

Simola, Heli; Solanko, Laura

**Research Report**

## Domestic and global economic effects of COVID-19 containment measures: How does Russia compare internationally?

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# BOFIT Policy Brief

## 2020 No. 6

Heli Simola and Laura Solanko

Domestic and global economic effects of  
COVID-19 containment measures: How does  
Russia compare internationally?



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Bank of Finland  
BOFIT – Institute for Economies in Transition

PO Box 160  
FIN-00101 Helsinki

Phone: +358 9 183 2268

Email: [bofit@bof.fi](mailto:bofit@bof.fi)  
Website: [www.bofit.fi/en](http://www.bofit.fi/en)

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Heli Simola and Laura Solanko

## Domestic and global economic effects of COVID-19 containment measures: How does Russia compare internationally?

### Abstract

This note considers the potential impacts on Russia from drastic economy-wide measures used in various countries to “flatten the epidemiological curve” of the COVID-19 virus. We extend the analysis framework recently introduced by the OECD to distinguish international spillover effects that come via decrease in export demand and effects from potential domestic containment measures that affect domestic demand.<sup>1</sup>

Keywords: Russia, COVID-19, economic effects, WIOD.

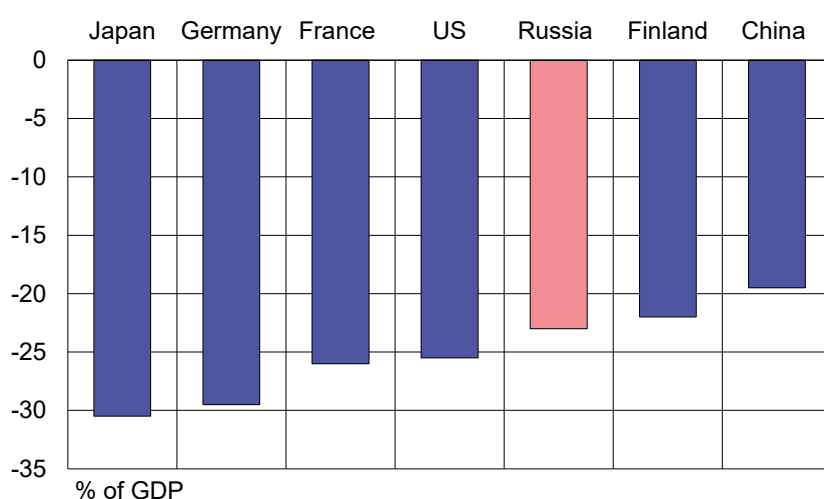
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<sup>1</sup> Version revised on April 8, 2020.

## 1. A simple framework for analyzing domestic economic effects of COVID-19 containment measures

The OECD recently published a note illustrating the effects of COVID-19 containment measures on economic activity in various countries.<sup>2</sup> It considers the effects of shutdowns in certain sectors of the economy on total national GDP and suggests that the initial direct impact of shutdowns in most countries could be an output decline of 20–25 %. This would equal a decline in annual GDP growth of up to 2 percentage points for each month that such measures are in place without policy support. The results vary across countries, with Russia positioned close to the middle (Figure 1).

Figure 1. The potential initial impact on GDP of partial or complete shutdowns of certain sectors on activity in selected economies



Source: OECD (2020).

## 2. International spillover effects of COVID-19 containment measures

While the OECD calculations only take into account the domestic effects of containment measures, COVID-19 is a pandemic affecting all countries. Additional effects come in the form of declining export demand created by containment measures elsewhere. We evaluate the importance of these international spillover effects by applying similar assumptions as the OECD (Table 1) on sector shutdowns to the World Input-Output Data (WIOD).<sup>3</sup>

<sup>2</sup> OECD (2020).

<sup>3</sup> Timmer et al. (2015) provides a useful description of the WIOD.

Table 1. Assumptions on sectoral output declines due to containment measures

Sector	Output decline, %
Manufacturing of transport equipment	-100
Construction	-50
Wholesale and retail trade	-75
Air transport	-75
Accommodation and food services	-75
Real estate services ex. imputed rent	-75
Professional service activities	-50
Other personal services	-100

Source: OECD (2020).

Note: Calculations required slight modification to be applicable to the WIOD.

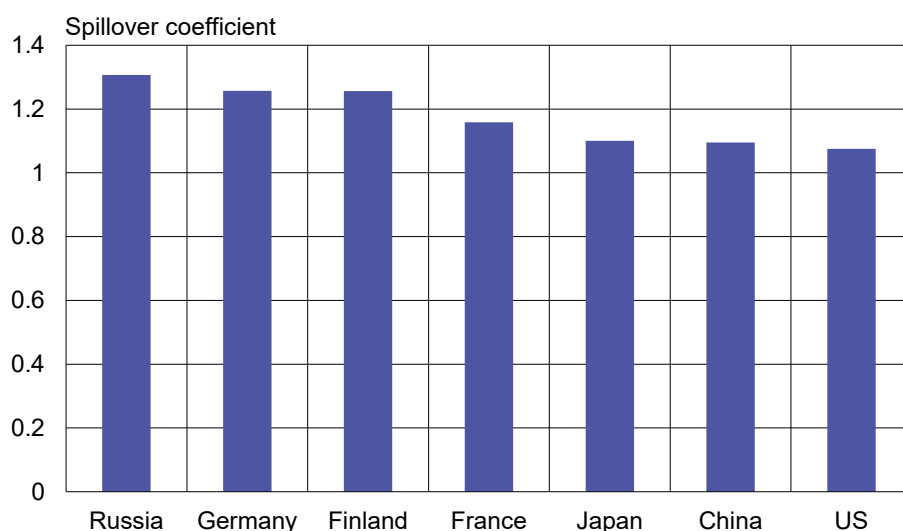
The WIOD depicts sectoral linkages between countries in the global production network and thus takes into account the transmission channels of shocks through international trade. We calculate the effects of the containment measures on the GDP of individual countries by first imposing the measures separately on each individual country to evaluate the domestic effect. We then make a second calculation in which we impose corresponding shutdown measures simultaneously on all countries of the world to calculate the global effect.<sup>4</sup> Finally, we compare domestic and global effects to get the international spillover coefficient.

Our results suggest that international spillovers might significantly amplify the negative economic effects of containment measures. Taking into account international spillovers results in most countries in a 1.1–1.3 times higher total impact compared to purely domestic effects. In other words, if domestic containment measures lead to an initial decline of 20 % of GDP, the total initial effect including international spillovers would be 22–26 %. The magnitude and the relatively low variation of the spillover effect largely reflects the assumption that sectoral shutdowns concern mainly service sectors. Generally speaking, service industries import less inputs from abroad than manufacturing industries.

The largest effects from international spillovers concern countries that are relatively more dependent on export demand (Figure 2). The effect also varies depending on the export structure of a country. For example, the spillover coefficient for Germany is quite high. Germany exports a large share of its overall production, and manufacturing of transport equipment (for which a complete shutdown is assumed by the OECD) is an important sector for the German economy.

<sup>4</sup> This is a simplifying assumption only for illustrative purposes. In practice, containment measures vary from country to country both in terms of coverage and timing. Therefore, the initial spillover effect would probably be smaller and the effect would extend for a longer time. The calculations are based on the standard input-output methodology as presented in e.g. Miller & Blair (2009).

Figure 2. Additional effects of containment measures from international spillovers on selected economies



Source: Authors' calculations based on WIOD.

Russia has some of the highest spillover coefficients.<sup>5</sup> This mainly reflects the additional negative effect on the mining and quarrying industries resulting from reduced export demand. In recent years, exports have generated about 30 % of Russian GDP. Oil, oil products and natural gas represent about half of Russia's exports of goods and services. These are important inputs for many of the service sectors that are assumed to experience shutdowns in other countries, and thus causing negative spillovers to the Russian economy.

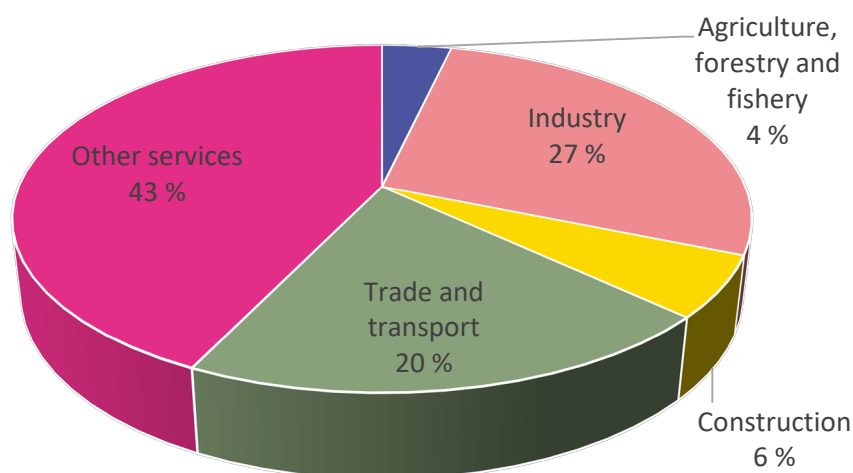
### 3. Effects of potential COVID-19 containment measures in Russia

Even if Russia's GDP often fluctuates in tandem with global oil price swings, the oil sector's direct contribution to GDP is less than ten percent.<sup>6</sup> As in almost all developed countries, about two-thirds of Russian GDP is generated by services (Figure 3). Trade and transportation account for a quarter of GDP and real estate activities together with finance and insurance account for about 15 %. Accommodation and food services only account for about one percent of GDP, but a considerable share of these activities may go unregistered.

<sup>5</sup> The results for Russia should be taken with caution due to the quality of the data for Russia in the WIOD.

<sup>6</sup> Russia's oil & gas industries use plenty of domestic services. Estimates of the full extent of the energy sector and associated services (oil, gas, coal and electricity) in Russia's GDP fluctuates between 20 % and 30 % of GDP.

Figure 3. Structure of Russian GDP in 2018

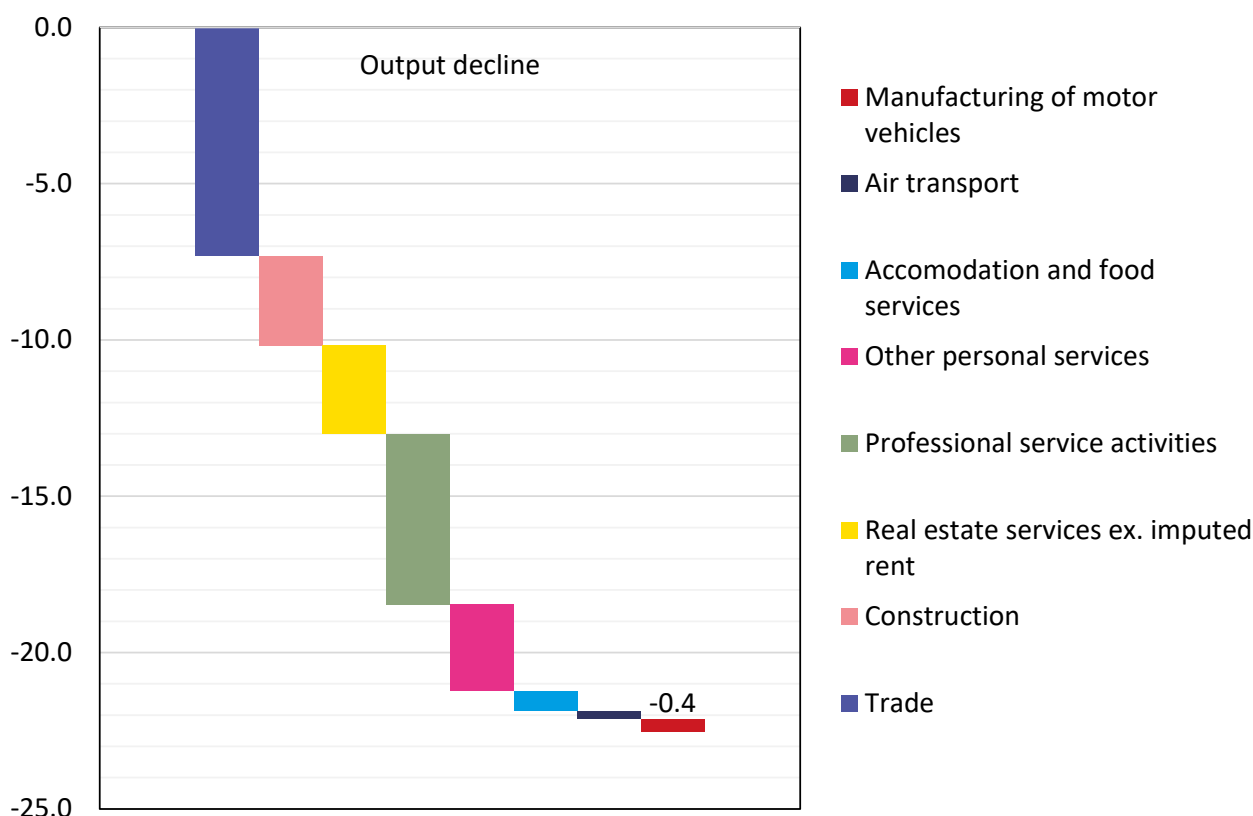


Source: Rosstat.

As measures to constrain COVID-19 transmission require restrictions on mobility and face-to-face interaction, service industries can be expected to take the hardest hit. If Russia adopts economy-wide measures applied in some OECD countries, the magnitude of output decline should be quite similar in Russia as in OECD economies (as shown in Figure 1).

We next take a closer look at Russia's GDP structure and replicate the calculations using Rosstat data and the assumptions outlined in Table 1 above. As seen in Figure 4, the overall decline in output would be close to 23 %, with wholesale and retail trade accounting for a third of the overall reduction. This illustrative calculation assumes similar restrictions are imposed everywhere in the country. In reality, regional variation in implementation of containment measures may decrease (or increase) the economy-wide effect.

Figure 4. Initial effect of potential shutdowns on economic activity in Russia, percent of GDP



Sources: Rosstat and BOFIT.

Note: Based on Rosstat's OKVED classification of economic activity and assumptions on output decline as in Table 1. Wholesale trade is weighted by a factor of 0.5 as a large share of wholesale trade in Russia is directly related to oil trade.

The impact on annual GDP growth depends on how long restrictions remain in place. A shock of this magnitude occurring during just one month would directly decrease annual GDP growth by approximately one to two percentage points. If shutdowns would last only for one month, and production would immediately return to normal thereafter (arguably a highly unrealistic assumption), some of the lost production could be caught up during the remaining months of the year.

If severe restrictions apply for an entire quarter, annual GDP growth in Russia could be 4.5% lower than it would have been otherwise. If all major economies take similar measures, international spillovers amplify the shock by a factor of 1.3. The overall direct effect of three months of severe containment measures would decrease Russia's annual GDP growth by almost six percentage points.

An initial shock of this magnitude would, however, make returning to baseline growth rates a truly challenging task. Not all businesses are likely to survive several months of shutdown, so any recovery may not be immediate. The full negative effect of the coronavirus containment measures may be significantly higher than the direct effect.

## 4. Conclusion

The one-month long holiday announced by President Putin on 2 April 2020 will likely create output declines of the magnitude described above, especially if the requirement on businesses to continue paying salaries for the “holiday period” is not lifted. These illustrative calculations do not, however, take into account any potential measures the government could take to ease the situation and help businesses survive the shutdown.

Russia’s current budget framework sees public expenditure rising 6-7 % annually in nominal terms. Beyond that, the Russian government has not so far announced any large-scale significant fiscal easing. The current support measures for the corporate sector mainly consist of such measures as postponing tax payments, easing access to credit, allowing breaks for credit payments and adjusting bankruptcy procedures.

Russia could afford some additional short-term support measures by dipping into oil earnings saved in the National Wealth Fund. Russia’s sovereign wealth fund held liquid assets of \$143 billion (10 % of GDP) at end-March. If oil prices remain at the current level, Russia still could sustain its planned level of budget expenditure for a few years without resorting to sovereign borrowing. But the fact that Russia has once again been hit by two shocks simultaneously (an oil price shock and the coronavirus shock) mean that use of such funds must be planned very carefully.

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