The coronavirus is having a very large short-term negative impact on world growth. But the medium-term growth outlook is more uncertain. Much depends on the policy response - a strong and well-designed response could contain the medium-term output losses, but large and enduring damage is a risk.

Growth patterns after significant GDP declines vary. Historical evidence points to large upfront effects from pandemics and natural disasters, but the medium-term outcomes are mixed, with policy responses a crucial determinant. Longer recessions and financial crises tend to lead to weaker medium-term growth.

The coronavirus may trigger annual GDP declines among the worst seen in the last 100 years. Economies can bounce back sharply after such declines, but our analysis suggests output losses also endure in a significant number of cases.

The US interwar experience shows the danger of allowing financial distress to snowball and exacerbate GDP declines. The weakness of medium-term growth after the global financial crisis confirms the long-term impact of such distress.

A key risk for the medium term is that firms and/or households react to the coronavirus recession and disruption by raising savings, accelerating a shift toward 'Japanification' of major economies.

Our baseline forecasts envisage moderate medium-term output losses due to coronavirus, in part reflecting rapid and large-scale policy interventions. But uncertainty around this forecast is significant and considerable variation is possible across economies.

Different kinds of negative shocks are followed by very varied GDP paths. Natural disasters and recent epidemics such as SARS have seen strong recoveries after initial declines with lost output regained after a few quarters. But financial crises and deep recessions can leave lasting scars.
The coronavirus pandemic will deliver a massive negative short-term hit to world GDP. But what about the medium-term effects? Can we expect a fast recovery or will the current crisis have enduring impacts?

Recently, ex-Fed chair Ben Bernanke argued that the virus impact will be more like a ‘major snowstorm or a natural disaster than…depression’.1 If he is right, then we should expect a relatively rapid rebound once the virus comes under control. Looking back at recent disasters (such as the Japan 2011 earthquake, Haiti hurricane in 2010, and the 2005 Asian tsunami) we find sharp initial GDP losses were typically made up after a few quarters. The pattern of growth around the 2003 SARS outbreak was similar – a big initial slump then a very strong recovery. The UK ‘three-day week’ in 1974 – a large disruption caused by energy shortages – also had a big, but fleeting, impact (Figure 1).

But patterns of growth after large shocks can be very different. Deep and lengthy recessions in the 1970s and 1980s saw ‘hysteresis’ effects whereby sharp rises in unemployment and business failures cast long shadows over several years. And recessions involving financial crises are well-known for being followed by weak recoveries. Most recently, the global financial crisis saw a decent cyclical rebound in 2010, but much weaker growth than expected in the years after (Figure 2).

The coronavirus pandemic could potentially cause GDP in some economies to fall by 3%-5% in 2020, as economic activity is frozen by lockdowns. To put this in historical context, since 1900 across six major economies only around 7% of some 700 country-years have seen GDP fall by 5% or more, and only 2.5% of country-years saw declines of 10% or more - mostly during wartime (Figure 3).

It’s often asserted that after big GDP declines of this sort, economies tend to bounce back hard. But our analysis suggests this is far from always being the case. Outside wartime, only around 60% of big GDP slumps have been followed by strong rebounds, and the statistical relationship between the size of a slump and the pace of growth the next year is not very strong (Figure 4).

Indeed, outside wartime, we find big GDP falls in a given year were only fully regained the year after in a third of cases, and only regained after three years in 60% of cases. The picture is much worse for wartime periods (Figure 5).
So, hysteresis effects from big growth slumps aren’t inevitable but appear to be a significant risk. How much of a risk are these specifically in cases of pandemics?

The evidence is mixed. A study of 12 major pandemics by Jorda et al. suggests negative effects on rates of return (and depressive effects on risk-free real rates) lasting decades. But studies of the flu pandemic of 1918-1921 show varied outcomes. A large short-term effect is generally agreed on: Barro suggests it cut GDP and consumption by 6%-8% and the St. Louis Fed finds reports of 30%-40% declines in revenues for some businesses. But the St. Louis Fed sees limited evidence of long-term effects, while other authors either see large longer-term impacts or in the case of Brainerd and Siegler claim growth was boosted in the 1920s.

In many historic cases, negative impacts have stemmed directly from high mortality rates – the 1918-1921 flu pandemic may have killed 2% of the world’s population. This is less of a problem in the context of COVID-19. Instead, we expect much of the negative impact on GDP to come from measures designed to slow the spread of the virus, temporarily halting economic activity.

But this doesn’t mean long-term negative effects can be ruled out. In our view the likelihood of an enduring impact hinges on several factors:

- **The length of lockdown and restriction periods.** The longer lockdowns go on, the bigger the hit to growth, the greater the danger of financial knock-on effects, and the higher the risk economic activity will be permanently lost. Evidence suggests that the shorter the recession, the more likely it is to give way to a strong recovery.

- **The scale of the policy response.** In a study of recent pandemics Ma, Rogers and Zhou see a clear divide in long-term economic outcomes between those where governments spent early and aggressively to counter the impact and those where they did not. In the former case, output losses were contained to under 1% after five years; in the latter, long-term output losses were around 4% (Figure 6).

- **The effectiveness of measures to ‘mothball’ economic activity.** Policy design also matters: governments need to try to effectively preserve the supply side through

![Figure 5: Lost output is often not regained in the medium term](image)

**Recoveries after big GDP slumps, since 1900**

| % cumulative share of GDP falls fully reversed in given year(s) after fall |
|---|
| Ex wartime | Wartime |
| t+1 | 0 |
| t+2 | 10 |
| t+3 | 20 |
| t+4 | 30 |
| t+5 | 40 |
| t+6 | 50 |
| t+7 | 60 |
| t+8 | 70 |
| t+9 | 80 |
| t+10 | 90 |
| t+11 | 100 |

Source: Oxford Economics/Maddison database/Haver Analytics

![Figure 6: The policy response can be crucial to the medium-term growth path](image)

**Effect of policy responses to epidemics/pandemics**

| % loss in GDP |
|---|
| 0.0 |
| 0.5 |
| 1.0 |
| 1.5 |
| 2.0 |
| 2.5 |
| 3.0 |
| 3.5 |
| 4.0 |
| 4.5 |

Source: Ma, Rogers and Zhou (2020)

![Figure 7: Financial stress exacerbated GDP declines in the interwar US](image)

**US: GDP and stocks in the interwar period**

| % q/q |
|---|
| 0.0 |
| 1.0 |
| 2.0 |
| 3.0 |
| 4.0 |
| 5.0 |
| 6.0 |
| 7.0 |
| 8.0 |
| 9.0 |
| 10.0 |
| 11.0 |
| 12.0 |
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| 32.0 |
| 33.0 |
| 34.0 |
| 35.0 |
| 36.0 |
| 37.0 |
| 38.0 |
| 39.0 |
| 40.0 |

Source: Oxford Economics/Haver Analytics
lockdowns, so that it’s ready to respond to ‘standard’ policy stimulus and rebuild output when restrictions are lifted.

• **The effectiveness of policies to backstop financial markets.** The US interwar experience shows the dire real economic costs of allowing financial distress to snowball, with bankruptcies, bad loans, and collapsed commodity prices exacerbating the decline in GDP (**Figure 7**).

• **The private sector response.** Even after the pandemic is contained, there is a major risk that firms and households will react by raising precautionary savings and trying to rebuild depleted liquidity/wealth. This could have a depressive long-term effect on medium-term investment, productivity, and growth. Such a pattern was already visible after the global financial crisis (**Figure 8**) and would hasten progress toward the ‘Japanification’ of advanced economies.

Our baseline forecasts are for moderate medium-term output losses due to the coronavirus. On the positive side, we take into account that policy interventions so far have been huge and rapid. Less positively, we acknowledge that the scale of the short-term hit is likely to be so large that longer-term damage will be hard to avoid. What’s more, the synchronisation of the impact across economies will also hinder efforts to reboot economies.

In this context, a variety of medium-term ‘futures’ that vary from our baseline exist. We also accept that a good deal of heterogeneity of outcomes across economies is possible, based on different economic structures and policy responses.

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**References**

1. Belvedere, M.J. (2020). ‘Bernanke: Coronavirus disruptions ‘much closer to a major snowstorm’ than the Great Depression’, CNBC, 25 March 2020. [https://www.cnbc.com/2020/03/25/bernanke-says-this-is-much-closer-to-a-natural-disaster-than-the-great-depression.html](https://www.cnbc.com/2020/03/25/bernanke-says-this-is-much-closer-to-a-natural-disaster-than-the-great-depression.html)
2. Jordà, O., Singh, S.R. and Taylor, A.M. (2020). ‘Longer-Run Economic Consequences of Pandemics’. Federal Reserve Bank of San Francisco Working Paper, March 2020. [https://www.frbsf.org/economic-research/files/wp2020-09.pdf](https://www.frbsf.org/economic-research/files/wp2020-09.pdf)
3. Barro, R.J. (2020). ‘The coronavirus and the Great Influenza epidemic: Lessons from the “Spanish Flu” for the coronavirus’ potential effects on mortality and economic activity’. AEI Economic Policy Working Paper Series, 16 March 2020. [https://www.aei.org/research-products/working-paper/the-coronavirus-and-the-great-influenza-epidemic-lessons-from-the-spanish-flu-for-the-coronavirus-potential-effects-on-mortality-and-economic-activity/](https://www.aei.org/research-products/working-paper/the-coronavirus-and-the-great-influenza-epidemic-lessons-from-the-spanish-flu-for-the-coronavirus-potential-effects-on-mortality-and-economic-activity/)
Garret, T.A. (2007). ‘Economic Effects of the 1918 Influenza Pandemic Implications for a Modern-day Pandemic’. November 2007. https://www.stlouisfed.org/~/media/files/pdfs/community-development/research-reports/pandemic_flu_report.pdf

Brainerd, E. and Siegler. M. (2003). ‘The Economic Effects of the 1918 Influenza Epidemic’. CEPR Discussion Papers, No 3791, February 2003. https://econpapers.repec.org/paper/cprceprdp/3791.htm

Ma, C., Rogers, J.H. and Xhou, S. (2020). ‘Global Economic and Financial Effects of 21st Century Pandemics and Epidemics’. SSRN, 30 March 2020. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3565646