

A critical Covid 19 economic policy tool: retrospective insurance

Alistair Milne

March 21st, 2020

Abstract

The Covid-19 pandemic is a major economic shock. With no comparable event having occurred since the 1918 Spanish Flu, and a rapidly changing public health situation, economic policy makers are largely having to improvise their responses. This note assesses the scale of this large shock, suggesting that it is about 10% of global GDP so around five times as large as the credit and liquidity problems that created the global financial crisis of 2007-2008. It then examines the economic policy response, suggesting that to be as effective as possible the response must address two distinct objectives: offset the deflationary economic shock *and* provide targeted support to those most directly affected and avoiding corporate bankruptcies. It proposes a surprisingly inexpensive framework – “retrospective insurance” at a net additional cost only 2% of GDP – that can guide the allocation of public resources to ensure no business goes under as a result of the pandemic and all who merit protection get support.

Key words: Coronavirus, Covid-19, Disaster Risk, Financial Crises, Fiscal policy, Insurance, Monetary policy, Pandemic risk, Systemic Risk

JEL numbers: E62, E65, G01, G22, H50

1. Introduction

Governments, worldwide, are facing unprecedented policy challenges from the rapid spread of the Covid-19 coronavirus. They are taking aggressive and increasingly intrusive public health measures, including closure of borders to international visitors and bans on ‘mass gatherings’, and going further with closures of schools and colleges, discouraging or banning socialising in clubs, bars or restaurants, and in many cases now ‘locking down’ communities and cities with everyone required to remain at home except for essential journeys. The most extreme interventionist measures have been successful. They have stopped the spread of the virus, in the city of Wuhan where it first originated, and in the rest of China. Worldwide, however, confirmed cases and deaths continue to rise rapidly (as of two days ago 244,693 confirmed cases and 10,024 deaths).

This note considers how governments can best address the resulting economic policy challenges. The discussion focuses on the UK, but the issues raised are general ones. The necessary effort to save lives is imposing substantial economic costs. As a result, the Covid-19 pandemic is not only a health crisis but also a major macroeconomic shock that has led to a collapse in the prices of bonds and shares worldwide and threatens to trigger a deep global recession. How can these economic costs be minimised? A central point emphasised here is that, in order to limit the long term economic impact of the pandemic, we need to protect businesses from bankruptcy.¹

The discussion here draws in part on an extensive literature on disaster management and disaster risk finance, i.e. the response to major natural hazards such as tsunamis, earthquakes and tropical storms. Delays, indecision and failures of co-ordination too often characterise the response to disasters, especially those of unusual severity.² The principal lesson from these experiences is the need to be prepared as far as possible in advance, working out the mechanisms of response in including, both the immediate disaster response and the subsequent financial and economic consequences. Be prepared!³ Even now we can still work out the appropriate mechanisms required in the months ahead for dealing with the economic impact of the world-wide Covid-19 pandemic.

The discussion also relates to the systemic financial risk triggered by the global financial crisis of 2007-2008. In 2020 there is also a systemic risk that is transmitting and amplifying the initial shock. This though this is not centred on the financial sector but rather amongst the business sectors most exposed to the crisis. The failure of firms threatens to impose long lasting structural damage through bankruptcy of healthy firms. This is a systemic risk because it threatens the degradation and breakdown of important networks of economic relationships.

The first point covered here (Section 2) is an assessment of the economic scale of the initial shock from the current pandemic. How long will it last? This shock is temporary and will eventually fall away as the pandemic passes its peak and is brought as fully under control as it can be. The timescale remains very uncertain, but the major public health measures now being taken will

¹ Two current analyses (Kaletsky, 2020; Saez and Zucman, 2020) make this same point and outline similar arrangements for protection of revenue as that suggested here.

² One example, documented by (Patrick, 2011), are the many parallel structures set up both inside and outside government, and consequent lack of coordination in the response to the 2010 earthquake in Haiti. Similar shortcoming emerged after the 2013 Typhoon Haiyan in the Philippines (Hanley *et al.*, 2014). A third example is the uncoordinated response to the 2005 Hurricane Katrina in New Orleans (Bea *et al.*, 2006; Skinner and Hodges, 2006). The Philippines case is the most relevant to Indonesia because they also had a well-developed national system of disaster agencies, but this did not avoid such problems emerging in the face of an extreme event.

³ For an insightful summary see (Clarke and Dercon, 2016). Their message is neatly captured in their title ‘*Dull disasters*’.

eventually be wound down. How big is it? As a proportion of GDP, it may be in the order of 10% of global GDP. This is perhaps five times as large as the readjustment of credit valuations that triggered the global financial crisis. Still, as argued in the remainder of this note, as a one-off shock the world has enough resources to cope.

The second issue addressed here (Section 3) is why the threatened macroeconomic impact is so big, much larger and more extended than the pandemic. A deep global recession lasting many years now seems possible. The key point here is that the initial shock is being amplified by systemic interactions. The nature of these systemic interactions are though different from those that which emerged in 2007-2008, it is much less driven by financial markets and much more by disruption of labour markets and dislocation of the ownership and management of productive capacity. This leads to a key policy conclusion: the priority of the economic policy response must be to address these systemic interactions at their source, i.e. minimising job losses and bankruptcies. Other economic impacts are driven by the potential destruction of jobs and viable businesses which once gone will be difficult to restore.

The third issue addressed here (Section 4) is the appropriate policy response. A substantial fall in global GDP is already taking place and will deepen. The principal findings here are twofold

- The solutions suggested by standard macroeconomics, addressing shortfalls of “aggregate demand” without distinguishing the myriad goods and services in the economy, are needed but are not enough on their own. Yes, a recession is now inevitable (it has already started) and a major macroeconomic stimulus is required. But to avoid a prolonged recession a substantial share of the resources mobilised by the fiscal expansion must be targeted on those economic sectors most immediately impacted by the pandemic.
- While such targeted solutions now are emerging, they remain piecemeal and imperfect. The speed with which they can be delivered and the extent of support they will provide is unclear. In particular, they do not sufficiently address the uncertainty and threat of bankruptcy hanging over the most affected businesses.

The next Section 5 draws these threads together, outlining a framework for developing our response to the pandemic based on the concept of “retrospective insurance”. This is proposed as a practical means of ensuring that our policy actions meet a key second economic policy objective, not just maintaining sufficient aggregate demand to avoid deflation but also to ensure that every business and is protected from default triggered by the wholly unanticipated economic pandemic. What is proposed here is a comprehensive approach, setting a guaranteed level of support based on loss of revenue for every business and non-profit organisation and also for the self-employed. This framework can also underpin the required international co-ordination needed to support international firms whose failure will impinge upon the citizens of many countries.

Illustrative calculation of the costs of retrospective insurance are provided for the airline group IAG. These are remarkably inexpensive given the extent to which IAG is exposed to the pandemic. This suggests that “retrospective insurance” can be implemented for an additional expenditure, over and above the most recently announced measures, of less than 2% of global GDP. This will ensure that all businesses and non-profit organisations and the large proportion of jobs worldwide can be fully protected from the impact of the pandemic.

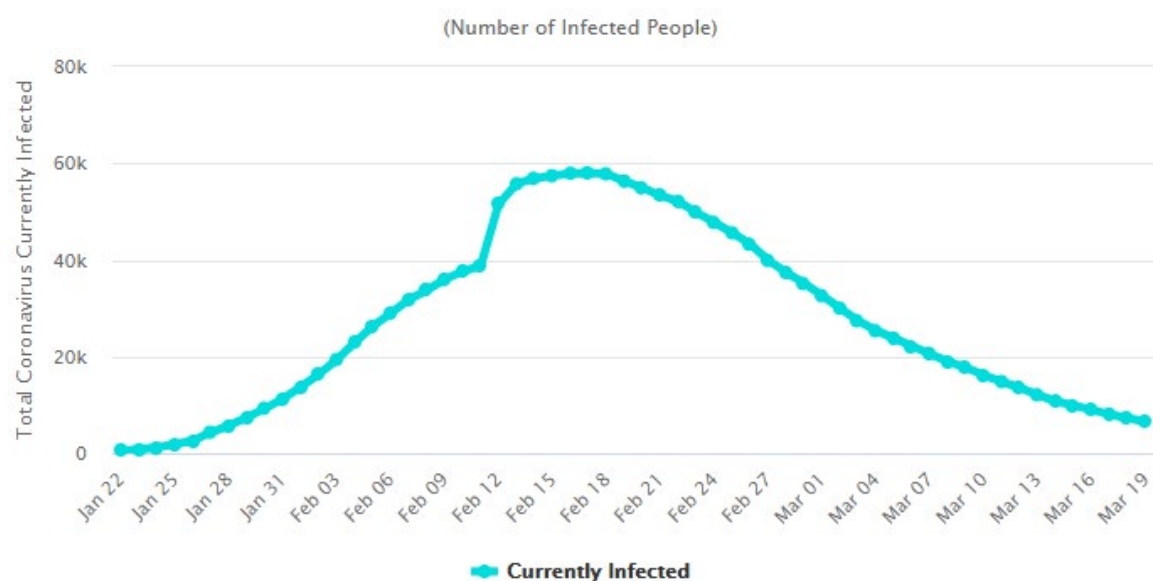
2. The economic scale of the pandemic.

The Covid-19 outbreak has triggered a collapse of revenues in transport, hotels, restaurants and tourism, recreation and culture, consumer durables and other business sectors as well as problems in global and domestic supply chains. But what is the scale of this impact? This section discusses first duration and then magnitude, concluding that the scale of the shock (duration × magnitude) is around 10% of annual global GDP.

Duration

The duration on the pandemic is uncertain. In China, where the public health measures have been most effective, the outbreak has been contained in less than two months, from mid-January to mid-March and an evident slowdown in the spread of infection in less than three weeks (Figure 1).

Figure 1: Active cases of Covid-19 in China



Source: <https://www.worldometers.info/coronavirus/country/china/>

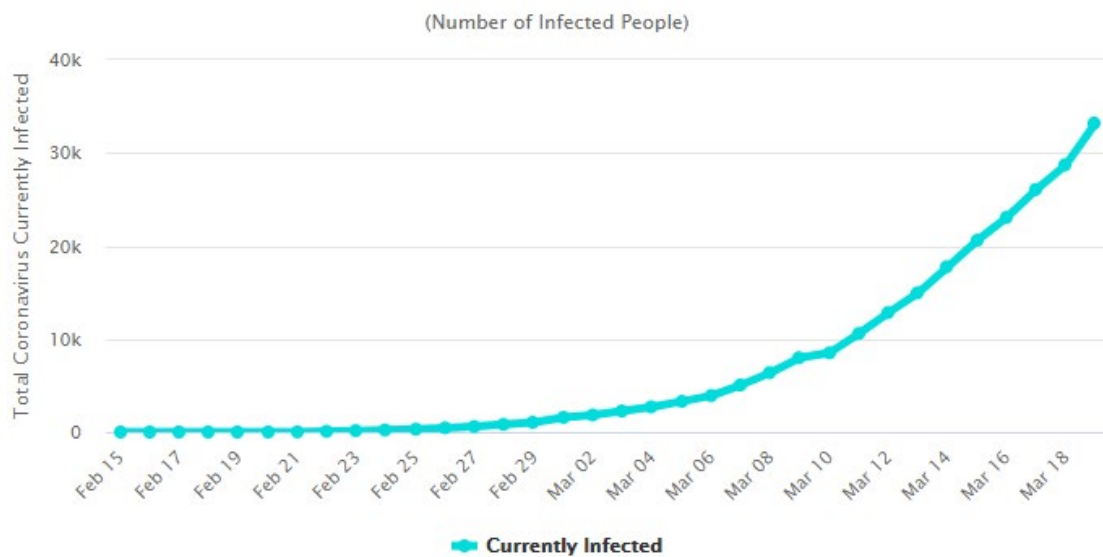
In Italy, in contrast, after four weeks there is still no evidence yet of any slowdown in the spread of spread (Figure 2). The scientific evidence collected for the UK government by their Scientific Advisory Group for Emergencies (SAGE) suggests a duration as follows “If the epidemiological parameters in the UK are comparable to China, then a peak in case numbers might be expected approximately 3 – 5 months after the establishment of widespread sustained transmission.”⁴

There has been a clear contrast between two groups of countries:

- a few countries including China, Singapore, Taiwan and South Korea, where a marked slowdown in new infections has been achieved within four or five weeks of the onset of widespread transmission and where, judging by the experience of China, it is eventually possible to reduce the number of new infections to zero (pandemic suppressors);
- other countries where an upward trajectory is continuing for a much longer period leading to spread throughout the population (pandemic accommodators).

⁴ Paragraph 13 of (SAGE, 2020)

Figure 2: Active cases of Covid-19 in Italy



Source: <https://www.worldometers.info/coronavirus/country/italy/>

The public health goals of pandemic accommodators differ from those of the public health goal of pandemic suppressors. Pandemic accommodators seek to extend the duration of the pandemic, to slow the spread so that the peak is lower and health services are better able to cope.

The question of how and why some but not all countries have been able to successfully contain and then eliminate the pandemic will occupy the attention of researchers for years to come. That question is not addressed here. The large majority of countries, including most OECD countries other than South Korea, will end up being pandemic accommodators. This note therefore focuses on the economic response required in these countries where the pandemic continues and eventually stabilises as an endemic illness recurring on a seasonal basis.

So how long will the pandemic, and the associated restrictions on social and economic activity, continue? The assumption here is that infections beginning to fall from a peak reached five months after the first internal transmissions within each country. The associated restrictions are brought in after the first months and continue on average until the seventh month. The, for the purpose of this note, it is assumed that the resulting economic impact lasts for six months.

Magnitude of the economic shock

What about the magnitude of this economic impact (treating the overall scale as Duration × Magnitude)? The following analysis looks only at the immediate direct impact, not subsequent ‘second rounds’ of reductions in income and expenditure, which are addressed in the next section.

Table 1 presents a projection of the percentage reduction of UK household expenditure, using the 2018 Bluebook as a baseline. These reductions are mainly a consequence of falling demand, as many retail businesses are closed, but also in some cases because of disruption to supply. The analysis here does not attempt to distinguish demand and supply impacts.

Table 1: the initial impact of the COVID-19 pandemic on UK household consumption (% fall)

		Food and Drink	Alcoholic beverages, tobacco and narcotics ²	Clothing and footwear	Housing, water, electricity, gas and other fuels	Furnishings, household equipment and routine maintenance of the house	Health	Transport	Communication	Recreation and culture	Education	Restaurants and Hotels	Miscellaneous goods and services	Total
2018 UK Household Expenditure Current Prices £mn	Durable Goods					29321	4235	49905	1135	34293			9307	128196
	Semi-Durable Goods			66591		25140		4924		35115			8158	139928
	Non-Durable Goods	104137	44171		40178	3600	11230	33499		21381			20482	278678
	Services			1031	307332	7453	11523	94588	20271	58080	31190	124847	135749	792064
	Total	104137	44171	67622	347510	65514	26988	182916	21406	148869	31190	124847	173696	1338866
Assumed impact of pandemic (%)	Durable Goods					-30.0%	10.0%	-40.0%	-10.0%	-10.0%			-10.0%	-25.6%
	Semi-Durable Goods			-40.0%		-40.0%		-60.0%		-20.0%			-40.0%	-35.7%
	Non-Durable Goods	10.0%	20.0%		20.0%	-20.0%	20.0%	-40.0%		-20.0%			-20.0%	2.5%
	Services	-30.0%			10.0%	-60.0%	10.0%	-60.0%	20.0%	-90.0%	0.0%	-90.0%	-40.0%	-30.8%
	Total	10.0%	20.0%	-39.4%	11.2%	-36.7%	14.2%	-50.9%	18.4%	-45.0%	0.0%	-90.0%	-36.0%	-23.9%
Consequent impact of pandemic on household expenditure (£mn)	Durable Goods					20524.7	4658.5	29943	1021.5	30863.7			8376.3	95387.7
	Semi-Durable Goods			39954.6		15084		1969.6		28092			4894.8	89995
	Non-Durable Goods	114550.7	53005.2		48213.6	2880	13476	20099.4		17104.8			16385.6	285715.3
	Services			1031	338065.2	2981.2	12675.3	37835.2	24325.2	5808	31190	12484.7	81449.4	547845.2
	Total	114550.7	53005.2	40985.6	386278.8	41469.9	30809.8	89847.2	25346.7	81868.5	31190	12484.7	111106.1	1018943.2

Notes. The top panel contains the breakdown of household expenditure from Table 6.2.12 of the UK Blue Book (National Accounts). The middle panel contains the imposed assumptions about the change in expenditure resulting from the pandemic and the public health measures. The bottom panel computes the resulting changes in expenditure and computes total impacts. These total impacts are then used to compute the aggregate percent decline of consumption (the bold figures in the middle panel). Spreadsheet used for these calculations available on request.

The takeaway from Table 1, based on detailed breakdown of the components of 2018 UK household expenditure in the 2019 Blue Book (the UK National Accounts), is that were the public health measures such as school closures to continue for 12 months, then the overall fall in household consumption would be 23.9% (the bold figure in the middle panel of the right-most column).

This figure is derived by imposing ‘judgements’ on the fall in consumption for each of the 25 components of household consumption distinguished in the national accounts. Many of these falls will be substantial – the table assumes a 90% fall in expenditure on recreation and cultural services and on services from restaurants and hotels. But these particular expenditures, while large, together still only amount to 13.3% of total household consumption. Some household expenditures will actually rise e.g. on health products. Expenditure on services and consumables includes household services and supplies such as water and heating which together account for 30% of all household expenditure and can also be expected to rise not fall. Expenditure on food and drink is also likely to rise, as home consumption substitutes for purchases in restaurants and bars and as a result of panic buying. Online delivery of goods will continue, so while there are likely to be declines in expenditures on durable and semi-durable goods these need not collapse.

This is not and cannot be a precise number. Different judgements can be imposed and result in a different estimate of the fall in household consumption. But it is a reasonable ‘ballpark’ figure.

This analysis only addresses the *immediate* impact on household spending. As incomes fall and jobs are lost, then there will be second and third round effects. These are discussed in the following section. Combining with the assumption of the impact lasting six-months, the conclusion of the earlier analysis above on the duration of the pandemic, indicates a duration of six months and therefore the overall scale (duration × magnitude) of the initial reduction in household expenditures is one half of 23.9% i.e. 12%.

Overall magnitude.

The analysis presented thus far suggests that the Corona virus will result in a decline of household expenditure of some 12% in 2020 compared to it would otherwise have been. Household expenditure is 63.6% of GDP, so this suggests an overall negative GDP shock of 7.6%.

However, allowing for a number of further impacts suggests that the total initial shock to aggregate demand will be higher than this (once again this is the initial shock to expenditure resulting directly from the pandemic and public health measures taken to address it, it is not allowing for any secondary ‘multiplier’ impacts resulting from unemployment, loss of incomes or corporate financial distress).

- UK government consumption represents some 18.6% of GDP. The immediate response to the crisis will result in additional and substantial additional government expenditure on medical equipment and staff. This though is part of the fiscal response to the crisis so is more appropriately treated as a secondary response not an immediate impact.
- Another area of reduced expenditure is intermediate consumption by businesses. The public health measures taken in response to the Covid-19 epidemic are directly reducing corporate spending, including on travel, conferences, events, hotels and restaurants. The most recently available detailed UK Input-Output Tables (for 2015) indicate that while these intermediate expenditures are sometimes only a small fraction of household expenditure (for example expenditure on “food and beverage serving services” is only 5.3% of the corresponding expenditure by households) the total intermediate expenditures on seven production

sectors that appear most exposed to the public health measures is 2.6% of GDP.⁵ These expenditures will be sharply reduced and so seems plausible that the direct reduction in Intermediate business expenditure will amount to a further 2% of GDP on an annual basis or 0.5% for the year 2020.

- What about the impact on private and public investment expenditures in 2020? These amount to some 17.1% of GDP, of which 8.3% is investment in the construction of dwellings and buildings; 0.8% is transport equipment; 3.0% other equipment including weapons and the remaining 4.9% intangible assets, principally intellectual property products (Blue Book Table 8.3). There will be a further direct impact on these expenditures. A shift to online purchasing would suggest a need to invest more than originally expected in transport equipment – but the automotive and other transport equipment industries are amongst the most severely impacted by supply disruption, so overall this must fall. Construction projects are expensive to halt so, while there may be delays, it seems likely that existing projects will continue. New projects though will mostly be delayed. Difficult to be sure but a further immediate negative impact of about 2% of GDP on an annual basis or 1% of GDP for 2020 is also plausible.

Adding in these additional expenditure reductions, suggests that the immediate negative expenditure shock in 2020 from the pandemic and the associated public health measures in the UK will amount to a total of 9.6% of 2020 GDP, of which 7.6% is reduced household expenditure.

This analysis omits one wrinkle. It ignores net international trade (exports minus imports). International trade is going to fall and presumably fall more than domestic economic activity. The UK is a net importer of goods and services with imports (at 31.9% of GDP) exceeding exports (30.2% of GDP). These reductions may balance out. Possibly the imports and exports of services, in which the UK is a net exporter, will be affected more than the imports and exports of goods. The UK figures employed here are simply an illustration of the scale of the problem. The scale of the shock will be similar in most other countries. For the purposes of assessing the best economic response, the impacts of change in net international trade which are a benefit to some countries but a loss to others, are set to one side.

This shock is large, but how does it compare with that which triggered the 2008 global financial crisis? Assume the global economic shock resulting the pandemic is on a similar scale in other countries as those estimated here for the UK, i.e. around 10% of GDP. Then the global economic shock is a fall in expenditure of US\$9trn. The initial problems in 2008 arose with losses on sub-prime mortgage lending, which were worth in total some \$0.8trn dollars.⁶ The total potential credit and liquidity losses from the 2008 global financial crisis, before policy intervention, may have been around \$3.5trn, but this includes second round effects it is more than the initial shock.⁷ Broadly speaking we think of this shock as being around five times the magnitude of that which occurred in 2007-2008.

⁵ These are: accommodation services; food and beverage serving services; travel agency, tour operator and other reservation services; creative, arts and entertainment services; sports, amusements and recreation services; and other personal services.

⁶ Source (Milne, 2009) Table 2.2.

⁷ Source (Milne, 2009) Table 2.3.

3. Systemic and structural impacts.

Section 2. has examined the scale of the initial economic shock caused by the Covid-19 pandemic, finding (through analysis of UK data) that is leading to a decline of spending of around 10% of GDP for the calendar year 2020. The scale of the economic shock appears to be approximately five times larger than that which triggered the global financial crisis of 2007-2008.

This section considers how a shock of such magnitude could lead to permanent structural economic damage. An analogy may help explain what follows. We can think of the pandemic as being akin to a major trauma to a human being, such as a serious fall or motor accident. A key task for responders is limiting the consequent damage – the bruising, scars – that following the trauma. Structural damage cannot be avoided but it must be minimised. This section adopts a similar perspective, analyses the systemic impact of the initial shock. This indicates that the appropriate policy response must include as central objective the protection of jobs and the prevention of corporate failure.

There is a parallel with the crisis of 2007-2008. Then as now experts in economic and financial analysis substantially underestimated the scale of the subsequent economic downturn. The reason that happened then, as we know now, is that their analysis did not take account of the systemic interactions that follow any large economic shock, interactions that in turn could result in substantial structural economic damage.

That insight still applies, but as this section explains the shock this time differs from that of 2007-2008 triggering different systemic problems from those of the global financial crisis and therefore requiring a different policy response.

Consider the following definition of systemic risk (a merit of this definition in the context of the current pandemic is that it is not specific to financial services):

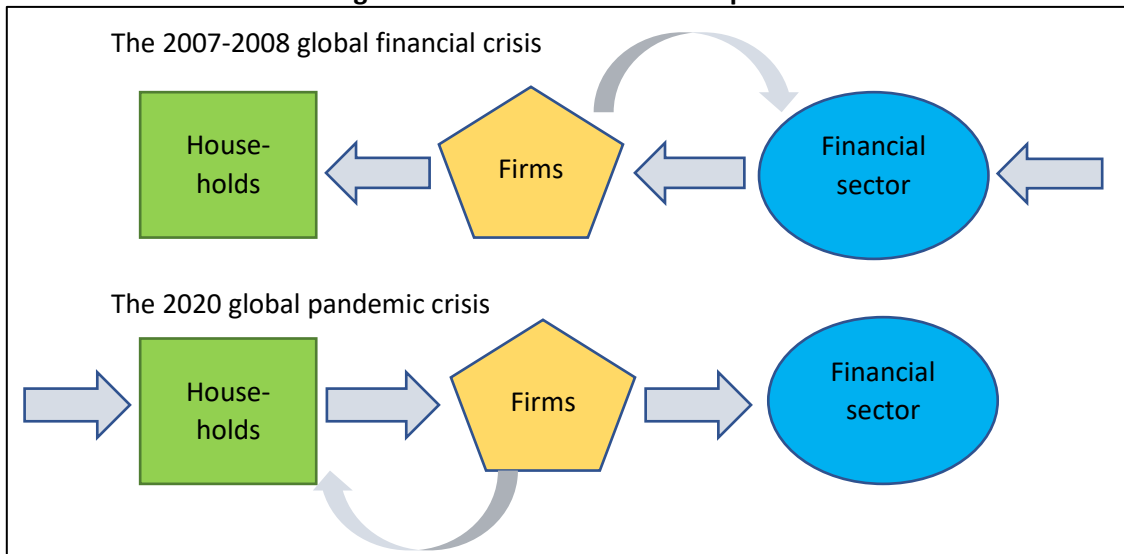
“A systemic risk materialises when an initial disturbance is transmitted through the networks of interconnections that link firms, households and financial institutions with each other; leading, as a result, to either the breakdown or degradation of these networks.” (Besar et al., 2011)

To what extent is the transmission of the 2020 global pandemic shock leading to a systemic risk and how far does this parallel the emergence of systemic risk in 2007-2008?

Figure 3 offers a characterisation, suggesting that mechanisms operating now are rather different from those in 2007-2008. This figure admittedly oversimplifies, ignoring for example transmission within firms or directly between households and financial institutions. It also assumes that the 2020 economic shock entirely emanates from the household sector (the analysis of Section 2 suggests this is largely true). It still though illustrates a key point: the shock and its transmission – and therefore the networks of interconnections that are most threatened with breakdown or degradation and require protection – are very different today in 2020 than they were in 2007-2008.

The key networks that most immediately threatened in 2020 are not now the payment system or the short-term credit that finances working capital, production and exchange (these are also threatened, but only subsequently not as an immediate impact from the initial shock).

Figure 3: Crisis transmission compared.



What are the key networks between households, firms and financial institutions that are under most immediate threat of breakdown or degradation? These will include:

- The arrangements through which firms maintain relationships and ongoing transactions with their customers, suppliers, banks, and investors. A corporate failure (or that of a non-profit such a charity), unless this is resolved through acquisition, results in the ending of all these arrangements. This is a major network degradation.
- Even if a company does not fail it may seek to protect itself by delay of payments to suppliers in turn pushing them into liquidation. Here there is a parallel to 2007-08 where cash flow difficulties for even large companies led to a very sudden contraction in bank lending and trade credit, reflected in the rapid decline in volumes of world trade in 2009Q1. Now though the mechanism is a little different. In 2007-2008 the problem was credit supply. Now the problem is emanating from those companies most affected by initial shock e.g. airlines.
- The credit and other relationships between households and financial institutions. An illustration of this is that credit card companies are already considering substantial reductions in limits for some customers because of heightened risk of default.⁸ While not all households will be affected, these will be amongst the most economically vulnerable and re-establishing credit worthiness after the crisis may be protracted and difficult.

The potential of breakdown is further amplified by conventional 'multiplier' and feedback effects. As incomes fall and jobs are lost, then there will be substantial second and third round reductions in household expenditure. This would not be an 'economically rational' response were households able to freely borrow. Our standard models of economic behaviour indicate that households will seek to smooth consumption and only reduce consumption to the extent they face a reduction in their life-time wealth. The economic shock triggered by the covid-19 is large, but it can still be expected to be temporary. A temporary 10% loss of income for 'homo economicus' should see a much smaller

⁸ Reported by (Armstrong and Noonan, 2020). For customers with stronger credit ratings the response has been the opposite, offering increases in credit limits and payment holidays to get through the pandemic (and generate some additional business for the credit card issuer).

reduction in current spending, perhaps only 1% of income. But a large proportion of households are financially constrained and such constraints are especially likely to bind for those that lose jobs and during a period of economic crisis. Also concern about the permanent impact of the crisis will lead even 'homo economicus' to a bigger reduction in spending. Therefore the full impact on household expenditure could be considerably larger than the initial shock.

Also, as illustrated in Figure 3 there are further reinforcing feedbacks. These though are not the same today as in 2007-8. Then the most powerful feedbacks of this kind were between banks and firms, as the economic crisis deepened the financial position of companies involved in a range of industries worsened, notably in commercial and residential property, and this in turn put additional stress on bank balance sheets. Figure 3 highlights the presence in 2020 of a different reinforcing feedback as firms let employees go or reduce their wages leading to further corporate financial stress.

Figure 3 is designed to highlight the differences in transmission between 2007-2008 and 2020. The differences will become less obvious if the current economic shock is not contained. In truth, in both the global financial crisis and now today in the global pandemic crisis, the arrows run in both directions. Even a shock that initially originates largely in the household sector, such as Covid-19, if it is large enough and allowed to run on for long enough places stress on financial institution balance sheets and can eventually lead to the failure of banks and other financial institutions. Then we would see feedbacks from the financial sector onto firms and households and the additional emergence of the similar systemic risks to those that arose in the global financial crisis. There are some initial signs of such stress happening already, with a substantial global increase in demand for holding dollar deposits instead of market instruments. Concerns about bank solvency and liquidity could yet lead a contraction in the supply of credit that impacts on firms and then on households.

The key point is thought that such transmission, from financial institutions to firms and households, is a further or tertiary consequence, following the initial secondary transmission from households to firms and then on to financial institutions. Financial institutions are *not* an initial source of transmission. Therefore, economic policy must focus first on the initial transmission from households to firms, specifically doing all that is possible to prevent the loss of income, redundancies and corporate failures that will otherwise lead to permanent structural economic damage. This is also the most effective way to limit impacts on financial institutions.

4. The two objectives: macro and micro.

Section 2, assessing the scale of the current economic shock, and Section 3 identifying the potential permanent damage from job losses and bankruptcy together outline the economic challenge. This section discusses the appropriate response. It argues that it is essential to address two distinct objectives: first providing a sufficient fiscal expansion to offset the deflationary aggregate demand shock resulting from the pandemic; second and equally important targeted microeconomic support in the form of grants to prevent corporate failures and redundancies.

Both macroeconomic and microeconomics are relevant to designing the appropriate economic policy response to the pandemic. The initial shock at 10% of global GDP is large. As textbook macroeconomics indicates, there will be second round “multiplier” effects. If the global economy were to behave in a similar way to smaller more familiar shocks that monetary policy makers in particular are well used to dealing with, then (absent of policy intervention) the multiplier could be expected to be around 2 and the overall fall in global GDP around 20%.

In theory demand shocks can be relatively easily offset. A strong global fiscal policy response also amounting to around 10% of GDP should, according to standard macroeconomic modelling, be enough to offset the deflationary impact of the Covid-19 pandemics. This will not fully offset the impact, there are lags in response, but from a macroeconomic perspective there is no obvious reason why much of the economic loss triggered by the Covid-19 pandemic cannot be offset in the months ahead.

A macroeconomic perspective also gives us a guide to magnitude of fiscal expenditure required to deal with the economic impact of the crisis. A macroeconomic perspective suggests expenditure of the same order of magnitude as the initial shock. So fiscal expansions of the order of 10% of GDP can be anticipated around the world. This will be the largest ever peacetime fiscal expansion, but there will be no real difficulty in financing it. If necessary, it can be financed through borrowing from central banks. Since the borrowing is for short term this will not trigger loss of control over either public finances or inflation.

Much of the immediate policy discussion that has taken place so far focuses on this need for rapid macroeconomic stimulus. One popular suggestion which could be introduced relatively quickly, and has even captured the attention of President Trump, is to provide cash handouts to citizens. This is sometimes referred to as “helicopter money”, an appropriate label if as is very possible such transfers would be financed directly through expansion of the central bank balance sheet i.e. “money creation.”

Cash transfers can be executed relatively quickly (unlike most forms of fiscal expenditure which will take time to bring on stream). There are some administrative difficulties, ensuring every citizen benefits, and executing the actual money transfer (in the US, where payment by cheque is still normal, this is actually easier, all that is required is a mail out of cheques; in countries that rely solely on electronic payment it is more difficult because governments do not keep records of the bank account of every citizen). Compared to tax cuts, cash transfers have the merit of greater ‘fairness’ giving equal amounts to each citizen. Were this a purely macroeconomic disturbance, albeit one of unusually large size, then this would be a sensible approach. In the US, with a 2019 per capita GDP of \$65,000 dollars, a transfer amount to \$5,000 dollars for every man, woman and child in the country. Provided these transfers were then spent – a big if – the macroeconomic impact of the Covid-19

pandemic would be largely offset. Concern about initial saving suggests a bigger stimulus might be required, possibly \$10,000 for every man, woman and child.⁹

However, from the microeconomic perspective, taking account of the details of the economic impact and the consequent systemic structural interactions outlined in Sections 2 and 3, there are drawbacks. First and most obviously they are a scatter gun approach, they do not provide the money directly to those who most need it. Second it will do nothing for sectors such as aviation, recreation and culture or restaurants and hotels, where businesses are required to close as a public health measure. Giving their customers more money does not help firms in these sectors avoid bankruptcy. Third, it does not directly prevent the transmission illustrated in Figure 3 and hence avoiding permanent structural economic damage. Fourth, given the huge economic uncertainty created by the crisis, it is unclear that much of the transferred cash will be spent and therefore how much needs to be distributed. Taking all these considerations into account it seems very doubtful that cash transfers, or “helicopter money” will on their own be an effective economic response to the pandemic.

What else then is needed? A second set of policies has followed the precedent of the 2008 crisis, taking measures to ensure that there is no breakdown in the supply of credit to firms. For example in the UK, the Bank of England working HM Treasury is operating a scheme to purchase commercial paper directly from eligible (firms with investment grade credit ratings of equivalent financial strength). Such measures can be introduced quickly but again fail to directly reach the households and most of the firms directly affected by the economic shock of the pandemic.

So what is clearly required also are direct transfers to those households and businesses most affected by the economic shock of the pandemic. In terms of Figure 3 this means addressing the economic shock at source. In particular (i) preventing the drop in household expenditure in turn impacting on firms and triggering bankruptcies; (ii) where household income is lost ensuring that individuals are compensated sufficiently and rapidly, to cover essential needs and avoid financial distress and loss of credit standing.

Much of the policy response that has been announced in past days is of this form. In the UK Chancellor (minister of finance) has from Friday 20th March announced a scheme for paying employers 80% of the salary costs of employees up to £25,000 in order to prevent layoffs together with other schemes for financial support to small businesses. In Germany, according to the Financial Times (21st March, 2020) *“Ministers will consider plans for a €156bn supplementary budget for 2020, including a €50bn hardship fund to help small businesses and freelancers whose revenues are collapsing as the virus spreads. They will also approve a €100bn economic stabilisation fund that will be used to take stakes in companies crippled by the fallout from the pandemic, according to a person familiar with the plans, paving the way for a radical state intervention in the workings of the market economy.”*

These are important steps in the right direction. But the analysis of Sections 2 and 3 suggests that they will not achieve all that is hoped. The principal difficulties with these piecemeal measures are the following:

⁹ The Economist of 20th March, 2020 <https://www.economist.com/briefing/2020/03/19/governments-are-spending-big-to-keep-the-world-economy-from-getting-dangerously-sick> reports that “[US Treasury Secretary] Mr Mnuchin is thought to favour a cheque of \$1,000 per American—roughly equal to one week’s average wages for a private-sector worker—with the possibility of a second cheque later.”

1. Targeting is still imperfect. Policy makers are shifting, correctly, to support for those businesses and individuals most affected by the pandemic and the public health measures taken against it. But targeting inevitably creates administrative complexity and some deserving beneficiaries may still miss out on support altogether. The UK government has for example already admitted that its announced schemes to do little to help the self-employed.
2. Second timeliness and accuracy of delivery. Government agencies are not used to executing rapid transfer of funds. At least in the UK they have something of a bad reputation for getting their sums wrong. Banks and non-bank lenders have much more appropriate systems for assessing financial position and providing funds, but these are not as yet being used.
3. Third insufficient scale. These are large fiscal injections, but it remains unclear if they are enough. This is perhaps the least important of these three objections, since more money can always be provided, but policy makers will need to ensure that if more is needed this is done quickly enough.
4. Fourth, and perhaps most importantly, continuing uncertainty. The biggest problems for all affected firms, large and small, following the initial collapse in revenues but also huge uncertainty about how long the revenue loss will continue and what form of recompense will be available to them. The UK measure “80% of wage bill” is in this respect well designed – firms now immediately how much help will be available to ensure they do not have to layoff employees. This will save many jobs. But other elements of support will be needed and it is unclear whether and if these will be forthcoming.
5. Fifth political. The memories of the crisis of 2007-2008 remain and there is still considerable resentment the decision characterised as ‘bailing out the banksters’ i.e. providing financial support to the very perpetrators of the initial problems that caused the crisis. This should not be such a concern in 2020 (by and large those firms and individuals in trouble cannot be blamed for their predicament). But still politicians still feel they must focus support on individuals not firms. Where support for firms is being offered it is conditional on the state taking a substantial share of ownership, which while understandable threatens to lead to firms avoiding taking this support even if this results in damaging impact on their suppliers, customers and employers.
6. Sixth insufficient international co-ordination. The response to date to the pandemic has been characterised by the pulling up of national drawbridges with closure of borders, hostility to foreigners and a major impact on international trade. Recovery will require international co-operation especially to address the situation of large multinational firms that operate in many jurisdictions (a major problem of the 2007-2008 crisis was the absence of arrangements to save large multinational banks).

For all these reasons, the support announced so far will still be insufficient to prevent as far as possible the systemic interactions and structural damage discussed in Section 3. More still needs to be done. Fortunately it turns out that the additional costs of doing more are not so large as might be thought, it is suggested here that – in addition to the measures already announced – perhaps only 2% of GDP and this will be enough to protect all businesses and non-profit institutions and most jobs from destruction by the pandemic.

5. A coherent approach: “retrospective insurance” as a guiding principle for our economic response to the pandemic.

This section outlines a mechanism for extending the targeted responses for protection businesses and jobs, already announced, and hence prevent the systemic structural economic damage threatened by the Covid-19 pandemic. This approach draws on the analysis of disaster planning, cited in the introduction. As far as possible the response to unfolding disaster should be set out in advance so that those involved can plan their own actions as well as possible and the protection provided is as comprehensive as possible.

This more co-ordinated approach proposed here is one of ‘retrospective insurance’. The rationale for this is that there is a need to correct a market failure: the absence of widespread business interruption pandemic insurance. It is the absence of such pandemic protection that is leading to the transmission from households to firms illustrated in Figure 3 and which threatens to cause substantial and long lasting systemic structural damage, from layoffs and from the failure of healthy companies. Therefore, the overall role of government in response to this crisis is to step in and provide this insurance which has not been provided by the market.

This means that, government should now be basing their promise of support by asking the following “what if?” question. Suppose business had taken out appropriate business interruption insurance, what compensation would they require in order to ensure to avoid financial distress or being forced out of business altogether, until the impact of the disaster has receded? Similarly, suppose an individual loses income as a result of business interruption, what compensation would they require in order to maintain themselves without the threat of losing their home or their credit standing and be able to resume their livelihood once the impact of the disaster has receded?

This ‘retrospective insurance’ is a complement to, and not a substitute for, the measures of support for individuals and businesses already taken so far. All these measures are appropriate and welcome. The point of announcing retrospective insurance is to provide a framework of compensation that includes all these measures and to build confidence by setting a clear and forward looking basis for assessing the totality of public financial support so that, as the pandemic unfolds, businesses and individuals will receive. This will give them as much certainty as possible about the support they will be given. Where the payments they have already obtained fall short of that offered retrospective insurance then they can expect to get more. Where the payments exceed, then they are lucky it will not be clawed back.

A more detailed discussion of how this retrospective insurance can work, including sample calculations, is provided by (Milne, 2020). The box below provides an illustrative calculation of the calculation of this retrospective insurance for the Airline company IAG, the owners of British Airways, Iberia and Aer Lingus and other subsidiary airlines.

The key features are as follows:

- A straightforward calculation of payout (see box on the next page). This follows the example of the schema announced by UK Chancellor Rishi Sunak, i.e. a simple percentage calculation, but it is extended to cover rent and a share of profit as well as wages. The reason this extension is necessary that businesses will still fail, following a decline of revenue, if they are unable to cover rent or other essential costs. In fact this is simpler than the Sunak proposal. There is no need to set an upper level on compensated wages.

- The compensation is automatically distributed through the supply chain. In the example IAG is naturally suddenly buying little aviation fuel. The supplier of aviation fuel to AIG also qualifies for compensation and will qualify if their revenues fall 10% below those of 2019.

Box. This box presents an illustrative calculation of retrospective insurance for the airline group IAG.

Table 2: illustrative calculation of payout for International Airline Group IAG

Assumed revenue loss 2020 over 2019: 75%					
Trigger loss for insurance payouts: 10%					
All financials €mn	2019 accounting data		2020 projected decline		2020 compensation
	€mn	%	Total	Eligible	Ratio
Revenue	25506	100.0%	19130	16579	
Wages	4962	19.5%	19.5%×16579=3225		80%
EBITDA	5396	21.2%	12.9%×16579=3507		50%
Rent	0	0.0%	0%×16579=0		100%
Total Value Added	10358				4334

The required data is that in the first two columns of numbers, the figures for revenue, wages, EBITDA (profit before interest, taxes and dividends) and rent, all taken from the IAG annual report <https://www.iairgroup.com/~media/Files/I/IAG/documents/IAG%20Annual%20report%20and%20acccounts%202019.pdf>. The annual report does not distinguish rent payments from other property costs so these are assumed to be zero.

The first two rows are the assumptions about revenue loss for 2020 (assumed to be 75%, since even if they commence flying again after six months passenger numbers will remain low) and for the deductible before any retrospective insurance is payable.

The middle two columns show the calculations of eligible projected decline in wages, EBITDA and rent, under the assumption that these fall direct proportion to the decline in revenues. The total decline in revenues is 75%×25506=19130. The excess, over and above the 10% revenue loss trigger is 65%×25506=16579. The projected eligible decline in wages is then 19.5%×16579=3225 and in EBITDA 12.9%×16579=3507.

The final two columns show the calculated retrospective insurance payout. This is simply the appropriate ratio (80% for wages, 50% for profits, 100% for rent) applied to the projected eligible decline in the components of value added. The total compensation of €4334mn compared to a 2019 value added of 10358

- It shares costs appropriately between the public purse and the affected businesses. What is provided is not a full compensation for loss of revenue, but generous compensation, whenever revenue decline exceeds some minimum trigger level (ie. it is an insurance with a deductible.). This trigger level assumed here is a 10% annual revenue decline, something corresponding to a level that any well-run business should be able to absorb in the course of normal business operations without financial distress.
- The payout can then be based on the ratio of wages, rent and profit to revenue as recorded in the most recent annual accounting statement for each firm or self-employed worker. As envisaged in (Milne, 2020) this payout assumed here is 100% of rent, 80% of wage payments

and 50% of profits. This will be enough in most cases to maintain sufficient profitability to be able to pay interest on debt and, if the business is still making a profit after a revenue decline of more than 10%, to pay corporate taxes. Note that some compensation for lost profit will always be required to avoid bankruptcy because businesses have substantial fixed costs which cannot be avoided even if revenues collapse.

- This ensures minimal job losses. A condition on eligibility will be maintaining the number of employees close to that (perhaps 5 per cent of the level) before the pandemic started. This compliance can be checked in the UK using employment tax records.
- Is it affordable? Yes. As the box illustrates, even in the case of a massively impacted firm the required insurance compensation is only around one half of value added. **This implies that similar retrospective insurance compensation can be provided for all companies, self-employed individuals and cultural, social and religious organisations for only one half of the magnitude of the initial shock i.e. if the shock is 10% of GDP this retrospective insurance will cost at most only 5% of GDP, actually less because few firms will be affected quite as badly as IAG. An overall cost of 4% of GDP seems reasonable. In addition to targeted measures already announced the net cost is likely to be less than 2% of GDP.**
- Retrospective insurance deals with all six shortcomings of the current piecemeal measures.
 1. Targeting is both wider and more accurate. It sets out the amount of support available to all businesses whether large and small and including the self-employed and also cultural, social and religious organisations. It also makes a payout which ensures that all businesses can survive, but requires the businesses themselves to absorb the first loss.
 2. It supports more timely and accurate delivery. Delivery through government distribution e.g. through the tax authorities can continue. But the promise of future payment based on retrospective insurance also allows alternative delivery channels of the requirement money through banks and non-bank lenders. The ability to easily calculate what the forthcoming payment will be allows affected firms to turn directly to bank and non-bank lenders, and their established systems for assessing and making loans (these lenders will just need a small compensation, a claim on their own administrative costs to a maximum of say 0.2% of the value of the money loaned).
 3. There is no longer a claim about insufficiency, the scale is unlimited.
 4. It minimises continuing uncertainty.
 5. It reduces political concerns about bailing out firms with public funds: because all companies because they are all being treated on a consistent basis (there is no political favouritism) and because the basis of calculation is transparent and fair (only provided when the revenue loss is). Some firms may require additional funding – because they are for example highly leveraged and the compensation level restricted to 50% of profits does not allow them to repay debt. In this case additional funding could be made available in term for state ownership of a share of equity. But this will only apply to a small number of large firms.
 6. Provided it is adopted along similar lines globally, then it provides a framework for saving multinational companies where countries may otherwise be unwilling to collaborate in order to prevent them failing as a result of the pandemic.

6. Summary

This note has assessed the scale of the economic shock resulting from the Covid-19 pandemic. Extrapolating from UK data it finds that the initial economic shock in terms of reduced household and business expenditure is likely to amount to around 10% of global GDP.

It then argued that the economic policy response to the COVID pandemic is meeting two related but distinct economic objectives:

- Macroeconomic and well understood. Providing a sufficient compensating fiscal expansion to avoid a major recession (a recession is unavoidable but it need not be large).
- Microeconomic and not so widely appreciated. Preventing systemic structural economic damage by ensuring that no company goes bankrupt as a result of the pandemic and that there is minimal loss of jobs.

It then explores how this microeconomic objective can be met in a coherent and comprehensive way, through a scheme of retrospective insurance.¹⁰ It demonstrates that practical calculation of the required compensation is straight forward. Introducing such a scheme will complement and support measures already taken and under consideration. It avoids political wrangling about who should get support and whether this should be limited to certain beneficiaries on political grounds. It provides the essential certainty that businesses need to survive and recover from the pandemic.

Finally, the costs of such retrospective insurance – over and above the commitments to support already provided – are also remarkably low (reflecting its efficient targeting). Total costs of retrospective insurance is estimated at 4% of GDP. Given that at least half of this will be compensation that has or will be offered on a piecemeal basis through grants and wage support, the net cost is 2% of GDP or less. This is a very small bill to pay for complete protection of businesses and jobs from the impact of the pandemic.

¹⁰ Similar to proposals of (Kaletsky, 2020; Saez and Zucman, 2020)

References

- Armstrong, R. and Noonan, L. (2020) 'US credit card lenders reel as borrowers get laid off', *The Financial Times*, March. Available at: <https://www.ft.com/content/0ed8c30c-69f3-11ea-800d-da70cff6e4d3>.
- Bea, K. *et al.* (2006) 'Federal emergency management policy changes after Hurricane Katrina: A summary of statutory provisions', in. LIBRARY OF CONGRESS WASHINGTON DC CONGRESSIONAL RESEARCH SERVICE. Available at: <http://www.dtic.mil/dtic/tr/fulltext/u2/a460718.pdf>.
- Besar, D. *et al.* (2011) 'Systemic Risk in Financial Services', *British Actuarial Journal*. Cambridge University Press, 16(02), pp. 195–300. doi: 10.1017/S1357321711000110.
- Clarke, D. J. and Dercon, S. (2016) *Dull Disasters? How planning ahead will make a difference*. Oxford University Press.
- Hanley, T. *et al.* (2014) *IASC Inter-agency humanitarian evaluation of the Typhoon Haiyan response, Prepared on behalf of the Inter-Agency Humanitarian Evaluation Steering Group*. New York: UNOCHA. Available at: <http://www.unhcr.org/uk/research/evalreports/583305867/iasc-inter-agency-humanitarian-evaluation-typhoon-haiyan-response.html>.
- Kaletsky, A. (2020) 'A modest proposal to avert economic catastrophe', *The Gavekal Research Daily*, March. Available at: <https://research.gavekal.com/article/modest-proposal-avert-economic-catastrophe>.
- Milne, A. (2009) *The Fall of the House of Credit*, Cambridge University Press. Cambridge: Cambridge University Press. doi: 10.1017/CBO9780511596643.
- Milne, A. (2020) 'An appropriate fiscal response to Covid-19 is retrospective insurance protection.', *The Conversation*, March. Available at: <https://theconversation.com/profiles/alistair-milne-704791/articles>.
- Patrick, J. (2011) 'Evaluation insights Haiti earthquake response emerging evaluation lessons'. Citeseer. Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.258.5936&rep=rep1&type=pdf>.
- Saez, E. and Zucman, G. (2020) *Keeping Business Alive: The Government Will Pay*. Available at: <http://gabriel-zucman.eu/files/coronavirus2.pdf>.
- SAGE (2020) 'SPI-M-O: Consensus Statement on 2019 Novel Coronavirus (COVID-19)', *Scientific Advisory Group for Emergencies (SAGE): Coronavirus (COVID-19) response*, March. Available at: <https://www.gov.uk/government/groups/scientific-advisory-group-for-emergencies-sage-coronavirus-covid-19-response>.
- Skinner, R. L. and Hodges, M. M. (2006) *A Performance Review of FEMA's Disaster Management Activities in Response to Hurricane Katrina*. Department of Homeland Security, Office of Inspections and Special Reviews. Available at: https://www.oig.dhs.gov/assets/Mgmt/OIG_06-32_Mar06.pdf.