

# Global slowdown and the Russian economy

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*The article reviews long-run sources of Russian economic growth and demonstrates that the stagnation of the Russian economy in the past decade can be considered in the context of the global productivity slowdown. Conventional industry growth accounting shows that in contrast to the transformational recession before 1998, the recent stagnation of 2008-2014 is primarily the outcome of a slowdown in total factor productivity (TFP) growth and a deterioration in the allocation of labour, rather than bottlenecks in capital inputs.*

## DECLINE IN TFP THE MAIN REASON FOR RECENT STAGNATION IN RUSSIA

Labour productivity of the global economy accelerated from the early 1990s until the eve of the global financial crisis of 2008, being fuelled by the fast growth of emerging economies and partially offset by OECD countries. In the post-crisis period, however, productivity trends changed. Labour productivity in emerging economies continued growing at a moderate pace of around 2-3%, while in OECD countries it dropped below 1% per year. All in all, starting from the mid-2000s, the global economy exhibited a slowdown, which is called ‘global stagnation’ in the literature and attributed to the slowdown in efficiency improvements related to the management and organisation of production processes, R&D and innovations (McGowan et al., 2015).

**Table 1 / Growth rates decomposition of the Russian economy and global TFP growth in 1995-2014**

	1995-2000	2000-2005	2005-2010	2010-2014
1. Real GDP, % per year (2+3)	1.95	5.98	3.52	2.33
2. Hours worked, pp	-0.43	0.84	0.18	0.04
3. Labour productivity growth, pp (4+5)	2.39	5.14	3.34	2.29
4. Labour reallocation, pp	1.49	0.63	0.68	0.38
5. Intra-industry labour productivity, pp (6+7+8)	0.90	4.51	2.66	1.91
<b>6. TFP, pp</b>	<b>1.34</b>	<b>3.00</b>	<b>-0.08</b>	<b>-0.47</b>
7. Labour composition per hour worked, pp	0.23	0.04	0.14	0.32
8. Capital intensity, pp (9+10)	-0.67	1.47	2.60	2.06
9. ICT capital, pp	0.16	0.17	0.15	0.05
10. Non-ICT capital, pp	-0.83	1.30	2.45	2.01
<b>11. TFP, global economy, % per year</b>	<b>0.10</b>	<b>1.02</b>	<b>0.30</b>	<b>0.34</b>

Source: Russia KLEMS 2017 (1-10), the Conference Board Total Economy Database™, March 2018 (11).

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Table 1 shows the trends in global productivity (row 11) and the growth accounting decomposition of the Russian economy. Both in the world and in Russia (row 6) the slowdown in total factor productivity started in 2005-2010. Table 1 also shows that the structure of Russian economic growth changed remarkably over time. Over the entire period 1995-2014, it was labour productivity (row 3) which provided the lion's share of GDP growth in Russia, with the impact of hours worked (row 2) being relatively small. In 1995-2000 labour reallocation, which is defined as labour flows between industries with different productivities, accounted on average for 1.5 percentage points (pp) of the 2.4% growth of labour productivity, or more than half, while in 2010-2014 it accounted for only 0.4 pp of the 2.3% labour productivity growth. Interestingly, the contribution of capital intensity (the flow of capital services per hour worked) to Russian economic growth was negative in the late 1990s; thus, the shortage of capital was a real obstacle to growth. Starting from 2000, the contribution of capital to growth was significant and even during stagnation (2010-2014) did not fall substantially.

One of the remarkable features of the global economy development was the decreasing contribution of information and communication technology (ICT) capital starting from mid-2000. Exactly the same can be seen also in the Russian economy. Table 1 shows that the maximum contribution of ICT capital intensity was recorded in 2000-2005, and has been falling thereafter. Finally, the impact on growth of labour reallocation in favour of more productive groups can be seen in row 7. It was positive in all periods in question, but limited with 0.1-0.3 pp. So, there is no clear evidence of a direct substantial impact of human capital on economic growth in Russia; in the European economies this impact has not been very high either (see Timmer et al., 2010).

All in all, taking into account the contributions of all proximate sources of economic growth, the decline in total factor productivity turns out to be the most obvious reason for the recent stagnation in Russia. In what follows I delve into the level of industries, consider structural change and sources of growth in detail, discussing industry-level sources of TFP and capital intensity in detail.

## PRODUCTIVITY GROWTH AND STRUCTURAL CHANGE

The role of labour reallocation in aggregate productivity growth was substantial in the late 1990s and early 2000s, which can be seen in Table 1 and is discussed in detail by Voskoboynikov (2019). What was the direction of structural change?

The economic structure of command economies was unbalanced, in favour of manufacturing and agriculture. That is why an expanding market services sector in parallel with a shrinking manufacturing sector was among the few basic stylised facts common to all economies in transition. Table 2 shows that Russia was not an exception. It indicates changes in shares of value added in major sectors of the Russian economy over time. As can be seen, the combined share of agriculture and manufacturing shrank from 30% in 1995 to 19% in 2014, which may reflect comparative disadvantages of Russian manufacturing vis-à-vis its main trading partners. At the same time, the share of finance and business services, including retail, construction, telecom as well as hotels and restaurants (RCT), expanded from 24% to 31%. In contrast to many other post-transition economies, Russia is a resource-exporting country. The rise in global oil prices after 1999 led to a remarkable extension of the country's mining and mining-related industries, combined in Table 2 to 'extended oil and gas sector', from 20% in 1995 to

almost a quarter in 2014. The increasing role of the extended mining and services sectors predetermines the leading contribution of these sectors to aggregate growth.

**Table 2 / Aggregate GDP growth and structural change in Russia in 1995-2014**

	Share of value added (%)		Average growth rate (% p.a.)	Average contribution to GDP growth (pp p.a.)
	1995	2014	1995-2014	1995-2014
Total	100.0	100.0	3.47	3.47
Market economy	86.1	80.9	3.60	3.00
Agriculture	7.6	4.2	1.39	0.08
Extended oil and gas sector	20.1	24.2	3.59	0.80
Manufacturing	22.4	14.9	2.15	0.40
RCT	19.2	18.6	4.07	0.77
Finance & business services	5.1	12.0	8.41	0.72
Transport	11.7	6.9	2.55	0.24
Nonmarket services	13.9	19.1	2.79	0.46

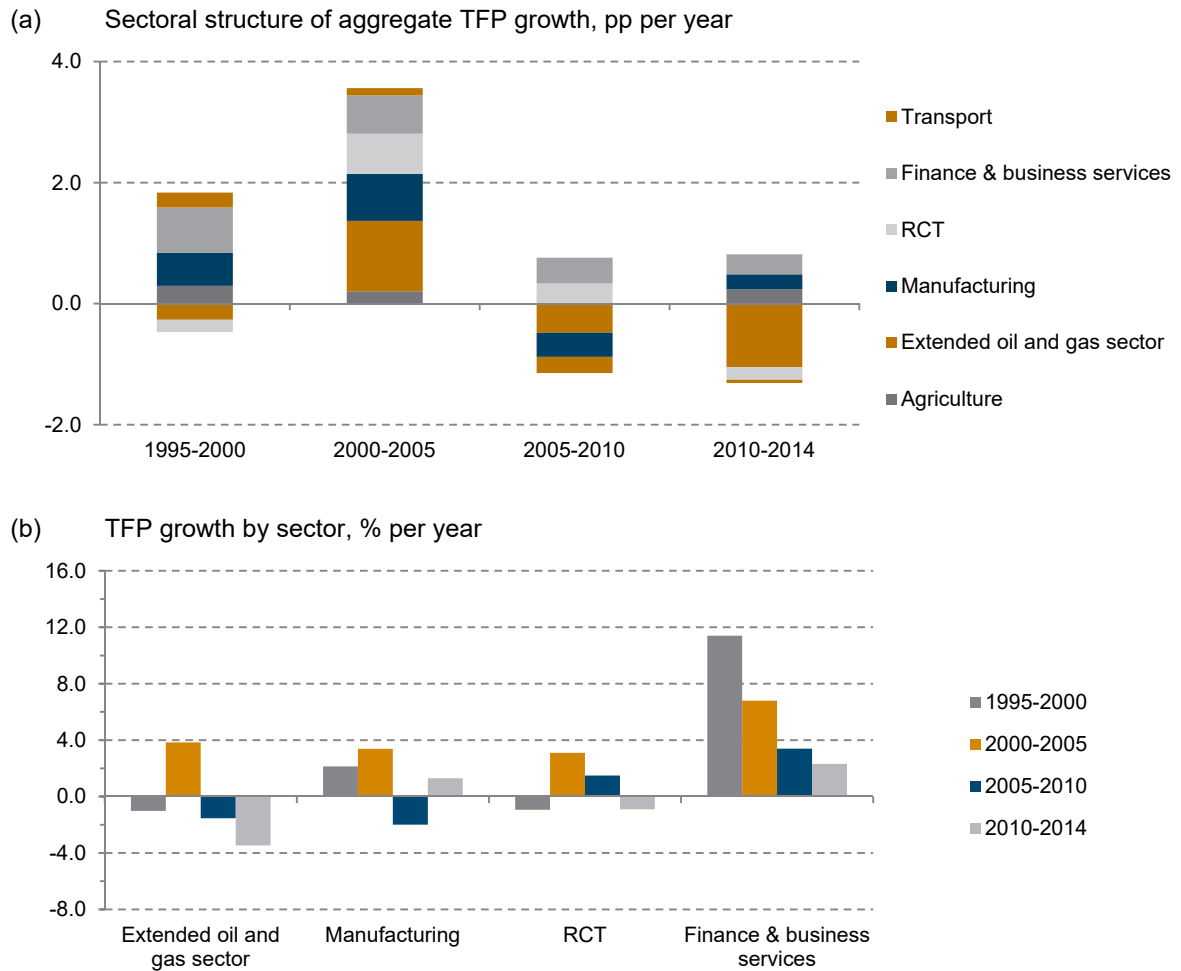
Source: Russia KLEMS 2017.

Table 2 provides also the summary statistics for sectoral growth rates and their contributions to Russia's overall GDP growth. Finance and business services demonstrated the best performance, with an average yearly growth rate of 8.4% in 1995-2014. However, their contribution to GDP growth was more modest and equalled only 0.7 pp, behind the oil and gas and the RCT sector, because the average share of the finance industry in Russian value added was on average only 8.6% ( $0.7 = 8.41 \times \frac{1}{2} \times (5.1\% + 12.0\%)$ ). These three sectors contributed the most to economic growth, while the role of traditional industries of material production was relatively modest. Agriculture and manufacturing contributed on average only 0.5 pp to the 3.5% aggregate growth, or about one sixth.

## TFP GROWTH ACROSS INDUSTRIES

Slicing up the impact of structural change, I turn to the intra-sectoral sources of growth. I start from the sectoral composition of TFP growth, developing the story of the TFP slowdown, and in the next section consider the role of capital intensity.

Figure 1 represents the sectoral composition of the aggregate TFP slowdown in the 'market economy' sectors (see Table 2) (a) and TFP growth of different sectors (b) in Russia in 1995-2014. It indicates which sectors contributed most to aggregate TFP growth. The most important drivers of TFP growth before stagnation were finance and manufacturing. Financial services were catching up, starting from a very low base in 1995 in terms of technologies, while manufacturing enjoyed optimisation, modern technologies inflow and global integration. As can be seen from Figure 1b, both these sectors declined after 2005. In turn, oil and gas demonstrates low efficiency growth, except in 2000-2005 – the period of growing oil prices.

**Figure 1 / TFP growth in the Russian economy 1995 - 2014**

Source: Own calculations on the basis of Russia KLEMS 2019 (preliminary).

Figure 1 highlights two important facts. First, the aggregate TFP slowdown in Russia happened because of the TFP decline in the two main drivers of productivity: finance and business services, and manufacturing. For both, integration into the global economy is important. In the case of manufacturing, integration helps adopt advanced technologies, while finance needs unlimited access to assets in other countries. Second, the extended oil and gas sector contributed to aggregate TFP growth starting from 2005.

## THE ROLE OF CAPITAL INTENSITY

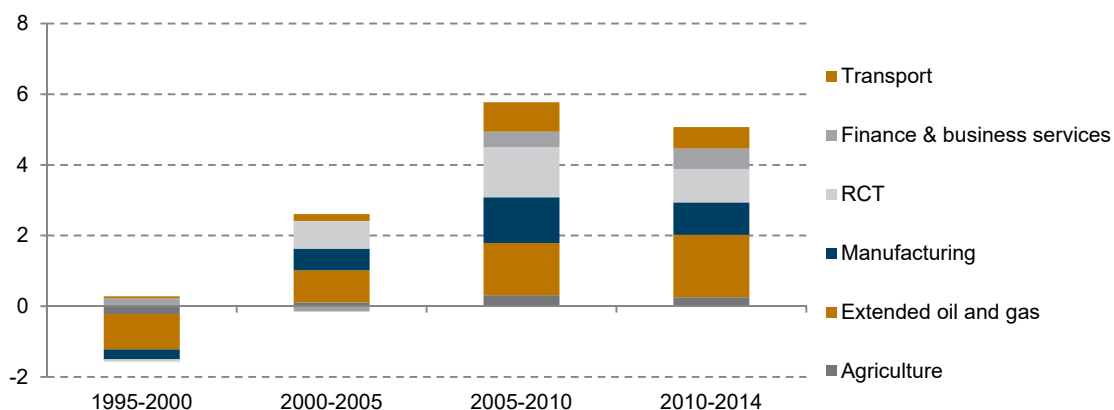
More attention should be also paid to the role of capital intensity for economic growth in Russia. The inflow of oil and gas could be partially transformed into investments in the extended oil and gas sector. This is confirmed by the data reported in Figure 2. As can be seen, the extended oil and gas sector accounted for the second largest yearly average contribution to overall capital intensity growth among the sectors of the 'market economy' in 2000-2010.

At the same time, market services (finance and business services and RCT combined) enjoyed the highest capital inflow. This is also not surprising: large investments were made in retail trade, which was underdeveloped in the early transition period. According to McKinsey (1999, p. 5; 2009, p. 65), by 1999 only 1% of retail trade in Russia was accounted for by modern supermarkets, while after 10 years this share had increased to 35%. In addition, huge investments were made in telecommunications, both because of its technological backwardness inherited from the planned economy and the ICT boom in the late 1990s and early 2000s.

Finally, the slowdown in aggregate capital intensity in Russia in 2010-2014 was modest, and mostly because of RCT and manufacturing.

**Figure 2 / Sectoral structure of aggregate capital intensity growth**

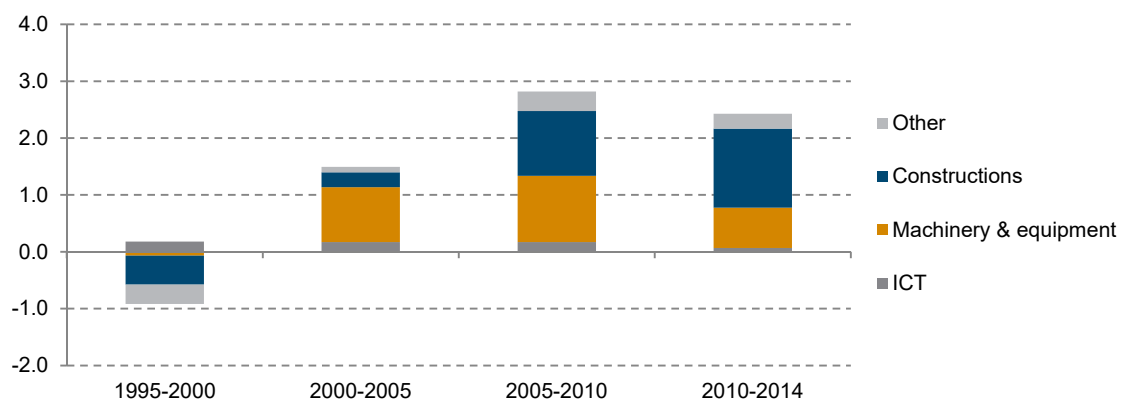
'Market economy' sectors, pp per year



Source: Own calculations on the basis of Russia KLEMS 2019 (preliminary).

**Figure 3 / Contributions of different types of assets to aggregate capital intensity growth**

'Market economy' sectors, pp per year



Source: Own calculations on the basis of Russia KLEMS 2019 (preliminary).

Figure 3 illustrates the role of different types of assets in capital intensity growth in Russia. In the years of soaring growth, 2000-2005, it was machinery and equipment which provided the biggest contribution

to capital intensity growth, while in the following years of slowdown and stagnation it was replaced by construction. Interestingly, the figure shows that the impact of ICT on capital intensity was at the highest level in the years of the ICT boom, 1995-2000, and diminished in the following years.

## CONCLUSION

From the supply side perspective, the recent stagnation of 2009-2014 of the Russian economy is primarily the outcome of TFP slowdown and a deterioration of labour allocation rather than bottlenecks in capital inputs. In fact, capital intensity continued growing, which makes the Russian pattern to some degree similar to the resource-abundant countries Australia and Canada (Voskoboynikov, 2017). However, the contribution of ICT capital to labour productivity growth in Russia after 2008 declined, which could impede technology diffusion.

Summarising, this article has suggested considering the post-crisis stagnation of the Russian economy in a comparative perspective. This can shed new light on the causes of the stagnation, because at least some of these are of a global nature. At present, the key to sustainable productivity growth would be efficient reallocation of resources and the creation of an institutional environment which stimulates technology diffusion among firms, as summarised by McGowan et al. (2015).

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