

Viral recessions: Lack of demand during the coronavirus crisis

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The Covid-19 pandemic and the policies taken to control its spread have many features of an aggregate supply shock, as workers who stay home are prevented from producing goods and services. This column argues that when a supply shock asymmetrically affects different sectors of the economy, it can produce a contraction in demand even larger than the original shock, leading to deflationary pressures. This is due to complementarities across sectors and the fact that workers in different sectors are differentially affected and lack insurance.

The COVID-19 pandemic and the lockdown measures taken to fight it are having massive economic effects, as revealed daily by real-time data, from unemployment claims to retail sales.¹ Governments and central banks around the world are showing clear intentions of doing everything possible to mitigate these effects. The immediate concern of economic policy is to protect the livelihoods of the people working in sectors immediately impacted by lockdown policies. Once we get beyond this natural concern, there is an open question: Should policy aim to encourage people to spend more, that is to provide ‘stimulus’, or should it focus purely on providing forms of social insurance?

The textbook approach to this question is to ask whether we are experiencing primarily a shock to aggregate demand or one to aggregate supply. On its face, the pandemic clearly has the features of a supply shock: workers in contact-intensive industries have to stay home. If they cannot work, they cannot produce. Nonetheless, many economists have advocated for efforts at softening the blow of the recession.² Gourinchas (2020) introduced the catchy expression “flatten the recession curve”. What are the arguments in favour of this view?

In a recent paper, we address this question by revisiting the basic theory of demand and supply shocks in a simple general equilibrium model. Our main argument is that the shock caused by the coronavirus is a supply shock of a special nature as it affects different sectors asymmetrically. As nicely put by Rowe (2020), there is a difference between a shock that hits all the sectors of the economy by 50% and a shock that hits 50% of the sectors by 100%. The central argument of our paper is that the coronavirus shock may be what we call a ‘Keynesian supply shock’, that is, a shock that causes a reduction in aggregate demand *larger* than the original reduction in labour supply.

The main question is how a shock that directly affects the most contact-intensive sectors of the economy propagates to the less contact-intensive sectors, where activity could continue, and whether it causes excessive job losses in those sectors. Our work points to two forces that can propagate the shock and turn it into a Keynesian supply shock: complementarities across sectors and incomplete markets.

The immediate effect of a lockdown is to essentially stop activity in contact-intensive businesses: restaurants, gyms, and hotels close. As consumers spend less on these items, they redirect some of their spending towards other sectors. Some are clear substitutes for the goods and services directly affected. Consumers who cannot eat out spend more on food prepared at home. Other sectors, on the other hand, are more complementary. Consumers who cannot go to the gym spend less on sport clothing; consumers who cannot go to hotels spend less on new luggage. The question is whether, overall, consumers reduce their total spending by more or less than what they were initially spending in the affected sector. If the forces of complementarity are strong enough, they will spend less, and the recession will spread.

The second step of the argument is that the incomes of the workers in shut down businesses are sources of demand for the other sectors. This second step is based on incomplete markets: the workers in the affected industries are not perfectly insured against the pandemic shock. Our paper shows that incomplete markets alone cannot cause Keynesian supply shocks in a one-sector model. However, when combined with cross-sector effects, they can. And they can actually flip the sign of the effect. That is, an economy may not feature strong enough complementarities to produce a Keynesian supply shock if markets are complete, but it can produce them under incomplete markets.

Here is the argument for this last result. Workers in affected sectors lose their incomes and cut back spending in every sector. Even if the unaffected workers partially compensate by switching some demand from the affected sectors to the unaffected sectors, the switch can fail to be strong enough to avoid a recession in the unaffected sectors. The reason is that the marginal propensity to consume of the unaffected workers is lower than that of the affected workers, due to the large income losses of the latter.

Figure 1 How negative supply shocks can lead to demand shortages

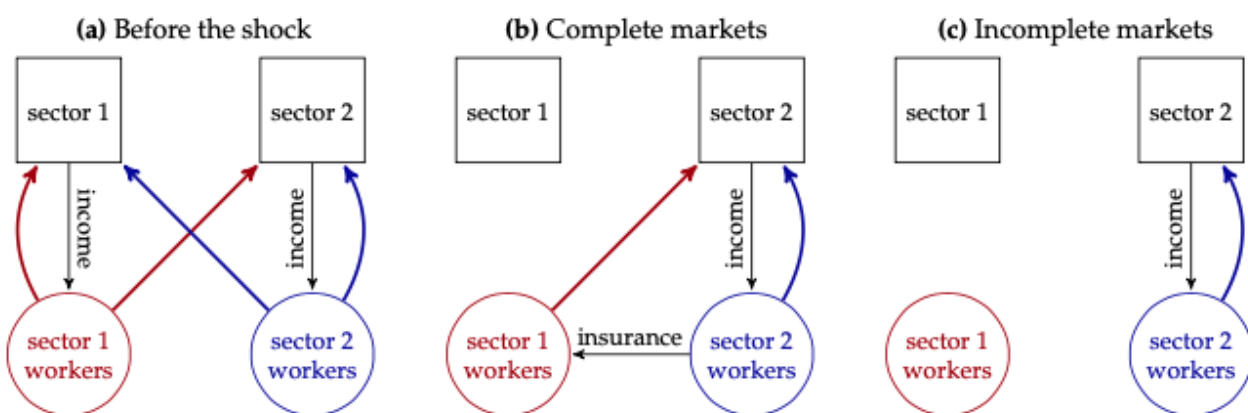


Figure 1 illustrates the two steps of our argument in an economy with two sectors, labelled 1 and 2. The first sector is directly affected. If workers in the first sector have perfect insurance, in the case of complete markets, the only force that can cause a contraction is complementarity. That case is illustrated in panel (b), in which the workers

from the 2 sectors reallocate some of their spending from sector 1 to sector 2. If the reallocation is less than complete, which happens if the goods produced by the two sectors are complements, then there is a contraction in demand in sector 2. Panel (c) shows what happens when markets are incomplete. In this case, an additional force is at work. Incomplete markets imply that sector 2 workers do not compensate sector 1 workers for the income loss. Sector 1 workers have larger marginal propensity to consume due to their income losses. Therefore, the case in panel (c) features a bigger contraction in demand.

Our emphasis on complementarities should be interpreted broadly. Complementarity may be directly due to consumers' behaviour, but it can also arise due to the input-output linkages between affected and unaffected sectors. If restaurants close, their demand for maintenance and repair services for dishwashers goes down.³

The same forces that can transmit the shock from affected to unaffected sectors can also cause propagation at a more micro level. Low demand can cause business closings, which can then act as an additional supply shock. This can also have Keynesian features, leading to a further fall in demand. We call this mechanism the 'firm exit multiplier'.

Our model has some surprising implications. In particular, traditional fiscal policy – say, an increase in government consumption – may be less powerful in a pandemic shock. The reason is that the Keynesian multiplier may be smaller than usual because government spending can only lift incomes in the unaffected sectors, not in the affected sectors. But it's the workers in the affected sectors who have the highest propensity to consume, and they are exactly those who cannot benefit from an aggregate spending increase.⁴

This does not mean that fiscal policy is not beneficial. Our model shows that social insurance programs that help workers in the affected sectors have a positive effect along three channels.

- First, of course, they have a positive effect in terms of insurance.
- Second, by dulling the Keynesian effects of the shock, they reduce inefficient losses of aggregate output due to insufficient demand. This second effect is especially valuable if monetary policy is constrained by the zero lower bound. These points closely parallel informal arguments made by Krugman (2020) in recent commentary, who summarises them as "disaster relief with a dash of stimulus."⁵
- We also identify a third channel, which shows the presence of complementarities between macroeconomic and public health policies. In reducing the economic cost of a lockdown, they are complementary to public health interventions. If the economic effects of a lockdown are mitigated, a stronger lockdown can be put in place, allowing us to fight the epidemic more effectively.

When thinking about lack of insurance for affected workers, it is useful to recognise that some degree of implicit insurance can come from the employers themselves in the form of labour hoarding – businesses in the affected sector may choose not to lay off workers

even though they are inactive. An open policy debate is whether fiscal policy should encourage this behaviour or whether just protecting individual incomes is the best course. In the paper, we develop a theory of labour hoarding and show that insurance through labour hoarding has an additional benefit: it prevents inefficient destruction of productive worker-employer matches, which would lead to a longer lasting supply shock. Our labor hoarding analysis lends support to policy proposals aimed directly at businesses – such as the emergency loans proposed by Hamilton and Veuger (2020) and the ‘buyer of last resort’ proposal of Saez and Zucman (2020) – and also to proposals to incentivise furloughs through the unemployment insurance system, as in Dube (2020).

References

Dube, A (2020), [“Filling the Holes in Family and Business Budgets: Unemployment Benefits and Work Sharing in the Time of Pandemics”](#), *Economics for Inclusive Prosperity*, (24).

Furman, J (2020), [“The case for a big coronavirus stimulus”](#), *Wall Street Journal*, 5 March.

Gourinchas, P O (2020), “Flattening the pandemic and recession curves”, Chapter 2 in R. Baldwin and B. Weder di Mauro (eds.), [Mitigating the COVID economic crisis: Act fast and do whatever it takes](#), VoxEU.org, London: CEPR Press.

Hamilton, S and S Veuger (2020), [“How to Help American Businesses Endure and Jobs Survive”](#), Mimeo, George Washington University.

Krugman, P (2020), [“Notes on the Coronacoma \(Wonkish\)”](#), *New York Times*, 1 April.

Leibovici, F, A M Santacreu and M Famiglietti (2020), [“How the Impact of Social Distancing Ripples through the Economy”](#), Federal Reserve Bank of St. Louis On the economy blog, 7 April.

Lewis, D, K Mertens and J Stock (2020), [“Monitoring Real Activity in Real Time: The Weekly Economic Index”](#), Liberty Street Economics, 30 March.

Sahm, C (2020), [“U.S. policymakers need to fight the coronavirus now”](#), Washington Center for Equitable Growth, 3 April.

Patterson, C (2019), [“The Matching Multiplier and the Amplification of Recessions”](#), Mimeo, Chicago Booth.

Rowe N (2020), [“Relative supply shocks, Unobtainium, Walras' Law, and the Coronavirus”](#), Worthwhile Canadian Initiative blog, 30 March.

Saez, E and G Zucman (2020), [“Keeping Business Alive: The Government as Buyer of Last Resort”](#), Mimeo, Berkeley.

Endnotes

- 1 The Weekly Economic Index of Lewis et al. (2020) uses several real-time indicators for the US economy and shows, at the time of writing, a contraction of 11% in yearly GDP.
- 2 Early voices advocating for stimulus include Claudia Sahm (2020) and Jason Furman (2020).
- 3 An early attempt at quantifying these input-output linkages is Leibovici et al. (2020).
- 4 This argument is the flip side of an argument in Patterson (2019).