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The demographic consequences of the pandemic in Russia have a macroeconomic impact

An interpretation of operational economic statistics

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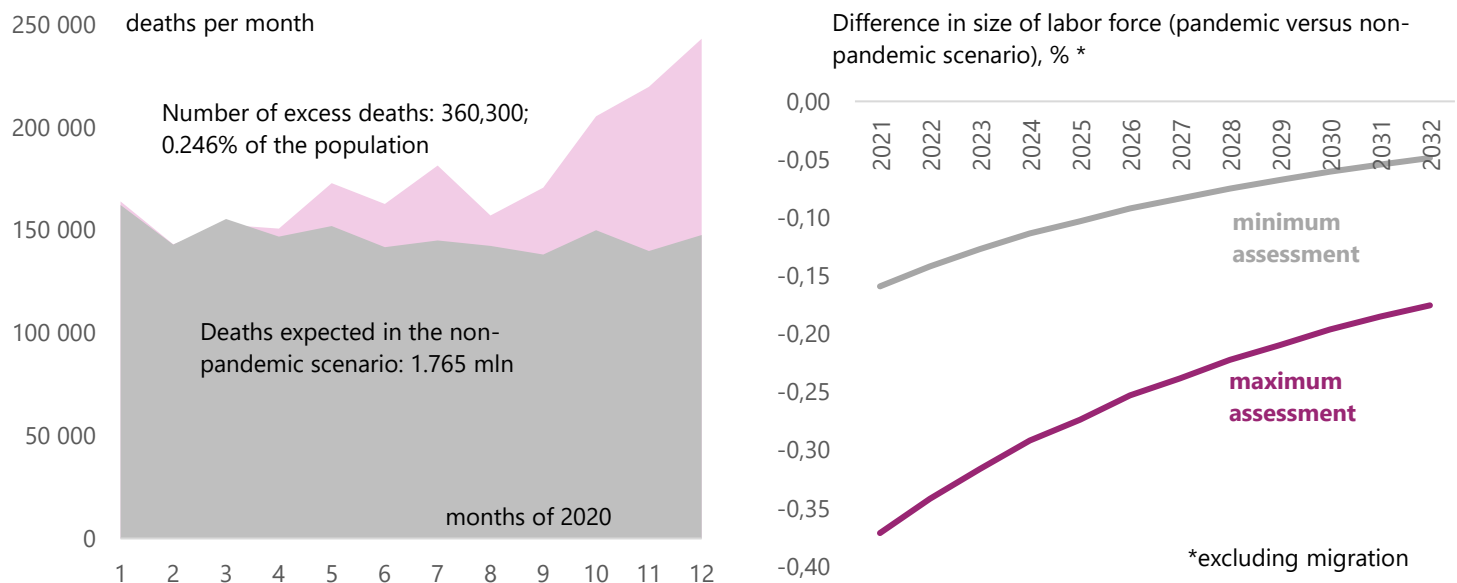
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On February 8, 2021, Rosstat published operational data on the natural movement of the population of Russia for January to December 2020. A total of 2.125 mln people died in 2020, which is 360,000 more than the number that would have died in the absence of the coronavirus pandemic¹ (0.25% of the population; *Fig. 1, left graph*). Excess mortality, part of the population's temporary inability to work and migration restrictions are important factors, which determine the future economic activity of the country.

According to ACRA's assessments, the demographic effects of the pandemic will shrink real GDP in 2021 by 0.2–0.9%². However, these are mostly short-term phenomena. In 2021, the demographic effects may not be very visible due to the presence of more powerful effects of a different nature. The demographic footprint of the pandemic will decline to 0.04–0.18% by 2030 (see the stages and assessment parameters in *Table 1*), but continue to have an effect even 15 years after the pandemic ends (*Fig. 1, right graph*).

Figure 1. Excess mortality in 2020–2021 and its long-term impact on the labor force



Sources: Rosstat, ACRA

The assessment of demographic effects in 2021 includes:

- Estimate of the number of working age people excluded from the labor force as a result of deaths directly or indirectly related to the pandemic by mid-2021;
- Estimate of the annual average number of people who are temporarily unable to work;

¹ The estimate of the number of deaths in the scenario without a pandemic was made using a mortality model that assumes linear dynamics of mortality rates in each one-year age and sex group of the population. The rate of change in the ratios in the groups was estimated based on data from 2015–2019. In most groups, the ratio tends to decline over time, so the expected number of deaths in 2020 is less than the number of deaths in 2019.

² We view the difference in real GDP levels and not the difference in its growth rates as the effect.

- Estimate of the number of working age migrants who either did not travel to Russia or left the country in 2020 and the first half of 2021.

In the short term, the demographic effects of the pandemic are rather significant, but at the same time are almost invisible against the backdrop of even more powerful processes, such as the introduction of anti-pandemic measures and their subsequent easing, the dynamics of the OPEC+ deal, and unemployment dynamics (the signs of influence are different).

In the long term, the assessment of demographic effects is based on predicting the deviation of the labor force in a given year from the hypothetical labor force in the non-pandemic scenario. Differences arise mainly due to the deaths of working age people in 2020–2021 (on the assumption that excess mortality from the pandemic will be close to zero in 2022 and beyond). In the absence of the pandemic, many of them would not have dropped out of the workforce until they reached retirement or an even older age. Consequently, the effect of the pandemic remains non-zero at least until the moment when the youngest among the dead would have dropped out of the workforce under normal conditions. Due to the current lack of complete data on the ages of people in the group of working age excess deaths, we have to use fragmentary data available for individual regions. Assuming that more than 85% of those who died were 45 years of age or older, the demographic effects of the pandemic should largely flatten out 20 years after it ends.

The temporary decline in fertility due to the pandemic was not factored into the calculation of long-term effects because there is likely to be a delayed surge when the pandemic ends.

Table 1. Estimation components of the pandemic's demographic effects on GDP for 2021 and 2030*

	Estimation component	Min	Max	Notes
General data	Excess deaths in April-December 2020, mln people	0.36	0.36	Fig.1
	Excess deaths in January-June 2021, mln people	0.10	0.17	Based on the assumed disability trend in 2021
	Excess deaths in July-December 2021, mln people	0.00	0.08	
	Share of excess deaths for employable	25%	45%	No statistics are available yet, ACRA's estimate is based on sample data
	Labor force in 2019, mln people	75.4		-
	Labor force expected in 2030, mln people (non-pandemic scenario)	77.7		ACRA's macroeconomic outlook of early 2020 (pension reform effects are taken into account)
	Employment elasticity to real GDP	0.7	1	A parameter of the production function model, confidence interval is based on the data for 1996–2019
2021	Annual average of temporary disabled in 2020 (after the start of the pandemic), mln people	0.27	0.40	ACRA's estimates based on active cases
	Annual average of temporary disabled in 2021, mln people	0.07	0.28	Assumed average number of cases in 2021
	Net outflow of labor immigrants aggregated for 2020–2021, mln people	0.00	0.15	No statistics are available yet, ACRA's estimate is based on fragmentary data
	<u>Share of labor force dropped out for short time in 2021</u>	0.10%	0.57%	-
	Excess deaths for employable in April 2020 – June 2021, mln people	0.12	0.24	-
	<u>Share of labor force dropped out for long time in 2021</u>	0.16%	0.32%	-
	Pandemic's effect on real GDP in 2021, pps	0.17	0.89	-
2030	Excess deaths for employable in 2020–2021, mln people	0.12	0.28	-
	Difference in labor force in 2030 (pandemic scenario vs non-pandemic scenario), mln people	0.05	0.14	Estimates are based on the demographic model with the assumed age of deaths caused by the pandemic, Fig. 1
	<i>Relative difference</i>	0.06%	0.18%	-
	Pandemic's long-term effect on real GDP (labor force only), pps	0.04	0.18	-

* For most indicators, the minimum and maximum estimates are shown, since many parameters are not observable, not published yet or forecasted with significant uncertainty.

Source: ACRA

For more details on long-term economic growth factors in Russia, see ACRA's macroeconomic outlook [Structural and temporary factors of economic growth in Russia](#) dated November 19, 2020.

In theory, longer-term macroeconomic consequences, directly or indirectly related to demographics, are also possible. In the long term, the purely demographic effects will be supplemented by the effects associated with a decrease in the quality of human capital during the pandemic, as healthcare resources were retargeted to fight the pandemic in 2020, some regular healthcare services were suspended, and online learning was likely less effective than traditional classroom education. This and other possible long-term side effects of the pandemic will collectively put pressure on labor productivity, but their impact on the economic activity and additional fiscal spending has yet to be estimated.

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