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**Research Report**

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## Dealing with the costs of the COVID-19 pandemic – what are the fiscal options?

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### Abstract

The main problem facing policymakers during the corona virus pandemic is how to mitigate its humanitarian and economic costs. Doing so invariably involves trading off some costs against others as well as short-term against longer-term consequences. We provide an overview of economic literature that is relevant for understanding these trade-offs in the context of the current pandemic. We also discuss a range of fiscal measures that can be adopted with the aim of achieving the preferred trade-offs at lowest cost.

**Keywords:** Pandemics; economic costs; COVID-19; fiscal policy.

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# 1. Introduction

Pandemics are associated with large-scale humanitarian and economic costs, and the current COVID-19 pandemic appears to be no exception. Public sector policies can mitigate and reduce some of these costs, albeit at the expense of incurring others. For example, strict containment policies reduce the number of contagion cases, but impose large negative supply and demand shocks on the economy that can have both temporary and lasting effects. Supportive fiscal measures can mitigate some of the effects, but impose a larger public debt burden on future generations. This suggests that policymakers face important trade-offs, and understanding them is crucial for choosing the appropriate policy actions today.

In this article, we provide an overview of results in the literature that help to clarify the different economic costs and trade-offs that pandemics might entail. While much of the literature focuses on short term costs, which are directly attributable to the pandemic, we also pay attention to potential long term costs. Drawing on these general lessons, we make some qualitative predictions for how the COVID-19 pandemic, specifically, is likely to affect the Finnish economy. Based on this assessment we then highlight various policy options for addressing some of the key issues that are likely to arise.

Our analysis should be viewed as a modest attempt to structure thinking about the broad range of economic issues that have been raised in the literature in relation to pandemics. At the same time, readers should be aware of the obvious limitations. By their very nature, pandemics are rare events implying that not much data exists that help quantify their short- and long-term impacts. Undoubtedly many predictions will turn out to be inaccurate, and much will be learnt from the current pandemic as it progresses.

The rest of the article is structured as follows: next two sections review the literature on the short- and long-term costs of pandemics, respectively. The fourth section relates this literature to the current COVID-19 pandemic. The fifth and sixth sections discuss various policy options.

## 2. Short term economic costs of pandemics

The short term economic impact of a pandemic stems from three channels: (1) a temporary drop in productive capacity (e.g. supply of labor and productivity due to suboptimal working conditions) which is then propagated and amplified by (global) supply chains and complex production networks, (2) reduced aggregate demand due to preventive and containment policies, and (3) reduced current and expected demand due to pessimistic expectations and uncertainty.<sup>1</sup>

A rapidly growing literature that assesses the effect of the current pandemic favors the view that it reduces demand more than it disrupts supply.<sup>2</sup> The estimated overall economic costs of the crisis from these channels are sizable with predicted average global slowdown in growth ranging from 0.5% to as much as 10% for some countries.<sup>3</sup> Estimates from the OECD suggest that these declines are predominantly due to demand and uncertainty channels (Boone et al., 2020).

While the effects of the pandemic on disrupting supply is widely perceived to be temporary, the globalized nature of production networks imply that disruptions in supply can easily transmit across countries and hence become amplified. Baldwin and Tomiura (2020) note

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<sup>1</sup> See e.g. Baldwin and Weder di Mauro (2020a, 2020b) and the subsequent articles in the VoxEU eBooks.

<sup>2</sup> These include Atkeson (2020), Baker Farrokhnia, Meyer, Pagel and Yannelis (2020), Eichenbaum et al. (2020), Stock (2020), and many sections in Baldwin and Weder di Mauro (2020a, 2020b). Country-specific analyses include Fang et al. (2020), Faria-e-Castro (2020), Simola and Solanko (2020), and many sections in Baldwin and Weder di Mauro (2020b). See also a recent survey of global economic experts here <http://www.igmchicago.org/surveys/coronavirus-2/> as well as Guerrieri et al. (2020).

<sup>3</sup> See e.g. Boone et al. (2020), McKibbin and Fernando (2020), and Ma et al. (2020). These estimates are conditional on assumed scenarios on preventive and containment measures.

that the largest global economies, which sit at the center of global trade networks, are hardest hit by the pandemic. Hence, the economic effects could easily transmit to other economies through supply chain contagion. They also note that the drop in global trade during the Global Financial Crisis could serve as a useful benchmark for the effects of the pandemic through this channel.

By and large, recent studies show that the economic cost of the pandemic can increase with more stringent preventive and containment measures. This is largely due to the demand channel. Baker Farrokhnia, Meyer, Pagel and Yannelis (2020) find that the pandemic triggers an initial increase in expenditures followed by an overall decline in spending. They find that greater levels of social distancing and other containment measures are associated with larger drops in spending especially in the restaurant and retail services sectors.

Significant decreases in sales and profits will result in financial difficulties for many businesses. It is, for instance, well known that Small and Medium sized Enterprises (SMEs) are more dependent on internal finance (e.g. Carpenter and Petersen (2002)) and are therefore more vulnerable to banking and trade credit disruptions, as well as, temporary income shocks. This consequently increases the likelihood of cascading bankruptcies which can result in largescale layoffs. In turn, job losses and reduced income for some households feed back into the drop in demand. Numerous accounts in afflicted countries across the globe attest to these effects.

Finally, pandemics can also affect the ease of financing for firms through their impact on stock markets. Baker, Bloom, Davis, Kost, Sammon, and Viratyosin (2020) find, through text-based analysis, that news about the current pandemic has emerged as the most dominant driver of U.S. stock market fluctuations. Further, results in Ramelli and Wagner (2020) suggest that the stock market reactions to pandemic news imply that investors are wary of economic amplification and contagion through financial channels.

### 3. Long term economic costs of pandemics

Like most pandemics in history, the COVID-19 global pandemic will probably also have some lasting negative consequences for the economy.<sup>4</sup> These can arise from a number of sources such as (i) reductions in the labor force due to mortality and morbidity, (ii) lost physical and human capital due to bankruptcies and long spells of unemployment, (iii) changes in risk behavior and preferences, (iv) trade disruptions, and (v) risks to private and public debt sustainability.

One key channel through which pandemics can have longer term consequences is their potential effect on the capital labor ratio. If part of the labor force dies in the pandemic, the capital labor ratio will increase. This should in turn lower the real (inflation adjusted) return on capital and increase the real wage rate. This is indeed the key finding in a recent study by Jorda et al. (2020), who look at aftermath of 12 major pandemics<sup>5</sup> since the 14<sup>th</sup> century. They find that pandemics gradually lower the real interest rate by up to 2 percentage points during the first 20 years, followed by a recovery for the next 10 years. In contrast, real wages tend to rise by up to 5-10 percentage points during the same period.<sup>6</sup> That such effects can be so long lasting is not surprising if already installed capital has a long lifespan and is run down rather than dismantled.

A second key channel is destruction of capital. If the big demand and supply shocks during the pandemic lead to widespread and possibly cascading bankruptcies, the loss of capital can be sizable. And this may well prevent a return to the pre-pandemic growth trajectory for several reasons. For one, the discovery and adoption of new technologies depends on re-

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<sup>4</sup> Historical comparisons to past pandemics such as the plague or the Spanish flu are done in Barro et al. (2020) and several sections in Baldwin and Weder di Mauro (2020a).

<sup>5</sup> Defined as pandemics where more than 100,000 people died.

<sup>6</sup> Similar effects would emerge in case pandemics lead to increased morbidity in the labor force. Almond and Mazumder (2005), for instance, document that reductions in fetal health during a pandemic from e.g. malnutrition can lead to reduced educational attainment, increased rates of disability, lower income, and lower socioeconomic status.

search and development which can be pro-cyclical (see e.g. Anzoategui et al. (2019)). Moreover, recessions and crises disproportionately affect small and medium sized enterprises (SMEs) that tend to be more innovative (see e.g. Acemoglu et al. (2018) and Schmitz (2020)). Lost capital in this segment of the firm distribution might be harder to recover.

Pandemics also affect certain sectors more severely than others. For instance, financial and insurance activities, transportation and storage, accommodation and food service activities, and certain services face large-scale losses, whereas losses might be less severe in other sectors.<sup>7</sup> This can lead to capital misallocation which is associated with permanent losses.

The effects of lost capital mirrors the ones from lost labor, and include stagnant real wages, increasing returns to capital, and rising unemployment. In addition, if productivity declines for endogenous growth reasons, losses will accumulate over time. It is, for example, unclear how quickly new startup firms can replace a sizable shortfall in capital. In the worst case, this will take significant time and therefore lead to long-term unemployment and additional costs in the form of lost human capital.

The third way in which pandemics can have long term effects is through changes in risk perceptions and preferences.<sup>8</sup> Pandemics can lead to greater awareness of both the economy wide and sector specific risks that they entail (Fan et al. (2018) and Bloom et al. (2018)). Similarly, pandemics can increase the precautionary savings of households.<sup>9</sup> Together, these forces reduce demand and lead to higher costs of business in affected segments. Ultimately this can lead to a rebalancing of capital, with implications for jobs at risk and prices.

Pandemics can also have long-lasting adverse impacts on trade both through political and economic channels (see e.g. Kerr (2009) and ECB (2016)).<sup>10</sup> For instance, the EU imposed a 10 year ban on British beef after the mad cow disease (Bloom et al. (2018)). Pandemics can also be expected to increase trade costs as well as disruptions to global value chains as individual firms in the chain go bankrupt. Together, these forces reducing the overall scope of trade and increase the cost of production. On the other hand, pandemics can also create opportunities for industries that recover their productive capabilities relatively quickly to replace impaired parts of global value chains.

The last channel through which pandemics can have lasting effects on economic activity is public sector indebtedness. While large-scale fiscal measures are undoubtedly needed – and indeed desirable – to stave off the worst near-term effects of a pandemic, it is clear that that this will lead to a massive increase in public sector debt levels relative to GDP. This can in turn have many negative consequences.

First, increases in public debt to GDP reduces fiscal space to handle future crises and increases the likelihood of sovereign default. The scope for public indebtedness is not unlimited but curtailed by the private sectors trust in the government's willingness and ability to raise future tax revenues. If this trust is eroded, the private sector will have to be compensated by higher interest rates in order to be persuaded to hold public debt. This makes raising new debt expensive or even impossible. Taken to the limit, this will eventually lead to a situation where the sovereign either has to drastically (and possibly disorderly) reduce the size of the public sector, default on its debt or inflate it away.<sup>11</sup> But such defaults are costly and come in the form of a temporary loss of access to international capital markets and more costly borrowing after the default (see e.g. Cruces and Trebesch (2013) and Tomz and Wright (2013)).

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<sup>7</sup> See e.g. Rassy and Smith (2013); Joo et al. (2019); Rosselló et al. (2017).

<sup>8</sup> Rachel and Summers (2019) provide a macro model where e.g. the patience of societies depend on the population structure.

<sup>9</sup> Ferrero et al. (2019) and Rachel and Smith (2017) provide models where the age-structure of the population matters for macroeconomic outcomes. In these models, societal impatience increases in aging societies. Moreover, the old consume different consumption baskets (e.g. containing more healthcare services) than the young.

<sup>10</sup> Bloom et al. (2018) and Lustig and Mariscal (2020).

<sup>11</sup> For recent theoretical work on sovereign debt see Gennaioli et al. (2018) and references therein.

Second, since human remaining lifespans can be shorter than sovereign debt maturities, increased public indebtedness involve transfers from younger generations to older.<sup>12</sup> As such, this can lead to increased savings and/or higher expectations of future inflation by the most economically viable segments of the population. This can lead to reduced demand, emigration of high skilled labor, and future tax distortions.

## 4. The COVID-19 pandemic and the Finnish economy

Which of the many economic concerns associated with pandemics are likely to be the most relevant for Finland in the current COVID-19 crises?

In its current form, the virus seems unlikely to result in large increases in the capital labor ratio (point (i) above). The reason is that its severity increases with the age of those affected. For instance, the U.S. Department of Health and Human Services (2020) estimates that the upper bounds for case-fatality rates are 0.2% for 20-44 year olds, 0.8% for 45-54 year olds, and 2.6% for 55-64 year olds. These mortality rates make it unlikely that a large proportion of the working age population will be lost to the COVID-19 pandemic. Moreover, the strong public health responses to the virus are likely to reduce the number of cases, and hence the total number of fatalities. Consequently, we should not expect as large increases in real wages, reductions in unemployment, and reductions in the return on capital as has been the case in historical pandemics. For the same reasons, we should expect faster recovery in supply, provided that early policy measures prevent large-scale bankruptcies and sectorial hysteresis.

The biggest risk from the COVID-19 pandemic is destruction of capital as a result of the strong containment measures that have been adopted. If the containment measures are held in place for a prolonged time without sufficient public support for vulnerable sectors, bankruptcies and therefore unemployment will likely start to rise dramatically. For instance, Huovari et al. (2020) estimate that a large fraction of the 50,000 firms and 200,000 in the accommodation and food service and personal service sectors might be at risk in such a scenario. Other sectors are also exposed to lesser or greater extent, and more than 100,000 workers have already been furloughed as a result of the dramatic collapse in demand.

The sectorial vulnerabilities are exacerbated by the external environment. Finland is a small open economy and therefore heavily dependent on external demand and global value chains. Ali-Yrkkö and Kuusi (2020) estimate that Finland will face major disruptions to supply chains over the near-term. In certain sectors, such as electronic components and medical products, dependency on intermediary imports can be as high 80%. It is clear that restoring impaired supply chains can take significant time and constitute a major challenge going forward. Finnish exports will also see a sharp reduction in demand as containment measures in other countries start to bite.

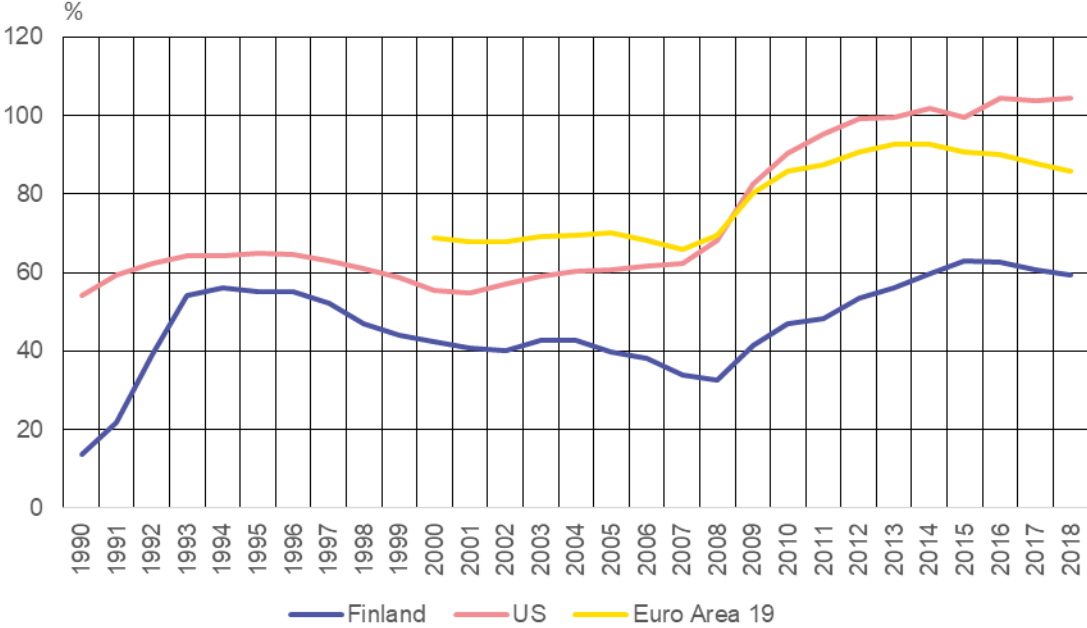
A secondary issue in the wake of the pandemic is weakened household demand, which might prevent a fast recovery. The main reasons are that lost household income is not necessarily compensated by large wage increases later on and that households increase their precautionary savings due to changes in risk perception.

Avoiding the threats of bankruptcies and weakened domestic demand requires a massive fiscal response. Hence, one of the most lasting effects of the COVID-19 pandemic is likely to be a sizable public debt overhang. Unfortunately, fiscal space in Finland has already been eroded for much of the past decade as the Finnish government has maintained sizable budget deficits in response to the global financial crisis. During this period, Finnish debt-to-GDP rose from less than 40% to about 60% currently. This number is not excessively large by international standards (Figure 1), but it will raise substantially as a consequence of the expected drop in GDP combined with the large fiscal packages. Whether or not this becomes a big problem depends on the future terms of credit for the Finnish government. While public borrowing costs are currently low against the backdrop of the recent ECB quantitative easing program, this does not necessarily predict that they stay low also in the future.

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<sup>12</sup> Rachel and Summers (2019) analyze demographic model of public debt in which the Ricardian Equivalence does not hold.

**Figure 1. Public debt to GDP (in per cent)**



Source: Statistics Finland, Eurostat, U.S. Department of Treasury, U.S. Bureau of Economic Analysis, Macrobond.

### 5. Policy responses in the midst of pandemic

Given the adverse economic implications of the pandemic outlined in the previous sections, decisive and timely economic measures are necessary to mitigate them. Fiscal policy plays a central role in the policy mix. For instance, Benassy-Quere et al. (2020) among others have called for and proposed policy responses to target specific channels and at specific phases of the crisis.<sup>13</sup>

In the peak phase of the crisis when preventive and containment policies are in place, emergency support is needed to "keep the lights on." This is necessary in order to prevent domino and feedback effects which can exacerbate and prolong the downturn and ultimately raise the fiscal cost of the crisis.<sup>14</sup>

Broadly speaking, fiscal policy prescriptions for immediate implementation can be categorized into (1) providing additional funds for healthcare services, (2) support to households via direct cash transfers or subsidies, temporary unemployment benefits, and incentives for firms to retain workers such as through subsidizing the wage bill (e.g. through short-work programs such as the German *Kurzarbeit*), and (3) financial support to businesses via tax relief and concessional credit lines. While supporting public healthcare services is the immediate and primary concern, measures to support firms, especially small businesses, and households should also be prioritized by fiscal policy.<sup>15</sup>

Fiscal measures may be needed to bring immediate financial relief to firms.<sup>16</sup> These can take the form of tax credits and deferrals, (potentially subsidized) bridge financing and credit lines, as well as measures to support and maintain employment. Nevertheless, monetary and

<sup>13</sup> See also other contributions in Baldwin and Weder di Mauro (2020b) for other examples of broad policy recommendations.

<sup>14</sup> See e.g. Saez and Zucman (<https://econfp.org/wp-content/uploads/2020/03/20.Keeping-Businesses-Alive.pdf>) and Gourinchas (2020).

<sup>15</sup> A recent UK survey of experts suggest that the most effective policy to combat the effects of the pandemic is government credit support for businesses followed by unemployment benefits. <https://cfmsurvey.org/>

<sup>16</sup> For macro-prudential and monetary policy implications, see also relevant in Baldwin and Weder di Mauro (2020a, 2020b). See also Brunnermeier et al. (2020) for proposals on liquidity facilities for Europe ([https://scholar.princeton.edu/sites/default/files/markus/files/covid\\_liquiditylifeline.pdf](https://scholar.princeton.edu/sites/default/files/markus/files/covid_liquiditylifeline.pdf)).

macro-prudential policy play a supplementary role in ensuring the well-functioning of financial markets and access to private credit by businesses. When providing financial relief to firms, De Vito and Gomez (2020) find that bridge loan policies to augment business cash holdings are more effective than tax deferral policies.<sup>17</sup>

In light of the multiple channels through which the pandemic impacts the economy, financial distress in the private sector may not just be a liquidity problem but also one of solvency. In this case, a fiscal stimulus is needed to augment policies designed to provide liquidity and mitigate disruption in financial markets. A key conceptual difference is that a liquidity facility, such as a bridge loan, is eventually repaid and is thus fiscally neutral while a subsidy entails a fiscal cost. The appropriate policy mix minimizes the risk of moral hazard and excessive bailouts while limits the cost to the government. This can, for instance, be achieved by liquidity support via bridge financing to firms.

In addition, fiscal measures may be needed to provide financial relief to households. First, policies which subsidize the wage bill and incentivize firms to retain workers can mitigate unemployment and loss of income to households. Cahuc et al. (2018) find that the cost of policies such as the German *Kurzarbeit* may be low relative to the benefits in terms of jobs saved. Second, direct transfers to households have been proposed which compensate for unemployment or reductions in wage income. Finally, some have also called for unconditional cash transfers to households in order to spur demand. Model-based analysis suggests that borrower households benefit the most from unemployment insurance policies (Faria-e-Castro, 2020).

Overall, state-contingent (i.e. conditional on ex-post outcomes) subsidies, which grant financial support to firms who maintain their workforce, may be more appropriate than blanket subsidies. Drawing on lessons from the Global Financial Crisis and the Great Recession, Fujita, Moscarini, and Postel-Vinay (2020) argue for carefully crafted and targeted policies meant to stave off layoffs.<sup>18</sup> This is to prevent moral hazard, unintended bailouts, crisis profiteering, and excessively increasing the fiscal cost of the stimulus. State-contingent subsidies also have the benefit of minimizing the need to gauge the appropriate scale of the policy ex-ante as the situation ex-post will determine the actual extent of the subsidy. On the other hand, it also means that the cost to the government will also be contingent on the scale of the crisis. Blanket subsidies may induce moral hazard in that firms may fire and then rehire workers to take advantage of such policy measures.

A particularly interesting state-contingent policy in this regard has been proposed by Greg Mankiw.<sup>19</sup> The idea is that the firm or household receives funds today in return for a future payment, e.g. in 1 or 2 years. The amount to be repaid may then be subject to a discount or subsidy depending on how the crisis has affected the recipient. The subsidy can be generous, say, if the household loses a large proportion of its income or the firm experiences a substantial drop in sales while maintaining its workforce.<sup>20</sup>

Channeling the stimulus through the private banking sector enhances the speed and efficiency through which funding is transmitted to households and the non-financial private sector.<sup>21</sup> Existing financial linkages and networks between banks and households and firms

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<sup>17</sup> This result is based on scenario analysis using 2018 balance sheet information of 14 thousand listed firms from 26 countries. If the drop in demand due to the pandemic translates to a 75% drop in sales, the average listed firm will run out of cash in about one year and about a third of firms would be illiquid within six months.

<sup>18</sup> <https://voxeu.org/article/labour-market-policy-response-covid-19-must-save-aggregate-matching-capital>. In an earlier article (Fujita and Moscarini, 2017) the authors find that some workers who were laid off during the Global Financial Crisis were eventually recalled by their former employers to do the same job they left. This holds even for some workers whose terminations were thought of as permanent.

<sup>19</sup> Blog post on March 23, 2020 at <http://gregmankiw.blogspot.com/>

<sup>20</sup> Further, firm subsidies could be additionally indexed to industry sales growth so that industries which are less affected by the crisis do not free-ride on the program.

<sup>21</sup> The stimulus funds itself are aimed at and transferred to the non-financial private sector. Engagement with the private banking sector can take the form of (1) providing guarantees to (potentially subsidized and conditional) commercial bank-issued credit lines to firms and households who in turn receive (conditional) tax credits and subsidies which serve as collateral for the credit lines and (2) ensuring that private banking sector has sufficient liquidity to meet demand.



should be efficiently utilized to rapidly direct funding to individual firms. As banks obtain fees from such activities, this can enhance financial stability by providing much-needed revenues to the financial sector that is already likely to suffer large loan losses due to the crisis. On the other hand, there is also the risk that bank discretion can lead to unintended credit allocations or channel a potentially excessive amount of the stimulus to "bailing out" the banking sector. Thus, it is crucial that the stimulus package contains objective and well-defined guidelines to the extent possible.

Finally, clear communication of policies can also boost private sector confidence and can mitigate negative feedbacks between pessimistic expectations and demand. For instance, Binder (2020) shows that news of the Fed policy response to the pandemic makes consumers more optimistic on unemployment and inflation. Enders et al. (2019) find that German firms' expectations are also shaped by monetary policy announcements.<sup>22</sup> From this perspective, doing too much is better than doing too little. As Gopinath (2020) and Furman (2020) argue, although policy mistakes are inevitable, communicating timely, coherent, and sufficiently aggressive policy responses is necessary in order for them to be effective.

## 6. Policy responses for the long term

If large-scale bankruptcies during the immediate pandemic phase can be avoided, reduced demand is likely to be the biggest problem that firms face in the longer term, especially in specific sectors. This calls for continued and significant fiscal stimulus to boost demand (e.g. direct transfers to households and firms as well as targeted limited-time VAT and other tax cuts) to help avoid hysteresis effects and aid to recovery phase.<sup>23</sup> Also, different measures to reduce default in the near-term after the health crisis are called for. For example, temporary relief for banks from the agreed framework to reduce NPLs in the EU has been suggested.

The COVID-19 pandemic has led to a greater awareness of both the economy-wide and sector-specific risks that such events entail and their associated costs.<sup>24</sup> One way to mitigate these costs is to provide greater insurance.<sup>25</sup> On the public side, the need for such insurance can be reduced by building capacity for pandemic prevention (e.g. emergency legislation, international coordination, hygiene standards, and immunization), detection (testing procedures, real-time surveillance), and response systems (e.g. spare emergency healthcare capacity).<sup>26</sup> This also prepares the ground for economically less costly "test, track, and isolate" strategies that may be preferable to containment in the long run. Beyond such measures, international risk sharing and coordination (e.g. centralized stockpiling of vaccines, etc.) would ensure that resources can be deployed where they are most beneficial.

Greater international policy coordination is also needed in trade. Facilitating the restoration of global supply chains in the immediate recovery phase should have high priority. For instance, temporary removal of barriers to trade, such as tariffs, can be considered in industries that are heavily dependent on global supply chains.

While large-scale fiscal measures are needed – and indeed desirable – both during and in the near aftermath of the COVID-19 pandemic, it is also clear that public sector debt level will rise as a consequence. Although some measures may end up being fiscally neutral (e.g. credit lines and liquidity facilities which are eventually repaid), the fiscal stimulus is expected to entail a significant cost to the government. For example, Benassy-Quere et al. (2020) estimate these measures to cost about 2% of GDP for the case of a one month lockdown period in Europe while Garicano (2020) proposes a EUR 500 billion package. This can lead to concerns about public sector debt sustainability, put strains on international economic cooperation, and generate inflationary pressure.

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<sup>22</sup> See also Mertens et al. (2020) and Coibion et al. (2020). See as well Ambrocio (2020) who shows that fluctuations in consumer sentiment in Europe resemble demand shocks while heightened household uncertainty leads to higher unemployment and inflation.

<sup>23</sup> See e.g. several contributions on Baldwin and Weder di Mauro (2020b).

<sup>24</sup> Ramelli and Wagner (2020); McKibbin and Fernando (2020).

<sup>25</sup> von Peter et al. (2012).

<sup>26</sup> Bloom et al. (2018).

How should the fiscal stimulus be financed? Gali (2020a, 2020b) proposes a money-financed stimulus and argues that it is more effective than a debt-financed stimulus although the difference shrinks at the effective lower bound. He also stresses that care must be taken in its implementation in order to preserve central bank credibility. A money-financed stimulus shifts some of the economic risks of a large scale fiscal stimulus from debt sustainability to inflation.

On the other hand, Krugman (2020) argues that a large-scale debt-financed stimulus is sustainable in a low interest rate environment. While increasing public debt burdens and international risk sharing is desirable to mitigate the immediate economic fallout from the pandemic, credible state-contingent commitments to reduce debt burdens in the medium to long-term may be desirable to prevent issues with public debt sustainability and strains to economic cooperation.<sup>27</sup> Further, specifically for Europe and given limited fiscal space in some countries, many experts call for a unified European fiscal response especially in the area of financing the stimulus through the issuance of a Euro-wide pandemic bond (in tandem with ECB accommodation).<sup>28</sup>

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<sup>27</sup> For example, this might entail transfers from countries with more to those with less fiscal space to prevent long lasting hysteresis effects. The same applies more broadly at an international level. See e.g. Alesina and Giavazzi (2020) and other relevant contributions in Baldwin and Weder di Mauro (2020b), among others.

<sup>28</sup> This view is shared by many experts and endorsed in many contributions to Baldwin and Weder di Mauro (2020b) among others.

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