dropped sharply since 2014. The ensuing real effective depreciation of the ruble provides an opportunity to increase and diversify exports away from energy. So far the non-energy export response has been muted suggesting structural impediments are holding it back. Attaining growth rates as high as those during the commodity boom and continuing income convergence will be challenging under the current outlook for persistently low oil prices, unless Russia implements reforms. Structural reforms will be indispensable to remove supply-side rigidities that constrain productivity growth and prevent factor reallocation from the non-tradable to the tradable sector.



2. This paper looks at the supply side drivers of growth to better direct policies needed to increase productivity. A growth accounting exercise finds a productivity surge, supported by high oil prices, underpinned Russia's growth and income convergence in the last decade. Continued convergence will require capital accumulation and productivity growth[2]. A decomposition of

[1] Prepared by Annette Kyobe, with contributions from Francois Painchaud.

[2] Productivity growth is the ultimate driver of growth in the long run**.** Development accounting literature shows productivity differences determine differences in income levels across countries (Bosworth and Collins 2003; Hall and

(continued)

aggregate labor productivity into the relative contribution of within-sector productivity (agriculture, manufacturing, services) and intersectoral labor reallocation, using the McMillan and Rodrik 2011 methodology finds higher productivity was the result of increasing within sector productivity. Further increases in within sector productivity will require improvements in the institutional and business environment. Structural transformation will require economic diversification. Increasing productivity will mean increasing investment and shifting resources, especially labor, toward higher value added sectors manufacturing and agricultural activities, and modern services activities (e.g., transportation, distribution, and ICT services).

3. **The paper establishes reform priorities for higher economic growth.** Priorities are set by identifying competitiveness gaps relative to the average EU country and ranking these according to their importance for growth. It may be better to prioritize close a smaller gap on a reform that has a higher growth payoff, than a larger gap that has a smaller payoff. Reforms with the largest payoff for Russia include aspects of the contracting environment, i.e. property rights protection and corruption (e.g. irregular payments and bribes, diversion of public funds and reliability of police) policies to decrease product market regulation, improve the business environment and invest in infrastructure, particularly roads and electricity supply.

B. Russia's Export Response to Depreciation

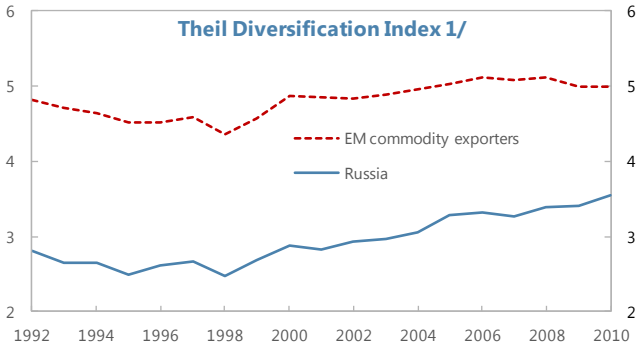
4. **Russia is yet to see a large export response to recent exchange rate depreciation.** As of April, Russia's REER has fallen by more than 20 percent since January 2014. However, despite the ruble's significant adjustment towards a new lower equilibrium, there has been little response of non-energy exports (see Box 1 in staff report). Yet historical experience in advanced and emerging market and developing economies suggests exchange rate movements have sizable effects on export volumes (Leigh et al, 2016). Focusing on 66 large exchange rate depreciations (those falling into larger than the 90th percentile of exchange rate movements) between 1980 and 2014, they find a 10 percent real effective depreciation in an economy's currency is associated with a rise in real net exports of, on average, 1.5 percent of GDP. These effects fully materialize over 3-5 years, though most of the adjustment occurs in the first year. There is, however, considerable cross-country variation around this response.

Jones 1999; Klenow and Rodríguez-Clare 1997). Growth will be sustained to the extent it is accompanied by productivity growth, as growth driven by factor accumulation tapers off as the returns to more capital and labor diminish in the context of the neo-classical growth model.

5. Structural factors could explain a muted response of exports to real depreciations in Russia. We investigate the impact of two country-specific factors:[3]

- First, structural rigidities may not allow for a rapid reallocation of factors of production from the non-tradable to tradable sectors. To investigate this effect, we split the sample of depreciations into those that occurred in countries with good structural indicators and those in countries with poor indicators. We define good structural indicators as business regulation (and property rights protection) above the 75th percentile and poor as those below the 25th percentile. Russia, in the 25th percentile on business regulation (in the 10th percentile on property rights protection) is the poor structural indicator category. When the business environment is poor, the export response is 7 percentage points less compared to episodes that occur in a good business environment (Chart 2 of Figure 1). Results are similar splitting the sample along good and poor indicators of property right protection.

- The second factor tempering the export response could be an undiversified export basket. On the production side a more diversified economy can adjust the output level more easily due to economies of scale; on the sales side, product diversification reduces the average cost of trade in each export category. Firms with more diversified production benefit more from depreciation, Anand et al (2016). We investigate if the structure of the export basket affects the export response. The sample of depreciations across countries is divided into those in diversified and undiversified exporters using the Theil index of diversification.[4] We define diversified exporters as countries above the 50th percentile on the Theil, and undiversified exporters are those below. Russia, with a Theil of 3.5, falls just below the 50th percentile. Diversification in Russia has decreased over time with external trade continuing to be dominated by natural resources, supported by a high oil prices. Among EM commodity exporters, Russia is the third most diversified exporter (after Bahrain and Colombia) and in the 90th percentile of the most diversified among a group of 25 commodity exporters. In episodes of exchange rate depreciation in undiversified exporters there is no positive export response to depreciation, compared to diversified exporters where exports increased 5 percentage points in the first three years.

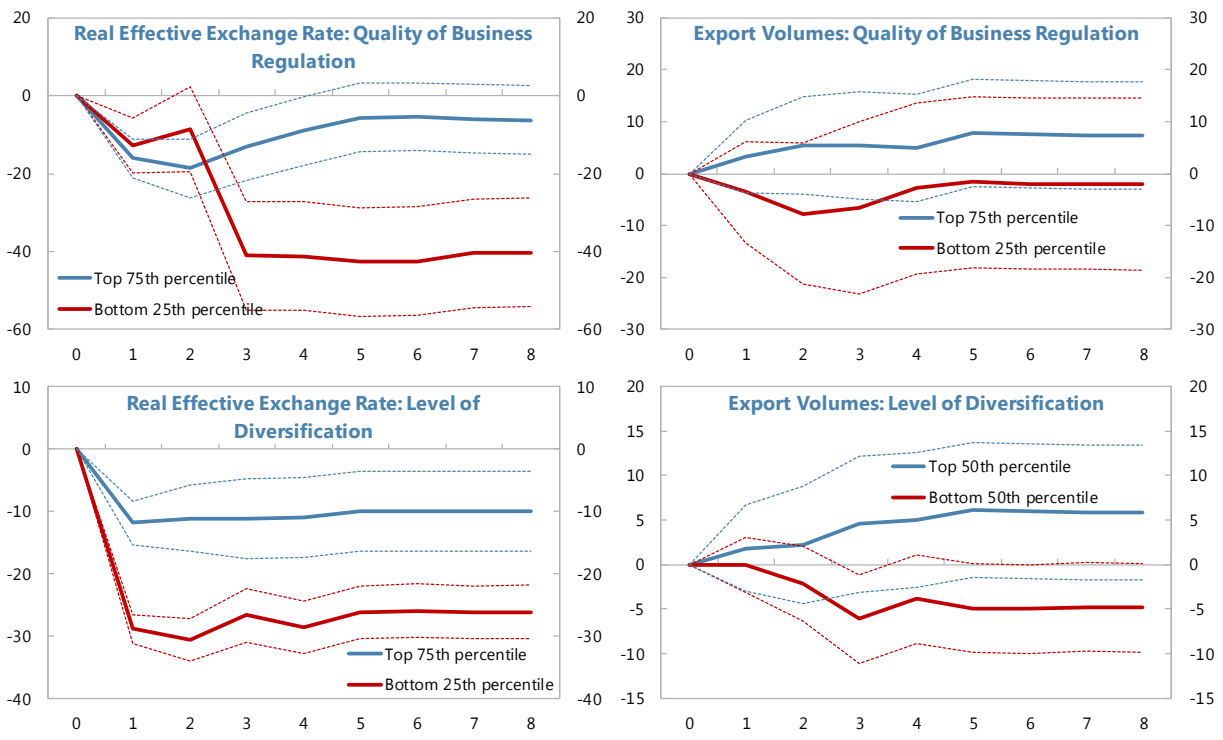


1/Papageorgiou and Spatafora (2012). A lower number means greater diversity

[3] One explanation in the literature for a muted export response is global value chains (Ahmed et al 2015). Here exchange rate depreciations not only favorably alter the relative prices of exported goods, but also the cost of the intermediate imported goods which partially offset competitive gains.

[4] The Theil index measures export diversification, Papageourgiou and Spatafora, (2012).

Figure 1. Export Dynamics After Large Exchange Rate Depreciations: The Role of Structural Factors (Percent; years on x-axis)



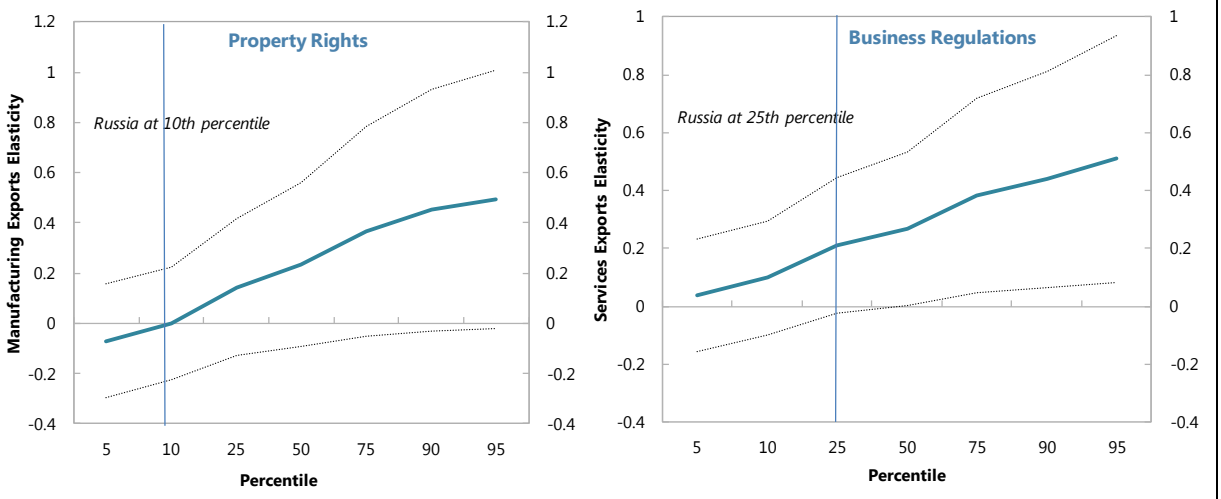
Sources: World Economic Outlook; and IMF staff estimates.
Note: Dashed lines denote 90 percent confidence intervals.

6. Easing structural rigidities would facilitate a stronger export response. We analyze the impact of improvements in property rights and business regulation on exports' response to REER movements using cross-country panel regressions (Cuilluc and Kyobe 2016).[5]Figure 2 shows how elasticities (the percentage change in exports in response to a one percent change in the REER) change across the distribution of structural indicators across countries. As indicators improve the elasticity increases, i.e. countries with better structural indicators respond more to a given REER depreciation. For example, if Russia were to improve property rights, moving from its current position (the 10th percentile of the distribution) to the 95th percentile its export elasticity for

[5] The estimated equation is $\Delta \log X_{it} = \beta_1 \Delta \log REER_{it-1} + \beta_2 \Delta \log REER_{it-1} \times S_{it-1} + \beta_3 S_{it-1} + \beta_A' Z_{it} + \omega_i + \eta_t + \varepsilon_{it}$ where is exports of country in period , is the structural reform of interest, is a set of control variables (trading partner growth and export goods inflation), and capture country and time fixed effects, respectively. We use the negative of CPI REER change, i.e. a depreciation has a positive sign. The effect of the structural indicators on the export elasticity is captured by the coefficient on the interaction term. The equation is estimated on manufactured and services exports using data averaged over three years. Regressors are lagged to control for endogeneity.

manufacturing goods would increase from 0.1 to 0.45, i.e. its exports would have four times as large a response to a given REER depreciation. A similar result is obtained looking at the impact of business regulation on service exports where export elasticities would increase from 0.2 to 0.4.

Figure 2. Export Elasticities Across Structural Indicators



Sources: *World Economic Outlook*; Global Competitiveness Indicators (WEF); and IMF Staff estimates.

C. Supply-Side Drivers of Growth

7. A supply side perspective suggests higher productivity and capital accumulation are important beyond strengthening the export response to depreciations. Russia has experienced substantial improvements in productivity over the last decade, supported by high oil prices, that accelerated convergence toward the income and productivity levels of advanced countries. Since the 1998 financial crisis to 2010, growth in income per capita has averaged 6 percent: 4 percentage points (ppt) faster than advanced countries; 3 ppt faster than EM commodity exporters (EMC); 2 ppt faster than EM income peers (EMI) and 4 ppt shy of the rapid growth rates in China.[6] A growth accounting methodology (Box 1) decomposing real GDP per capita growth into the contribution of growth in the capital stock, the labor force, and Total Factor Productivity growth (TFP) shows productivity gains have accounted for a substantially larger share of real GDP per capita growth in

[6] *BTICS* are Brazil, Turkey, India, China and South Africa. *EM income peers* are Brazil , Chile, China, Croatia, Czech Republic, Estonia, Hungary, India, Indonesia, Kazakhstan, Latvia, Lithuania, Mexico, Poland, Russia, Slovakia, Slovenia, South Africa.*; EM commodity exporters* are Algeria, Angola, Argentina, Azerbaijan, Brazil, Bahrain, Bolivia, Chile, Colombia, Costa Rica, Ecuador, Gabon, Guatemala, Indonesia, Iran, Kazakhstan, Kuwait, Libya, Malaysia, Oman, Paraguay, Peru, Qatar, Saudi Arabia, Syria, Turkmenistan, United Arab Emirates, Uruguay, Venezuela.

Russia than comparators. However, labor utilization and especially capital accumulation have lagged peers suggesting catch up potential (Figure 3).

Box 1. Growth Accounting

Output per capita is decomposed following methodology in Hall and Jones (1999). We assume a standard aggregate Cobb-Douglas production function with physical capital, human capital, and labor as production factors and labor-augmenting technological progress. The model takes the form:

$$Y_t = K_t^{\propto}(A_t H_t)^{1-\propto} = K_t^{\propto}(A_t h_t L_t)^{1-\propto}$$

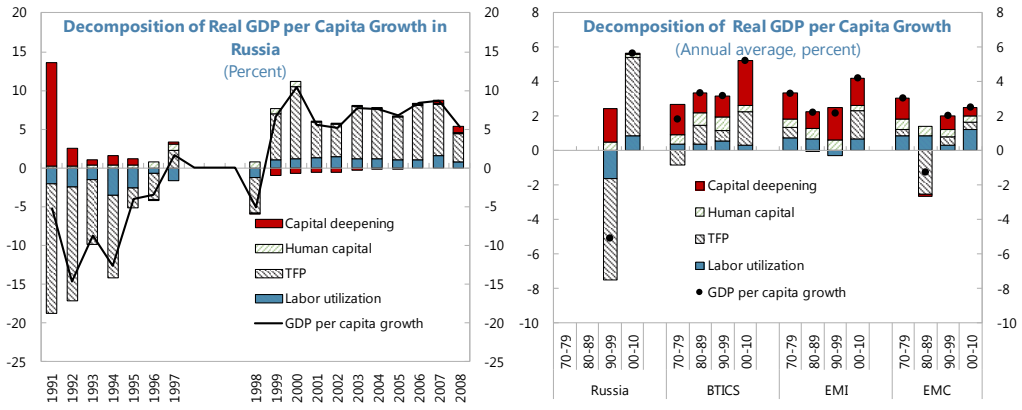
Y, K, H, h, L, and A stand for output, physical capital, effective labor input, human capital per worker, employment, and total factor productivity (TFP) respectively.

Rewriting and dividing by population (Po). GDP per capita is decomposed into its components:

$$\frac{Y_t}{Po_t} = \frac{Y_t}{L_t}\frac{L_t}{Po_t} = A_t h_t \frac{L_t}{Po_t}\frac{K_t^{\propto/(1-\propto)}}{Y_t}$$

Data on PPP-adjusted output, physical and human capital stocks, population, and employment are taken from Penn World Tables 8.1. A capital share of α of ⅓ consistent with the literature is assumed.

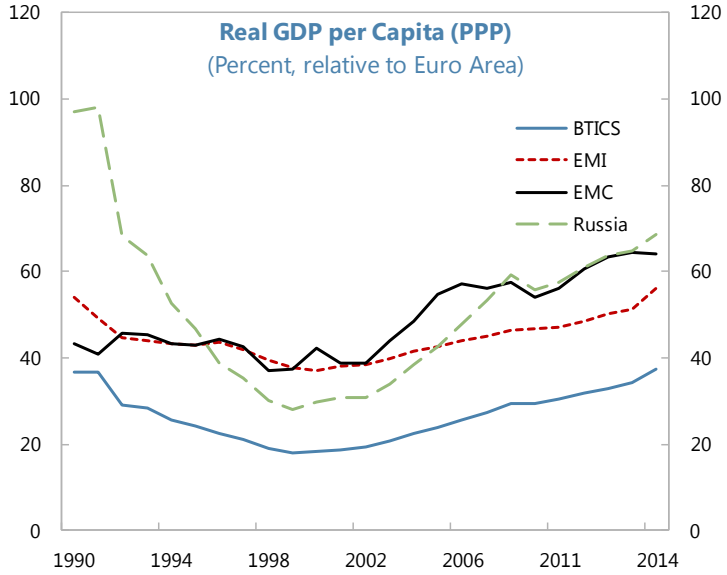
Figure 3. Supply-Side Drivers of Growth



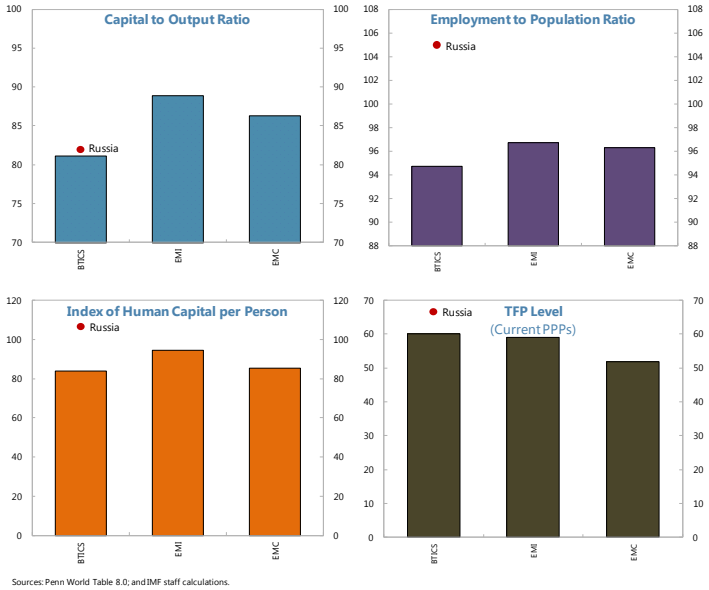
Sources: Penn World Table 8.0; World Bank, World Development Indicators; and IMF staff calculations.

D. Factor Inputs: Capital and Labor

8. Though productivity growth was high, factor accumulation lagged. Rapid growth led to convergence, but a gap persists: Russian income per capita is more than twice that of BTICS, but lags the Euro Area. Income differentials measured by the ratio of per capita income to that in the Euro Area have widened, reflecting shortfalls in factor inputs (especially capital) and TFP levels (Figure 4). Capital-to-output ratios in Russia stand at 80 percent of the Euro Areas as of 2011. Moreover, Russia lags EMI and EMCs, suggesting that investment in capital is an important factor behind future catch-up. The stock of human capital, measured by the average years of schooling across the population is considerably higher than in other EMs and equal to Euro Area countries. This measure, however, does not account for the quality of education nor whether the labor force is appropriately educated for the needs of the economy (see section on Labor market trends). TFP levels, though high in the previous decade and above EM comparators, are well below the Euro area (70 percent) suggesting a significant source of potential improvement.



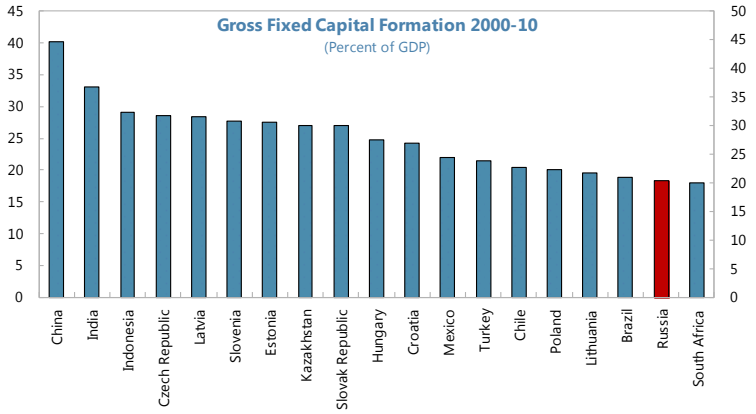
Figures 4. Convergence Gaps with the Euro Area



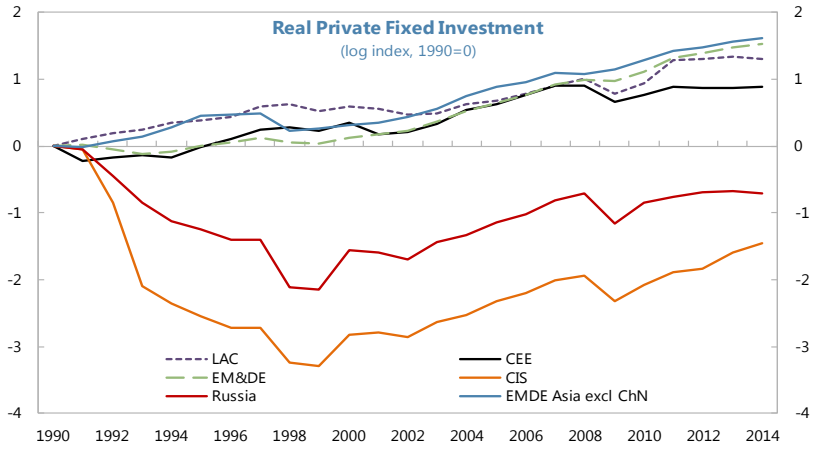
Sources: Penn World Table 8.0; and IMF staff calculations.

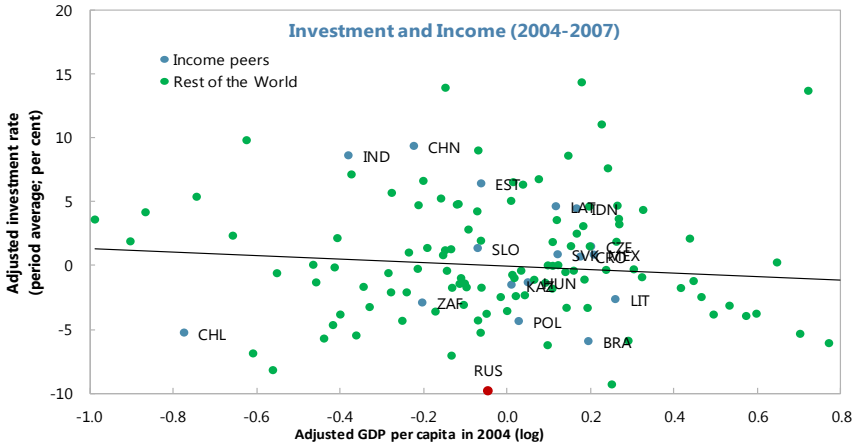
Russia: Capital Trends

9. Investment is low. Average gross fixed capital formation over 2000-2010 stood at 20 percent of GDP and has since decreased to 16 percent in 2015, a modest figure for middle income countries and lowest among income peers (Figure 5-6). Private sector investment activity, in particular, has been weak since the 1990s in part reflecting structural problems in the economy these include weakness of the institutions that regulate markets, which leads to significant variation in how the rules are applied (World Bank, 2015). Real private investment growth rates remain negative, capital is depreciating faster than is being built, and investment rates have reached a plateau since the crisis.



10. Russia should invest in physical and ICT capital. While lower investment rates may reflect that Russia already had sufficient capital to begin with, this does not seem to be the case. Investment levels in Russia are markedly lower than would be expected on the basis of countries' economic characteristics. The text figure compares the average annual rate of gross fixed capital formation for countries, accounting for differences in the existing stock of capital, the level of income per capita and the macroeconomic environment (economic growth and inflation) and political stability. Countries with a lower income per capita – those in the catching-up phase to advanced countries – tend to have higher



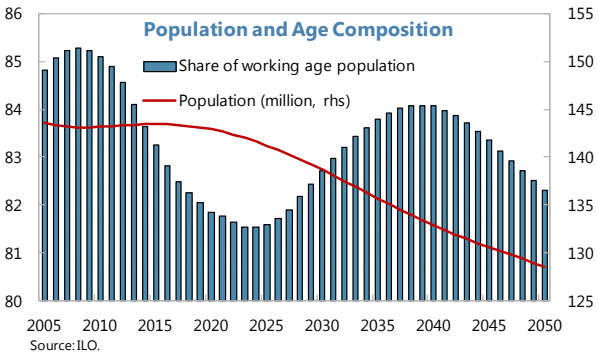


Source: *World Economic Outlook*; and IMF staff calculations.

rates of investment; but Russia lagged peers over 2004-2007.[7] There is an excess of savings over investment in Russia. Channeling part of these savings (while maintaining intergenerational equity) into investment in capital would help increase the capacity of the economy to respond to new lower exchange rate equilibrium and increase productivity.[8]

Russia: Labor Trends

11. Not only is capital short, but Russia also faces the challenge of adverse demographic trends. The International Labor Organization (ILO) projects that Russia's population will decrease from about 145 currently to 130 million by 2050. The negative impact on economic growth of a shrinking population would be magnified by the decline in the share of working-age population through 2025. This argues for a more efficient allocation of the labor force to support growth.



12. Wage flexibility has helped support employment (Figure 5).[9] Despite a significant recession in 2015, Russia's unemployment rate has remained broadly stable at around [5.5-6.0] percent as real wages declined significantly resulting in an adjustment through wages instead of employment. This may reflect low unemployment benefits, including non-financial benefits such as training and the ability of the government to match unemployed with vacancies.

13. Labor mobility seems hindered by geography and skill mismatches. In particular, the unemployment and employment rates vary significantly across regions, indicating a lack of geographical mobility.[10] This may reflect housing markets problems, high search and moving cost, and financial constraints.[11] In addition, there is evidence of skill mismatches as the unemployment rate differs markedly across level of education. Moreover, sectors with high productivity growth (where demand for labor should be high) are not consistently matched with high employment

[7] Russia requires around 1 percent of GDP or $13.2 billion per year in investment (EBRD, 2015-2016).

[8] Capital investment increases productivity growth, in the context of new growth models (capital generates constant or increasing returns, in contrast to neoclassical models where capital generates diminishing returns). For example, R&D efforts by one firm can spill over and affect the stock of knowledge available to all firms, increasing productivity (Romer, 1986**).**

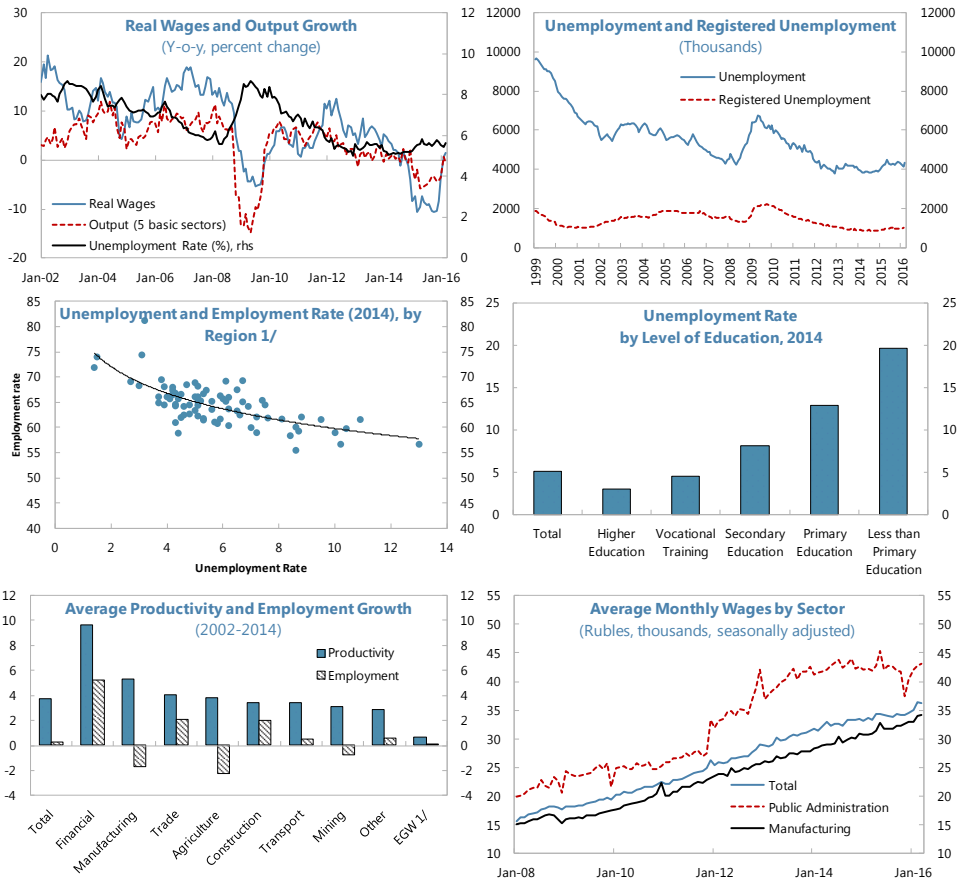
[9] See "Economic Survey of the Russian Federation 2014", OECD, 2014.

[10] The coefficient of variation for regional unemployment is higher in Russia than in the US, denoting less labor mobility, but lower than in Europe.

[11] See "Russia's Regions: Income Volatility, Labor Mobility, and Fiscal Policy", Kwon and Spilimbergo, IMF, 2005. See also "Inter-Regional Convergence in Russia", Guriev, 2012.

growth, although the real exchange rate appreciation through 2014 may have contributed to a reallocation of labor towards non-tradables. Business surveys confirm that workforce skills are a major constraint to growth.[12] Finally, relatively higher wages in public administration, and the large footprint of the public sector in the economy, may contribute to a misallocation of labor.

Figure 5. Wage Flexibility, Lack of Mobility and Skills Mismatch

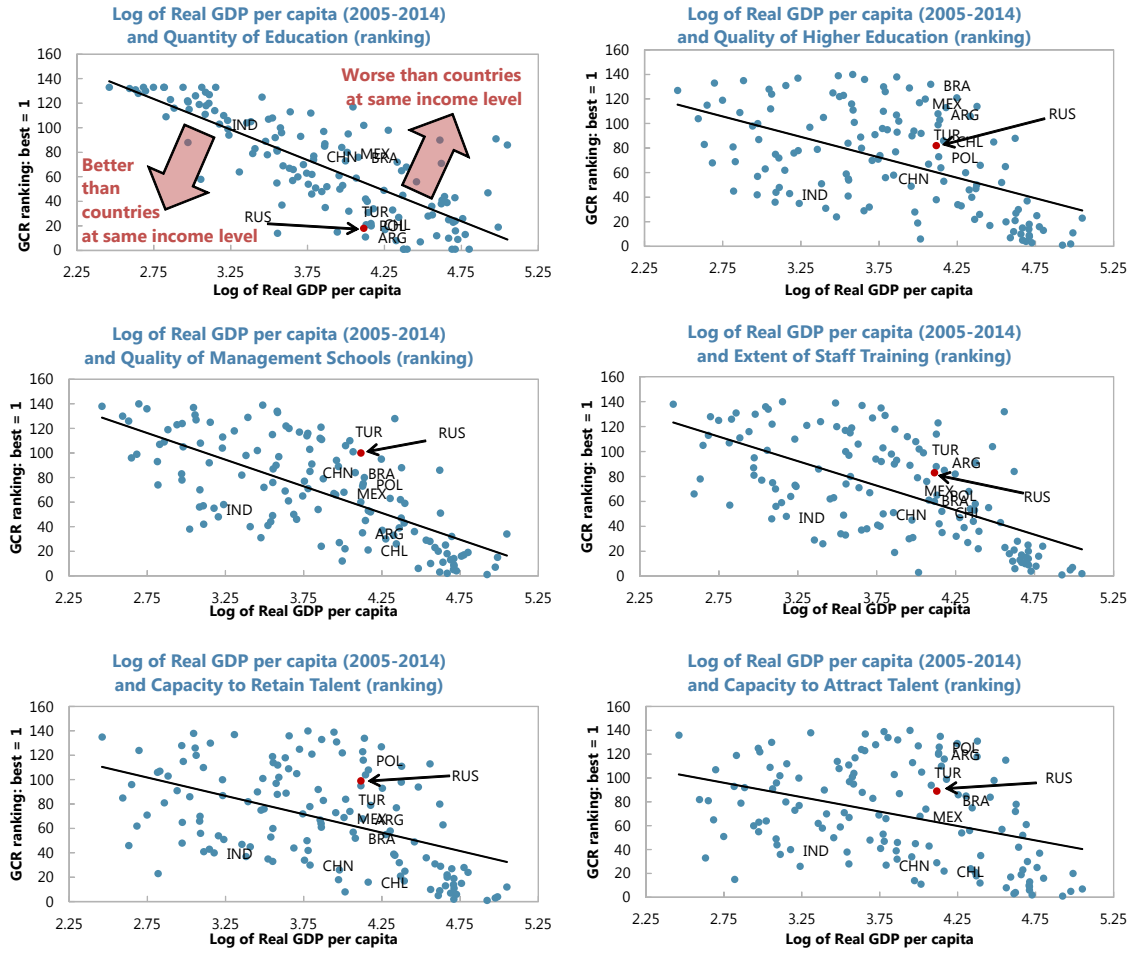


Source: Rosstat, Haver and staff calculations.
1/ Excludes Ingushetia and Tuva regions, and the Chechen republic.

[12] See "The Business Environment and Enterprise Performance Survey", EBRD, 2013. See also "Matching Skills and Labour Market Needs Building Social Partnerships for Better Skills and Better Jobs", World Economic Forum, 2014.

14. Russia should implement reform to support the labor market. According to the Global Competitiveness Report (Figure 6), Russia ranks relatively well in terms of the quantity of education but improvements could be made in (i) quality of tertiary education and management schools; (ii) on-the-job training; and (iii) attracting and retaining talent. Progress in these areas would reduce skills mismatches and increase labor mobility. Strengthening active labor market policies will require greater collaboration between the government, education/training institutes, and employers. Providing additional incentives to postpone retirement (through pension reform) would limit the prospective decline in the labor force. Renewed privatization efforts could release labor from inefficient SOEs to more efficient private sector companies, but this should be accompanied by labor polices to support the transition.

Figure 6. Russia's Enrollment Rates are High but Workforce's Skills Could Be Improved



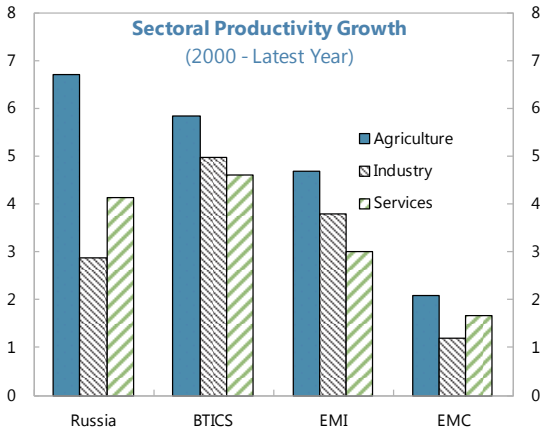
Source: Global Competitiveness Report and staff calculations.

E. Aggregate, Sector and Firm Productivity

15. While factor accumulation lagged, productivity growth has been the main driver of real GDP per capita growth. Since the mid-1990s, out of an overall growth rate of 6, TFP contributed 4 percentage points. These sizeable increases in TFP reflect dramatic changes to economic structures since the onset of transition, a rebound in capacity utilization and an upswing in commodity prices (price booms can raise TFP by encouraging faster adoption of technology and higher spending on R&D (IMF, (2015)).[13] A caveat associated with measuring productivity in Russia is that high TFP growth may reflect higher capacity utilization as growth recovered from the deep contraction of the transition period. Not accounting for an increasing trend in capacity utilization could result in an overestimation of the TFP contribution to GDP growth (IMF, 2012). After adjusting for trends in capacity utilization, however, TFP still accounts for more than two-thirds of productivity growth (World Bank, 2014).

Sector Productivity

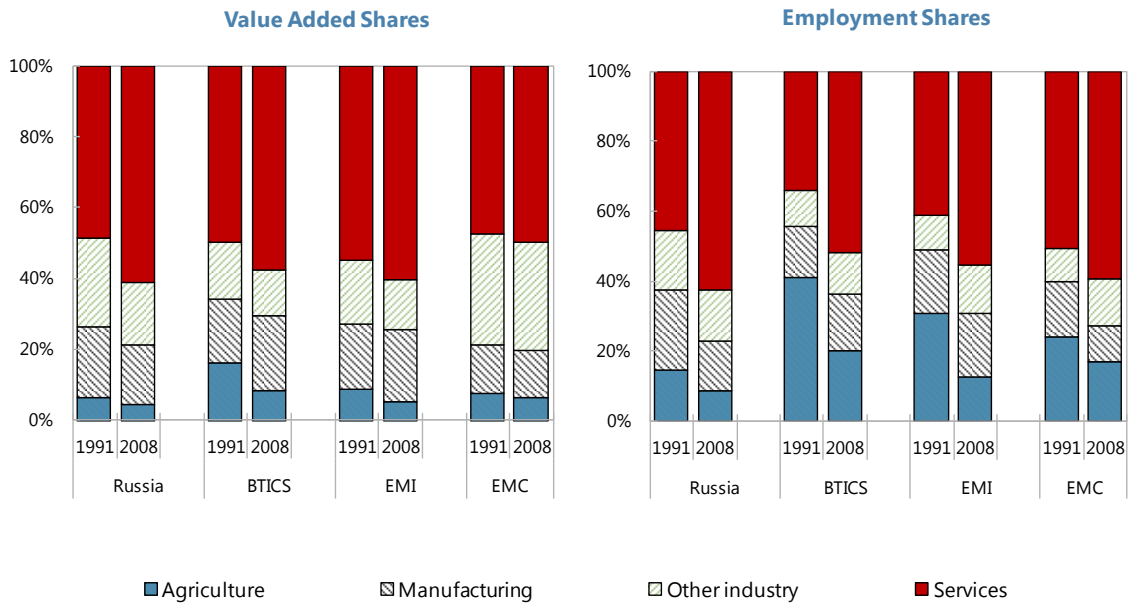
16. Underpinning aggregate productivity is sector productivity, with resources shifting to the services sector. Following the transition from central planning, labor shedding from agriculture (6 ppts) and manufacturing (9 ppts) shifted resources toward the previously underdeveloped services sector. More than 60 percent of the workforce works in services now, with the share of services in total value added growing from 49 to 61 ppts during 1990-2008. The share of agriculture and manufacturing in total value added averaged 22 ppts during 1990–98 and fell to 16 ppts during 2000-2008. The share of other industry fell ppts, but still accounts for a relatively high share of industry value added (20 ppts compared to 13 in BTICS) but this mostly extractive industry (mining) only employs 1.5 percent of the work force. Employment and value added patterns are consistent with Russia's level of development. A similar pattern is observed in comparator EMs over the same period, though the move of labor away from agriculture in EMs is larger (18 ppts) though with higher initial employment shares in agriculture, 35 ppts in 1990, compared to only 14 ppts in Russia.



Sources: UN National Accounts database; International Labor Organization; World Bank, World Development Indicators; Groningen Growth and Development Center (GGDC) database; and IMF staff calculations.

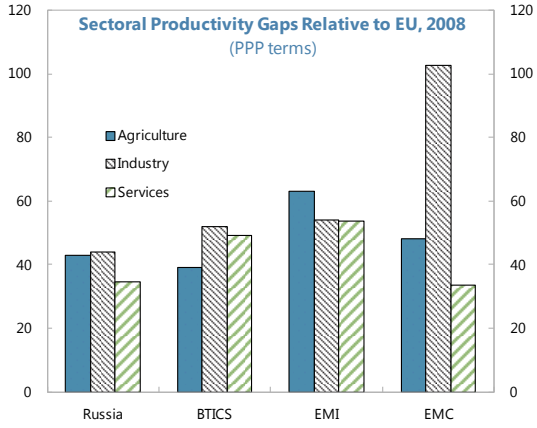
[13] See WEO chapter 2, IMF 2015 for a discussion of the impact of the commodity prices on macroeconomic variables including capital accumulation and TFP.

Figure 7. Sector Shares



Sources: UN National Accounts database; International Labor Organization; World Bank, World Development Indicators; Groningen Growth and Development Center (GGDC) database; and IMF staff calculations.
Note: Industry includes mining, public utilities, and construction.

17. Improvements in productivity are mostly due to increases in within-sector productivity. A decomposition of average labor productivity into structural change and the within-sector component finds 90 percent of labor productivity growth between 1990 and 2008 was due to better utilization of resources and technology catch-up within sectors of the economy (Box 2 and Figure 8). As in income peers, structural change, the reallocation of factors of production to more productive sectors played a small role but positive role. The positive structural transformation terms reflects, the reallocation of labor to sectors with high productivity (services) and out of sectors with lower productivity (other industry). This stands in contrast to other commodity exporters that saw negative structural transformation, as a result of labor moving to lower productivity activities. In Russia services are more productive than manufacturing, reflecting the higher value added services of the Russian economy (i.e. financial intermediation) compared to the lower value services in other EMs (e.g. call centers in India, Kochar et al 2006). In part explaining the low contribution of structural transformation to productivity in Russia, agriculture is the most productive sector, with growth 3 percentage points higher than comparators.



Sources: UN National Accounts database; International Labor Organization; World Bank, World Development Indicators; Groningen Growth and Development Center (GGDC) database; and IMF staff calculations.

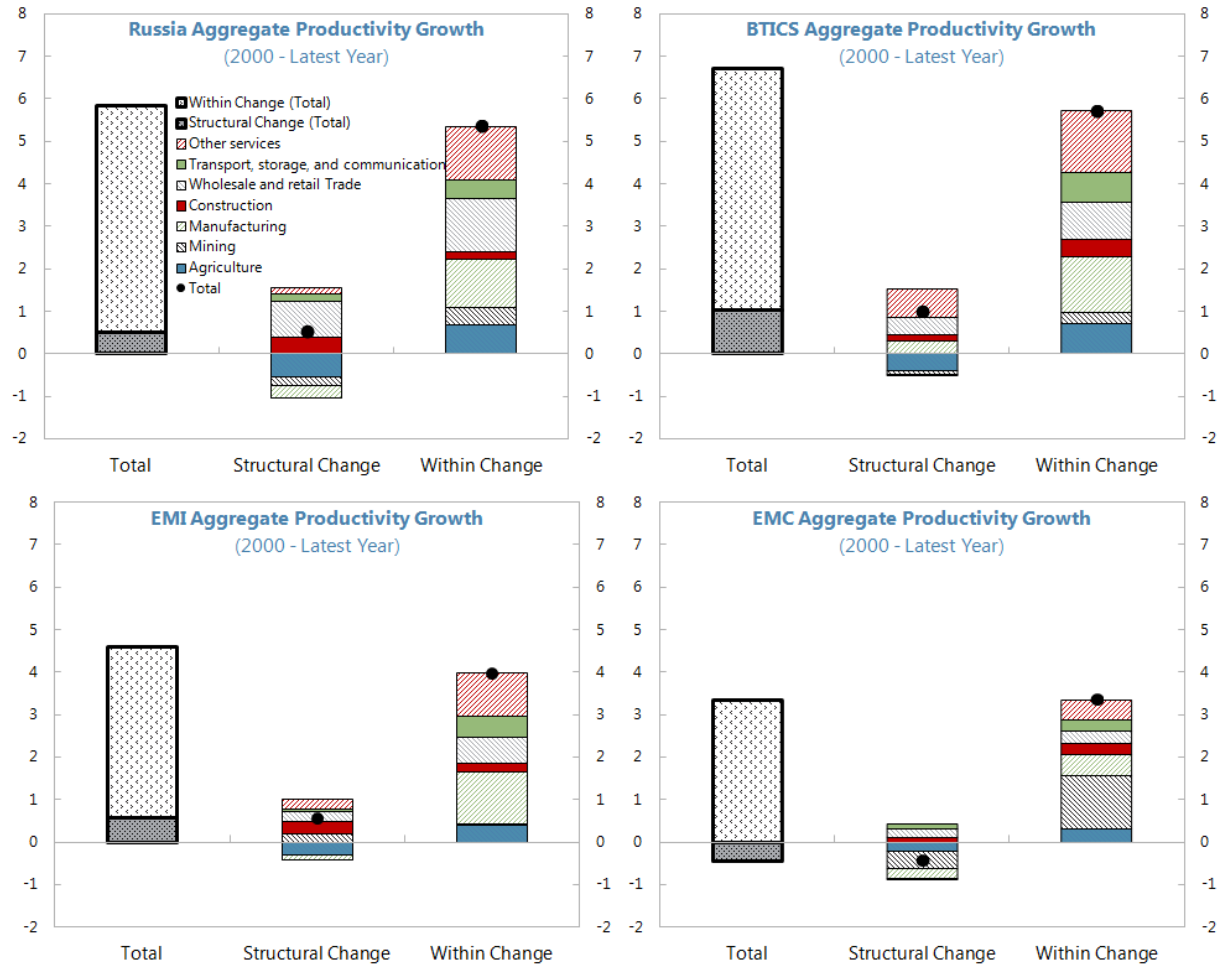
Box 2. Decomposing Aggregate Labor Productivity

We decompose the change in aggregate productivity into a "*within*" and a "*between*" effect which is also the structural change component. The "*within*" effect captures productivity growth within sectors— it refers to the contribution of each sector's productivity growth to aggregate productivity growth, measured by the sector's productivity growth weighted by the initial value-added share of the sector. The "*between*" effect measures the productivity effect of labor reallocation across sectors— it is the contribution of intersectoral labor shifts to aggregate productivity growth, measured by change in the sector's employment share during 1990–2008 weighted by its productivity level in 2008. Following McMillan et al. (2014) the change in aggregate productivity (P_t) is decomposed as follows:

$$\Delta \mathbf{P_t} = \sum_{\mathbf{i}} \Delta \mathbf{P_{it}} \left(\frac{\mathbf{L_{io}}}{\mathbf{L_o}} \right) + \sum_{\mathbf{i}} \Delta \left(\frac{\mathbf{L_{it}}}{\mathbf{L_t}} \right) \mathbf{P_{it}}$$

where i is the sector (agriculture, manufacturing and services), L is the number of employed, and t the period. The change in aggregate productivity is decomposed into within-sector productivity changes (the first term on the right-hand side which we call the "*within*" effect, and the effect of changes in the sectoral allocation of labor the "*between*" effect," or structural change). Structural change is positive when the weighted change in labor productivity levels in sectors is positive—when labor moves from less to more productive sectors.

Figure 8. Decomposing Aggregate Productivity



Sources: UN National Accounts database; International Labor Organization; World Bank, World Development Indicators; Groningen Growth and Development Center (GGDC) database; and IMF staff calculations.

18. Substantial gaps in sector productivity levels remain with the Euro Area. Productivity levels in Russia though better than in income peers are nearly three times worse those of the Euro Area, despite efficiency gains during transition. These gaps are indicative of a significant misallocation of productive inputs within sectors. Firm level evidence confirms the role of resource misallocation plays in driving aggregate income gaps (see Andrews and Cingano, 2014).

19. Structural policies should focus on closing within sector productivity gaps. In Russia, given structural changes have already occurred and the high productivity of the agricultural sector, there is less scope for structural transformation. Instead, productivity gains would come from increasing within sector productivity through productivity gains from reducing the misallocation of resources and shifting resources towards more technology intensive activities—higher value added manufacturing and agricultural activities, and services activities (e.g., transportation, distribution, and ICT services). Policy efforts should reduce rigidities in labor, product and credit markets, including by

reducing the role of the state, to improve resource allocation from less productive to more productive firms within the sector and have a significant positive effect on aggregate productivity (see "A medium-term perspective on reforms", SIP 2016).

Firm level Productivity

20. Firm level analysis of 700,000 Russian firms support aggregate findings.[14] Data covers the period 2009-2012 is from ORBIS and covers 49.7 percent of employment in Russia (the share of total employment hired by firms in the sample to the aggregate level of non-financial sector employment). Figure 9 illustrates productivity, measured as the log of the ratio of firm's turnover to the number of employees, revealing differences across time, firm size and sector:

- Productivity increased since 2009. Improvements, particularly in micro (fewer than 9 employees) and small firms (fewer than 20) are a result of the exit of low-productivity firms and labor shedding during the global financial crisis in 2008–09 crisis (IMF, 2016).

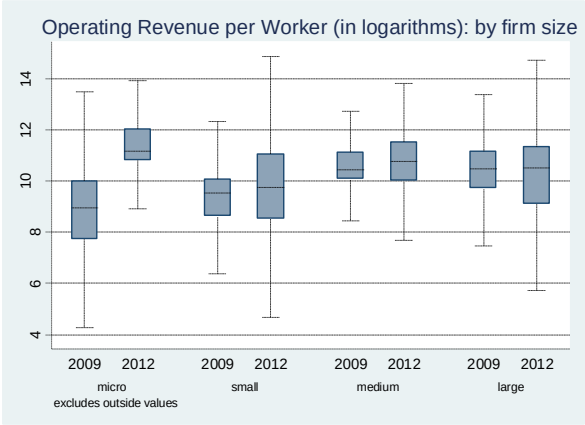
- The productivity of micro firms, those with fewer than 9 employees, is relatively high in Russia, but as in other countries productivity increases with firm size (OECD, 2014).

- Firms exposed to less competition are less productive. Productivity is higher in manufacturing (tradable) than in services sectors (non-tradable). Within manufacturing, traditional sectors that compete globally, chemicals, rubber and plastics are most productive. Lower productivity in hotels and restaurants and other services drives lower services productivity. Moreover, the dispersion around median productivity is greater for services categories, especially in other services.

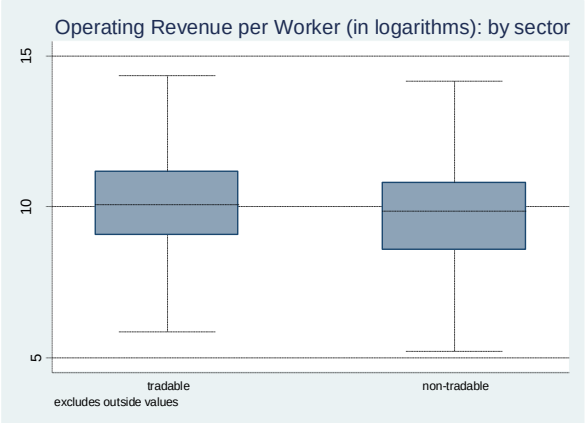
[14] We drop firms with less than one employee, and firms in the 1st and 99th percentile of the productivity distribution following OECD 2014. We keep the sample of firms the same over the period of interest.

Figure 9. Russian Firm Productivity[1/]

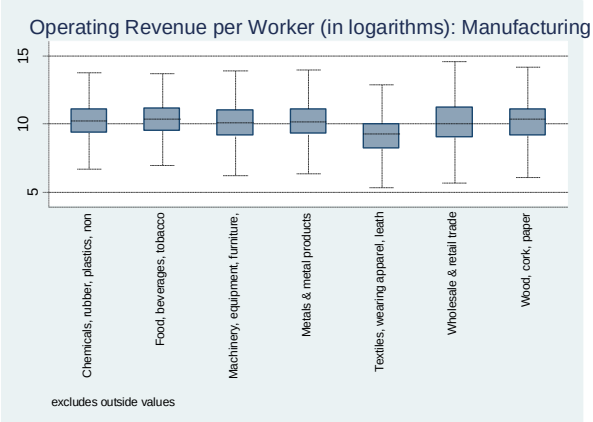
Productivity increases with firm size and since 2009



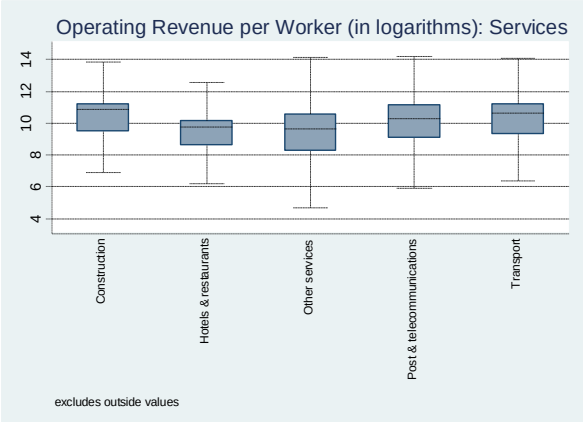
Productivity is higher in tradable sector (manufacturing) than in non-tradable (services)



Within manufacturing, chemicals, rubber and plastics are most productive



Low productivity in hotels and restaurants and other services drives lower services productivity



[1/]The horizontal line inside each box is the median of the group. The top and bottom of the box shows the 75th and 25th percentiles (top and bottom quartiles). The distance between the black lines is the range of the distribution.

F. Russia's Reform Priorities

Aggregate Priorities

21. Progress on structural reforms is pivotal for continued income convergence. Reforms should aim to increase productivity and growth, by increasing investment; encouraging labor mobility; and facilitating factor reallocation from the non-tradable to the tradable sectors. The authorities recognize this will require strengthening property rights and the business climate,

tackling corruption, reforming public administration, increasing market competitiveness, strengthening the business climate, and implementing policies to diversify the economy out of oil (see "Structural Policies in Russia: A Medium-term Perspective", SIP, 2016). These areas are consistent with reform priorities derived from our analytic exercise.

22. Russia's reform priorities are established to account for the expected payoff of closing reform gaps with the frontier. Countries can prioritize reforms along a number of dimensions: income level—in more advanced economies, reforms to technology and innovation may have the greatest pay-offs (Dabla-Norris et al 2014); institutional environment—good institutions can be a pre-requisite to reform payoffs from financial sector reform (Prati et al 2010); position in the economic cycle—fiscal multipliers are larger when economic growth is below potential, i.e. infrastructure spending is likely to have a larger growth pay-off in a recessionary environment (IMF, 2014). We establish reform priorities by benchmarking to the EU. First, competitiveness gaps are identified by benchmarking Russia to the average EU country, and on an income adjusted basis, along a wide set of indicators. [15] Then, these gaps are ranked according to their importance for growth using cross-country growth regressions. Finally, reform priorities are identified by interacting the size of the reform gaps with the growth regression coefficients. It may be better to prioritize close a smaller gap on a reform that has a higher growth payoff, than a larger gap that has a smaller payoff.

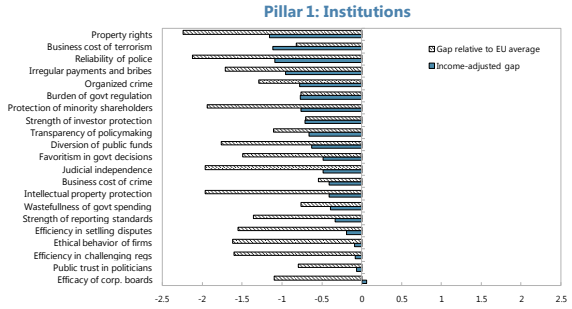
23. Russia lags the EU on all competitiveness indicators and many gaps are large even compared to countries at a similar income level. The largest gaps are in the areas of *institutions* (property rights and corruption indicators); *goods market efficiency* (tax and tariff rates); *financial market development* (legal rights); *business sophistication* (local supply quality and production process sophistication) and innovation (availability of scientists and engineers). Russia is below the bottom 30th percentile of the distribution of countries in all these areas (assuming gaps are distributed normally, a gap of -0.5 corresponds to the bottom 30th percentile). Relative to peers, Russia ranks high on innovation, infrastructure, health and education. However, gaps are large in institutions and goods and market efficiency—the pre-requisites for innovation and education policies to deliver substantial growth dividends.

[15] Methodology is based on Regional Economic Issues, Special Report, March 2015. Competitiveness is defined as the set of institutions, policies, and factors that determine the level of productivity of a country. 1–institutions, 2–infrastructure, 3– macroeconomic environment, 4–health and primary education, 5–higher education and training, 6–goods market efficiency, 7–labor market efficiency, 8–financial market development, 9–technological readiness, 10–market size, 11–business sophistication, and 12–innovation. Data is from the World Economic Forum's *Global Competitiveness Report*.

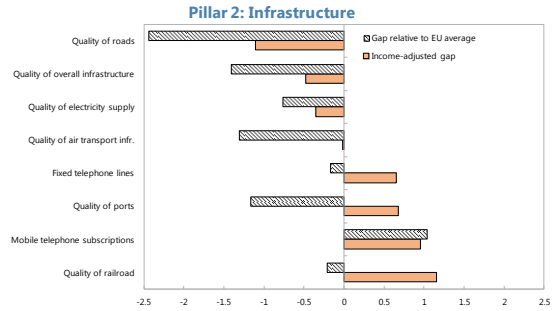
24. More specific priorities emerge looking at the sub-pillars selected based on the largest gaps along main pillars. Improving most dimensions of institutions, but in particular *property rights protection*, corruption i.e. irregular *payments and bribes, diversion of public funds, reliability of police* are important. The *quality of roads* and *electricity supply* are important components of infrastructure. All aspects of good market efficiency could be improved, especially *rules on FDI, prevalence of foreign ownership, trade barriers* emerge as priorities.

Figure 10. Reform Gaps: Selected Sub-Pillars

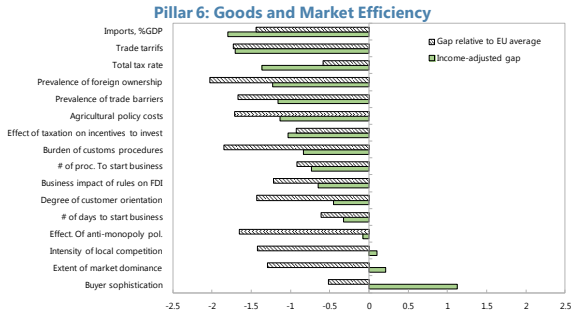
Significant lags even with income peers on all aspects of institutions



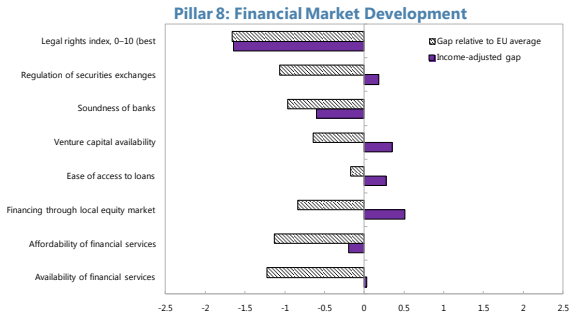
Road and electricity infrastructure could be improved



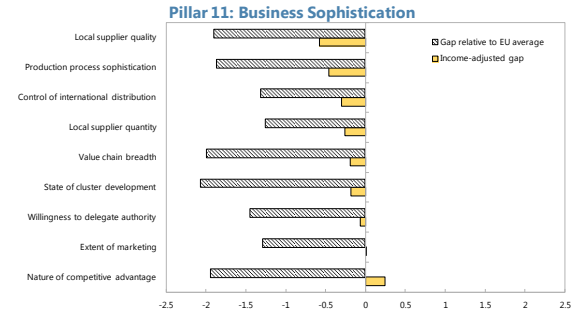
All aspects of goods market efficiency are poor



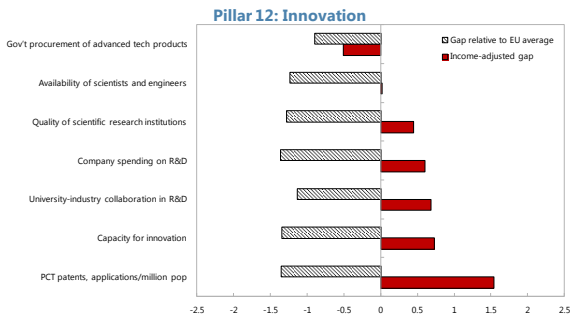
Legal aspect of financial market development is poor



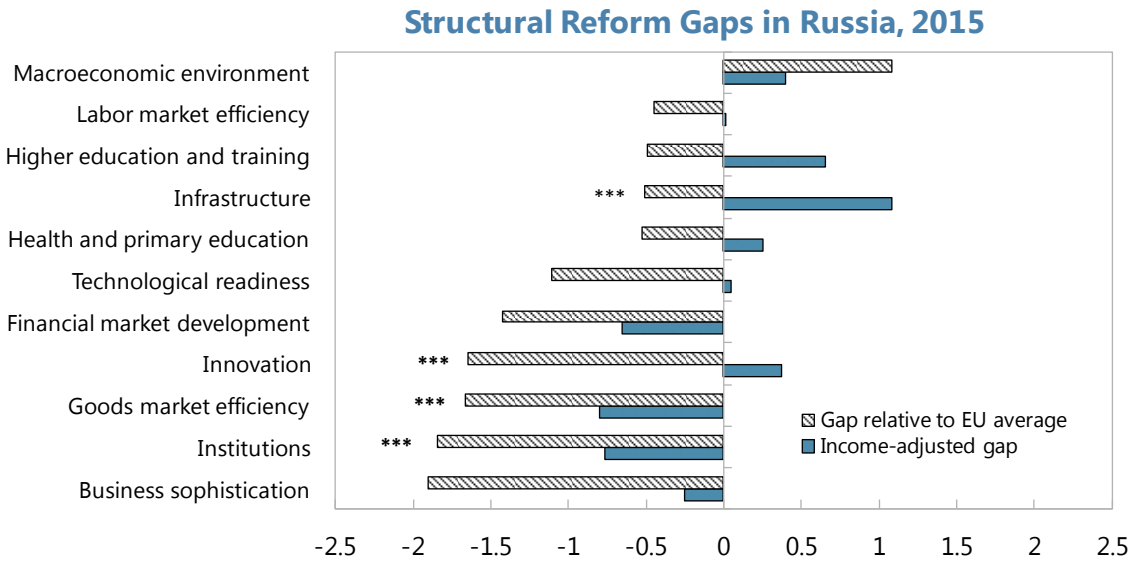
Business market sophistication lags even income peers



Innovation policies outperform peers, but lag the EU



25. Russia's reform gaps are particularly large in areas most critical for long-term growth. The priority areas that need further improvements are institutions, infrastructure, goods market efficiency, business sophistication and innovation. Priorities accord with findings in other cross-country literature. Dabla-Norris et al (2014) finds—for countries at Russia's income level—the strengthening of contracting institutions, property rights and the ability to enforce contracts, would have a significant positive impact on productivity growth.



*** denote reform priorities identified by combining gaps with their estimated growth impact.

Firm level Priorities

26. Obstacles to firms broadly reflect reform priorities identified at the aggregate level. In 2012 firms identify *tax rates* (36 percent of firms), *access to finance* (15 percent), an *inadequately educated work force* (12 percent) and *corruption* (8 percent) as the biggest obstacles in their business environment. Firms perceive the business environment has improved since 2009 across all categories, except for tax rates.[16] There are differences in how types of firms perceive obstacles, whereby manufacturing firms identify *tax rates, access to land* and *electricity* as bigger obstacles than firms in the service sector who identify *access to finance* and *business licensing and permits* as the bigger obstacles (Figure 11).

[16] Compared to 22 percent in China and Lao PDR, the only other comparators (cross country Enterprise Survey data is sparse).

Figure 11. Ranking of Obstacles in the Business Environment

Sources: Enterprise Survey.

27. Firm level productivity is correlated with business obstacles. Figure 12 charts productivity, highlighting differences between firms below the median on a particular business obstacle (fewer firms perceive it as a constraint) and above the median, controlling for firm size. Productivity is higher in firms that assess an inadequately educated work force as less of a constraint than the median. A similar pattern is observed across *access to finance*; *corruption*; *labor regulation* and *infrastructure* (including electricity) indicators. These patterns are less pronounced across larger firms, possibly because they are better connected and can circumvent obstacles in the business environment.

28. Easing impediments in the business environment increases firm-level productivity. To test correlations between productivity (log of ratio of firm's turnover to the number of employees) and structural obstacles, we estimate a fixed effects model controlling for the size of the firm (measured as the log of total assets) with time and industry dummies and clustered on firm (Annex 1). Though fixed effects absorb a significant amount of heterogeneity a causal interpretation of the structural indicator is still difficult. In an attempt to overcome this, we use a difference-in-difference strategy (Rajan and Zingales (1998)). The identifying assumption is that if structural constraints impede firm productivity, their impact is stronger in the tradable sector. Results suggest *access to finance*; *corruption*; *labor regulation* and *infrastructure* are constraints to productivity (Table 1, Annex 1).

29. Obstacles to business are particularly binding for micro and small firms and firms in the tradable sector. Structural constraints are more binding in the tradable sector, as evidenced by a negative coefficient on the interaction of the structural constraint with a dummy that takes the value 1 for the tradable sector (Table 2, Annex 1). Here, each unit of deteriorating environment impacts productivity more negatively in the tradable than in the non-tradable sector. Similarly, smaller firms are more disadvantaged by impediments in the business environment. The interaction

term is again negative, illustrating a stronger effect of reforms on activities of small and medium enterprises (Table 3, Annex 1).

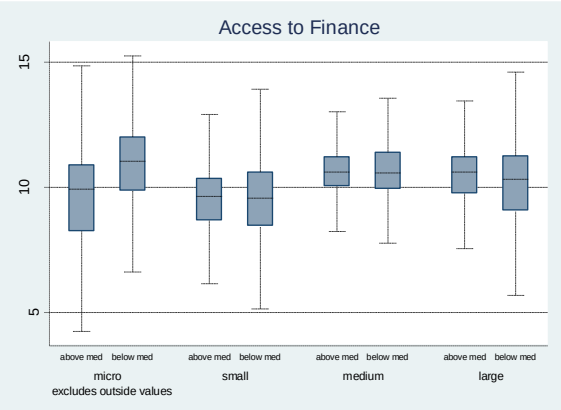
G. Conclusion

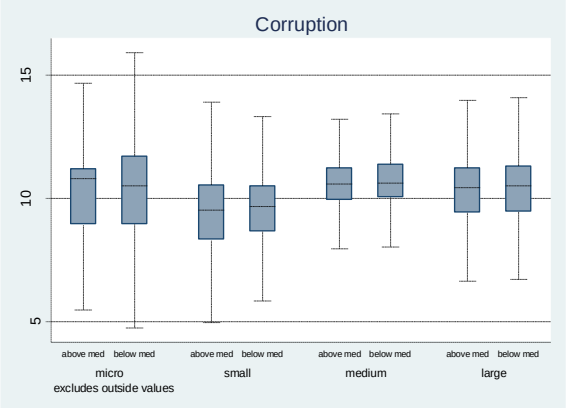
30. Russia should focus on reforms. The recent depreciation in the exchange rate is an opportunity for Russia to increase and diversify its exports. Easing structural constraints would encourage a more rapid reallocation of factors of production from the non-tradable to the tradable sector. Capital accumulation, a more efficient allocation of the labor force and higher productivity (within-sector and structural transformation) are needed for a more flexible economy to respond to a new lower exchange rate equilibrium and continue income convergence.

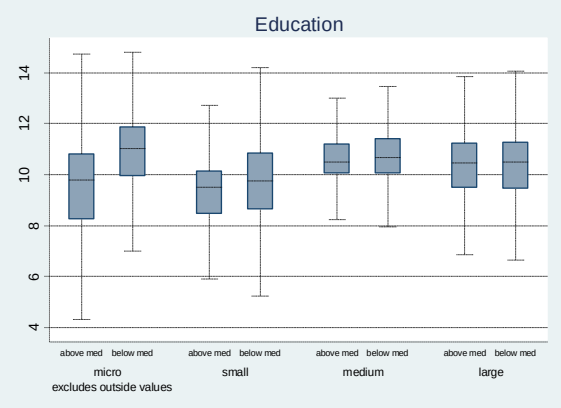
31. Reform efforts should encourage factor accumulation. There is an excess of savings over investment in Russia as evidence by current account surpluses. Channeling part of these savings (while maintaining intergenerational equity) into investment in physical and ICT capital would help. Labor market policies should focus on reducing skills mismatches and increase labor mobility. Improvements are needed in the quality of education, and efforts should include continuing to train the labor force once on the job market. In addition to strengthening active labor market policies, postponing retirement through pension reform would limit the prospective decline in the labor force while renewed privatization efforts could release labor from inefficient SOEs to more efficient private sector companies.

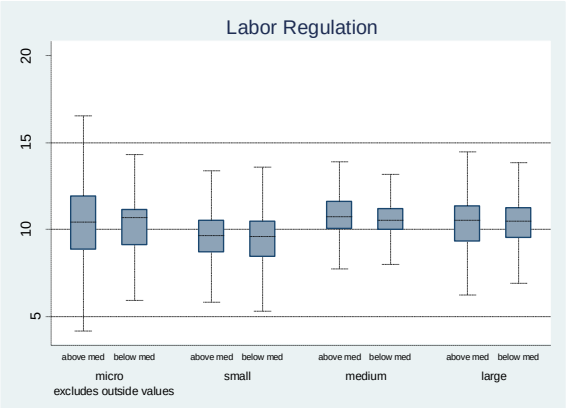
32. Reforms should be aimed at areas most critical for long-term growth. Cross country econometric estimations find priority areas that need improvement are institutions, but in particular property rights protection, corruption i.e. irregular payments and bribes, diversion of public funds, reliability of police. Improving infrastructure is important, especially the quality of roads and electricity supply. All aspects of good market efficiency could be improved, especially rules on FDI, prevalence of foreign ownership, and reducing trade barriers. Firm-level estimations support cross-country findings, where results suggest access to finance; corruption; labor regulation and infrastructure constrain firm level productivity.

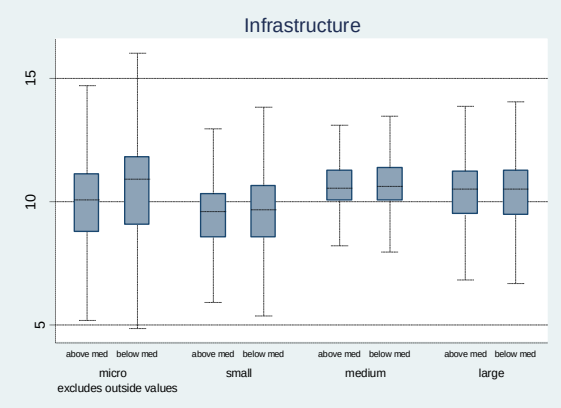
Figure 12. Firm Productivity: Obstacles

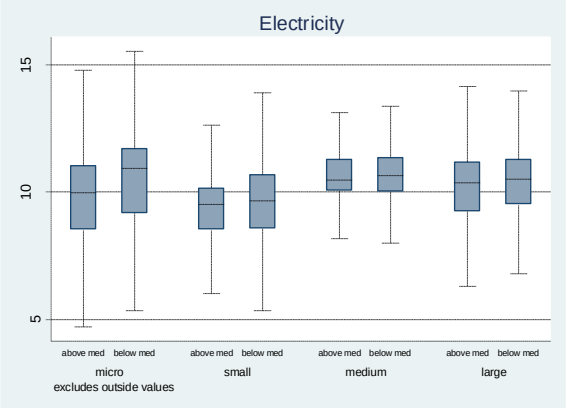












Annex I. Obstacles to Firm Growth in Russia

We use firm-level data to investigate factors that deter firm productivity in Russia. We answer the following questions: 1) What stylized facts describe firms by relative size and productivity and differences across sectors? 2) What explains low productivity looking to sector survey indicators of structural characteristics?

Productivity is measured as the log of ratio of firm's turnover to the number of employees. Data is from ORBIS for the period 2009-2012 covering around 700,000 observations. The coverage in ORBIS for Russia is high, comprising 49.7 percent of employment (the share of total employment hired by firms in the sample to the aggregate level of non-financial sector employment). The sample excludes firms with less than 1 employee and also drops firms in the 1st and 99th percentiles.

Structural indicators from Business Environment and Enterprise Performance Survey data (BEEPS) measure what firms perceive are the biggest obstacles. These capture five aspects of the business environment that firms face: (a) infrastructure quality, (b) financial development, (c) governance, (d) labor market flexibility, and (e) labor quality. Survey data covers manufacturing and services sectors. Within manufacturing the following subsectors are included: chemicals, rubber, plastics, non-metallic products; food, beverages, tobacco; machinery, equipment, furniture, recycling; metals & metal products; textiles, wearing apparel, leather; wholesale & retail trade; and wood, cork, paper products). Services are further disaggregated into transport, post and telecommunications, other services and construction. To test the correlations between productivity and the structural obstacles that firms face we estimate a fixed effect model with time and industry dummies clustered on firms to control for non-independence between firms. Clustering on firms allows to control for the similarity of firms. The model takes the form:

$$\mathbf{prod_{ist}} = \boldsymbol{\beta_1 S_{st}} + \boldsymbol{\beta'_A Z_{ist}} + \boldsymbol{\omega_{st}} + \boldsymbol{\eta_t} + \boldsymbol{\varepsilon_{ist}}$$

Where productivity of firm i, in sector s, at time t is $prod_{ist}$ S_{st} are structural characteristics across sectors; Z_{ist} are firm specific controls (indicator of firm size and the log of total assets) and ω are sector fixed effects and η are time fixed effects.

$$\mathbf{prod_{ist}} = \boldsymbol{\beta_2 S_{st}} * \mathbf{TRAD} + \boldsymbol{\beta_1 S_{st}} + \boldsymbol{\beta'_A Z_{ist}} + \boldsymbol{\omega_{st}} + \boldsymbol{\eta_t} + \boldsymbol{\varepsilon_{ist}}$$

These fixed effects absorb a significant amount of heterogeneity, but a causal interpretation of the structural indicator is still difficult. In an attempt to overcome this, we use a difference-in-difference strategy (Rajan and Zingales (1998)). The identifying assumption is that if structural constraints impede firm productivity, their impact must be stronger in the tradable sector. Indeed, the percentage of firms in manufacturing (the tradable sector) report structural constraints as being a bigger constraint than those in the services sector. Firms that are exporting and competing in the global market are likely to be more sensitive to domestic constraints that would impede their

external competitiveness. We assume the tradable sector includes firms in: chemicals, rubber, plastics, non-metallic products; food, beverages, tobacco; machinery, equipment, furniture, recycling; metals & metal products; textiles, wearing apparel, leather; wholesale & retail trade; and wood, cork, paper products. The coefficient of interest is β_2 which captures the extent to which structural constraints affect productivity more in the tradable sector.

Table 1. Firm Level Productivity and Obstacles to Business

	(I)	(II)	(III)	(IV)	(V)
Number of employees	-0.761***	-0.757***	-0.766***	-0.774***	-0.759***
	(0.00308)	(0.00307)	(0.00310)	(0.00308)	(0.00308)
Log total assets	0.525***	0.522***	0.528***	0.530***	0.524***
	(0.00108)	(0.00109)	(0.00108)	(0.00108)	(0.00109)
Access to finance	-0.0330***				
	(0.000305)				
Corruption		-0.0256***			
		(0.000216)			
Electricity			-0.0651***		
			(0.000801)		
Labor regulation				-0.0632***	
				(0.00128)	
Tax administration					-0.0246***
					(0.000225)
Industry Effects	Yes	Yes	Yes	Yes	Yes
Firm Effects	Yes	Yes	Yes	Yes	Yes
Observations	745,325	745,325	745,325	745,325	745,325
R-squared	0.417	0.419	0.414	0.412	0.417

Robust, clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2. Productivity and Obstacles to Business: Interaction with Firm Size

	(I)	(II)	(III)	(IV)	(V)
Number of employees	-0.761***	-0.769***	-0.757***	-0.774***	-0.756***
	(0.00307)	(0.00308)	(0.00307)	(0.00308)	(0.00307)
Log total assets	0.524***	0.528***	0.522***	0.530***	0.522***
	(0.00108)	(0.00108)	(0.00109)	(0.00108)	(0.00109)
Access to Finance	-0.0718***				
	(0.00153)				
Access to finance* Firm Size	-0.0330***				
	(0.00156)				
Tax adminstration		0.111***			
		(0.00239)			
Tax adminstration*Firm size		-0.0632***			
		(0.00314)			
Electricity			-0.0369***		
			(0.000786)		
Electricity*Firm size			-0.00289***		
			(0.000858)		
Labor regulation				-0.0610***	
				(0.00132)	
Labor regulation * Firm size				-0.0537***	
				(0.00542)	
Corruption					-0.0240***
					(0.000511)
Corruption* Firm Size					-0.00198***
					(0.000557)
Year Effects	Yes	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	Yes	Yes
Firm Effects	Yes	Yes	Yes	Yes	Yes
Observations	745,325	745,325	745,325	745,325	745,325
R-squared	0.417	0.414	0.419	0.412	0.419

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3. Productivity and Obstacles to Business: Interaction Trade Sector

	(I)	(II)	(III)	(IV)	(IV)
Number of employees	-0.756***	-0.755***	-0.755***	-0.755***	-0.774***
	(0.00307)	(0.00307)	(0.00307)	(0.00307)	(0.00308)
Log total assets	0.522***	0.522***	0.522***	0.522***	0.530***
	(0.00109)	(0.00109)	(0.00109)	(0.00109)	(0.00108)
Corruption	0.0114***				
	(0.00115)				
Corruption*Trade sector	-0.00754***				
	(0.000580)				
Access to finance		0.000591			
		(0.00227)			
Access to finance * Trade sector		-0.00446**			
		(0.00195)			
Electricity			0.228***		
			(0.0392)		
Electricity*Trade sector			0.0749		
			(0.0532)		
Tax administration				0.0136***	
				(0.00143)	
Tax administration*Trade sector				-0.0140***	
				(0.00123)	
Labor regulation					-0.0610***
					(0.00132)
Labor regulation *Trade sector					-0.0537***
					(0.00542)
Year Effects	Yes	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	Yes	Yes
Firm Effects	Yes	Yes	Yes	Yes	Yes
Observations	745,325	745,325	745,325	745,325	745,326
R-squared	0.420	0.420	0.420	0.420	0.421

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

References

Anand, R., Perrelli, R., & Zhang, B. (2016). South Africa's Exports Performance: Any Role for Structural Factors?

Andrews, D., & Cingano, F. (2014). Public policy and resource allocation: evidence from firms in OECD countries. Economic Policy, 29(78), 253-296.

Bouis, R, O. Causa, L. Demmou, R. Duval and A. Zdzienka, "The Short-term Effects of Structural Reforms: An Empirical Analysis" OECD, 2012.

Cuilluc A. and Kyobe A. "Structural Reforms and External Rebalancing", IMF Working Paper, 2016 forthcoming.

Dabla-Norris, E., Ho, G., Kochhar, K., Kyobe, A., & Tchaidze, R. (2014). Anchoring Growth: The Importance of Productivity-Enhancing Reforms in Emerging Market and Developing Economies. Journal of International Commerce, Economics and Policy, 5(02), 1450001.

Duarte, M and D. Restuccia, 2010, "The Role of the Structural Transformation in Aggregate Productivity," The Quarterly Journal of Economics, February 2010.

Gollin, D. Lagakos, D, M. Waugh "The Agricultural Productivity Gap in Developing Countries" CGEB Working Paper Series, March, 2012

IMF, 2006, "Asia Rising: Patterns of Economic Development and Growth," WEO Chapter 3.

Leigh, Daniel, Weicheng Lian, Marcos Poplawski-Ribeiro, Rachel Szymanski, Viktor Tsyrennikov, and Hong Yang, 2016. "Exchange Rate and Trade: Disconnect?" Forthcoming IMF Working Paper (Washington: International Monetary Fund)

McMillan, M. and D. Rodrik, 2011, "Globalization, Structural Change and Productivity Growth," NBER Working Papers 17143.

Rajan, R. G., & Zingales, L. (1998). Which capitalism? Lessons from the east Asian crisis. Journal of Applied Corporate Finance, 11(3), 40-48

August 2012 IMF Country Report No. 12/218 Russian Federation: Selected Issues

April 2015 World Bank Russia Economic Report 33: The Dawn of a New Economic Era?
Murgasova, Z., Ilahi, N., Miniane, J., Scott, A., & Hollar, I. V. (2015). The Western Balkans: 15 Years of Economic Transition.