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Fiscal Policies and Household Consumption during the COVID-19 Pandemic: A Review of Early Evidence

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Abstract

We review early evidence on how household consumption behavior has evolved over the pandemic and how different groups of households have responded to fiscal stimulus programs. Due to the scarcity of evidence for Europe, our review focuses on evidence from the US. Notwithstanding the institutional and demographic differences, we highlight generalizable findings and challenges to the design of stimulus policies from the pandemic. In conclusion, we identify several open issues for discussion.

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Keywords: Household Finance, Consumption, COVID-19, Stimulus

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1   Introduction

The spread of the COVID-19 pandemic starting in early 2020 along with policy measures put in place to contain the virus have led to a drastic decline in economic activity and an increase in unemployment figures across countries. Reductions in private consumption have accounted for the major part of the economic slowdown. In response, governments across the globe have enacted fiscal stimulus measures in record speed and of unprecedented volumes in order to aid individuals and businesses to weather the crisis. The measures fall into three broad categories: (1) Increased spending on health care in the effort to fasten the development of cures and vaccines, and to increase hospital capacities. (2) Assistance to businesses of various forms such as grants to cover fixed costs, low-interest loans, loan guarantees, or the delay of tax deadlines. (3) Income assistance to individuals in the form of direct cash transfers, income replacement within the scope of furlough schemes, or extended unemployment benefits (see Table 1) for an overview). The focus of this paper is on the latter category.

At the heart of the debate about efficient fiscal policy responses to the pandemic-induced reduction in household consumption rests the question of whether it was mainly supply-side or demand-side factors that led to the decline in spending. Guerrieri et al. (2020) outline how supply-side and demand-side forces interacted in shaping private consumption during the pandemic.[1] Elaborating on this model, we identify five channels through which household consumption has been directly or indirectly affected during the pandemic (see Table 2 below).

Starting in March, many countries began to shut down contact-intensive sectors of the economy such as cafés, restaurants, nightclubs, sport centers, museums, or services related to travel. People were confined to their homes and instructed to limit their outside activities to shopping for essential goods, attending medical appointments, or going to work in case they are unable to work from home. This supply-side shock made some goods and services no longer accessible, mechanically weighing on private consumption (channel 1).

Employees in the affected sectors witnessed increasing rates of job losses and painful

cuts to their incomes. This asymmetric exposure to the crisis is aggravated by the fact that workers in sectors that were most affected by the crisis generally earned lower incomes and had only little liquidity buffers to begin with. In the presence of liquidity constraints, affected workers cut back on consumption also in sectors that remained open, generating a shortage in aggregate demand that exceeds the initial supply-induced reduction in economic activity (channel 2a/2b).[2]

Theory caveats that standard fiscal policies may be less effective in stimulating household spending in such an environment. Given the fact that parts of the economy are shut down, the standard logic behind fiscal multipliers is muted: While fiscal stimuli will in particular re-ignite spending by households who lost their jobs or at least parts of their income, the extra spending will not end up in the most crisis-ridden industries precisely due to shut-downs, ultimately failing to generate new jobs and labor income. This curtails any second round effects normally implied by the standard Keynesian cross logic behind fiscal multipliers (Bayer et al., 2020; Guerrieri et al., 2020).

In addition to this supply side friction, consumers voluntarily reduced spending on goods and services, where the act of purchasing requires in-person physical contact and hence carries a higher risk of infection (channel 3) (Andersen et al., 2020b; Chetty et al., 2020). At the same time they increased spending on goods and services that did not require physical contact such as online shopping or that allowed them to work and spend leisure time at home such as video conferencing and media streaming (channel 4). Thus, in the presence of a pandemic, health concerns may weigh on households' marginal propensity to consume out of additional liquidity, further reducing the effectiveness of traditional fiscal stimuli targeting shocked industries.

Finally, given the unprecedented nature of the pandemic and the uncertainty related to its length and severity, people may have resorted to precautionary savings and thus less spending then during previous crises (channel 5) (Chetty et al., 2020; Coibion et al., 2020).

In this paper, we review early evidence on how household consumption behavior has evolved over the pandemic and how different groups of households have responded to fis-

cal stimulus measures designed to spur consumption. Due to the scarcity of international evidence, our review focuses on the US. However, we highlight general findings and challenges to the design of stimulus measures, which plausibly also apply to other developed economies.

Economists were quick to attend to the effects of the pandemic on households and the economy, producing a large and still growing body of literature studying COVID-related issues. One strand of papers has started to use high-frequency transaction-level data provided by banks and other financial service firms to study the dynamics in household spending over the pandemic. While these data sets come with the caveat that they are not representative of the entire population, their high-frequency and granularity allow to explore the timing and the heterogeneity in individuals' responses to the pandemic in great detail.[3]

To set the scene, section 2 summarizes the evidence from these data sources on how different groups of US households have been affected by the pandemic and look into how shocks to income and job losses correlate with changes in consumption and savings behavior. Understanding the link between the dynamics in households' job status, disposable incomes, and spending, as well as dissecting changes in consumption both by sector of spending and household income category helps to gauge the relative importance of supply-side and demand-side drivers in shaping household consumption during the pandemic. More, the observed heterogeneity provides a first indication on which households are most likely to respond to fiscal stimuli.

In section 3 we discuss major pandemic-related factors that prevent traditional fiscal stimuli from being fully effective during the pandemic. We then look into how direct fiscal transfers and social insurance programs in the form of extended unemployment benefits have helped stabilize spending by US households over the pandemic. We again pay particular attention to the heterogeneity in the response to fiscal stimulus payments across groups of households. The evidence suggests that, at least over the short run, fiscal stimulus payments are most effective when targeting those individuals who are most likely to face liquidity constraints as a result of the crisis, and who therefore exhibit

high marginal propensities to consume.

Section 4 raises several areas for discussion down the road, as the virus continues to spread and many first-round stimulus programs start to peter out. Section **??** concludes.

2   Changes in consumer spending over the pandemic

As the number of infections picked up by the end of February 2020, the governments in the US and Europe declared national emergencies and enacted stringent stay-at-home-orders. Many contact-intensive businesses such as bars, restaurants, nightclubs, theaters, sport arenas, or convention centers were shut down and remained closed at least throughout April. Schools were closed and large-group gatherings were prohibited.[4] According to official data, consumption during the second quarter of 2020 was lower by about 10 percent in the US and lower by 11 percentage points in Germany, compared to the same period during the previous year. Other European countries including France, Spain, Italy, or UK saw even more drastic declines in spending. Universally across countries, spending on services (e.g. hospitality, hair-dressers, travel, entertainment) was affected most severely. Moreover, durable goods consumption (e.g. cars, home appliances, consumer electronics) drastically declined in many countries (see Table 1).

Several studies have used novel high-frequency transaction-level data to study the evolution of household spending during the pandemic. We focus on evidence on US households (Bachas et al., 2020; Baker et al., 2020; Casado et al., 2020; Chetty et al., 2020; Karger and Rajan, 2020). Surico et al. (2020) provide similar evidence on households in the UK, Andersen et al. (2020a) for Denmark, Bounie et al. (2020) for France, and Carvalho et al. (2020) for Spain.

Heterogeneity by spending category   In line with national account data, evidence from different microdata sets suggests that reductions in non-essential spending accounted for the major part of the decline in US household consumption, as individuals cut back on restaurant visits, hotel accommodations, clothing, and consumer durables (Bachas et al., 2020; Baker et al., 2020; Chetty et al., 2020; Karger and Rajan, 2020).[5] Among essential categories, declines were most pronounced for ground transportation, fuel, and healthcare.

Notably, the composition of spending cuts differs sharply from previous crises, when it was spending on durable goods that saw the most drastic declines. Essential spending saw large spikes in early March as households increased spending on groceries and pharmacies to build up stocks (Bachas et al., 2020; Chetty et al., 2020).

Intuitively, most of the decline in consumption resulted from reduced spending on goods and services that require in-person physical interaction, thus carrying an increased risk of infection.[6] Several factors related to the pandemic add to this result. First, supply-side policies such as stay-at-home orders or business shut-downs temporarily frustrated the consumption of some goods and services (e.g. restaurants, bars, hairdressers). Second, many households voluntarily cut back on their demand for contact-intensive goods and services due to health concerns (see below).

Heterogeneity by groups of the population   The initial economic effects of the pandemic on households have been extremely unequal across groups of the population, resulting from both differential exposure to the pandemic as well as differences in financial vulnerability (Kaplan and Violante, 2014). A central determinant of individuals' exposure to the pandemic has been their occupation. As a result of social distancing measures and business shut-downs, workers in occupations that mandate physical personal interaction and do not allow to work remotely witnessed particularly large job losses and drops in income. These individuals generally earn lower wages and dispose of little wealth and low buffers of liquid assets to begin with.[7] Higher-wage employees tend to work in sectors that require little social interaction (e.g. academics, lawyers, and finance professionals) and easily can be done from home. Consequently, they experienced smaller declines in income (Cajner et al., 2020).

During the initial stages of the pandemic, households across the income distribution drastically reduced their consumption. Surprisingly, however, while labor incomes have fallen more and have remained persistently low for low-income households, it has been high-income households that disproportionately cut back on consumption in immediate response to the pandemic (Bachas et al., 2020; Chetty et al., 2020).[8] Chetty et al. (2020) estimate that top-quartile households accounted for 39 percent of the aggregate spending

decline after the pandemic hit, while households in the bottom quartile accounted for only 13 percent of the decline. This is likely to be primarily driven by non-essential spending occupying a larger fraction of total spending for higher-income households.[9]

Spending started to pick up again in mid April, around the time that fiscal stimulus payments were handed out to US households. The recovery in spending was more pronounced for low-income households, pointing to the fact that stimulus payments were particularly important for restoring the ability of low-income workers to maintain spending during the pandemic. Spending by top-income-quartile households was much slower to recover (Bachas et al., 2020; Chetty et al., 2020). One reason for this puzzling result is that a much higher share of spending by high-income households falls on non-essential goods and services that have temporarily impossible to access due to supply-side restrictions or simply unattractive because of health concerns.

Overall, the above evidence suggests that a central channel that has guided policy response to earlier recessions – a fall in consumer spending due to a decline in purchasing power – has not been the single most important driver of the decline in household spending during the early phases of the pandemic. Rather, supply-side restrictions to goods and services requiring physical personal interaction as well as health concerns led consumers to further reduce their demand.[10] This does not imply that labor market disruptions did not weigh on consumer spending. However, it highlights that factors specific to the pandemic are relevant in shaping households' behavior during the current crisis and thus need to be taken into account in designing policy measures that aim at increasing consumer spending.

3 Fiscal policy and household spending during the pandemic

Income assistance to individuals during the pandemic has come in the form of direct cash transfers, income replacement within the scope of furlough schemes, applied predominantly in European countries, or extended unemployment benefits, as in the US. These first-round stimulus payments were designed to help households to live through

the lock-down and to maintain their spending on food and basic necessities, and to cover their bills. Moreover, the additional liquidity injected into household balance sheets via the different policy schemes should allow household consumption to strongly pick up once the economy reopens. Finally, the extra cash may also have provided psychological reassurance, especially to individuals at the bottom of the income distribution.

How effective have these policies been in stabilizing household consumption and economic activity? In this section we discuss several factors related to the pandemic that may prevent fiscal stimulus measures from being fully effective during a pandemic. We subsequently review early empirical evidence on how households consumption in the US has responded to fiscal stimulus measures.

3.1 Pandemic-related obstacles to fiscal stimulus policies

In theory, fiscal policies transferring additional liquidity to households are meant to replenish household financial resources in order to increase their spending, ultimately translating into more production and employment in the sectors the additional money is flowing into (multiplier effect). How effective these stimulus payments are depends on the fraction of the transfers that households choose to spend on consumption, their marginal propensity to consume (MPC) (Parker et al., 2013). Two main factors suggest that this mechanism is impaired during a pandemic.

Shut-downs, re-openings and social distancing measures   Guerrieri et al. (2020) emphasize that the standard logic behind fiscal multipliers is not operative in a pandemic. In particular, as long as parts of the economy are shut down or subject to social-distancing measures that reduce activity, there are no second round effects. Individuals in affected sectors benefit from direct transfers and have high marginal propensities to spend out of it, as their consumption has likely been constrained by losses to their labor incomes. However, none of the spending by households or the government that has been induced by the stimulus will come back to them as income. Since the stimulus money cannot be spent in sectors that are closed, all stimulus money flows as income into the pockets of workers in sectors that remain open. Existing evidence on spending dynamics in

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response to stimulus payments dissected by sector suggests that little of the stimulus-induced spending went to industries that were most severely affected by the pandemic (Baker et al., 2020; Chetty et al., 2020; Coibion et al., 2020), as we discuss below. This suggests that traditional fiscal stimulus is less effective in a recession caused by a supply shock.

Health concerns In addition, many individuals voluntarily reduced consumption of goods and services that require in-person physical contact and hence carry a higher risk of infection (Andersen et al., 2020b; Chetty et al., 2020). Estimates suggest that about 40 percent of household spending is associated with getting into contact with other people and 5 percent is accounted for by dining out.[11] Since in the presence of a pandemic, health concerns may weigh on households' marginal propensity to consume out of additional liquidity, further reducing the effectiveness of traditional fiscal stimuli and dampening the hoped-for rapid recovery after businesses re-open.

As the virus keeps spreading, individuals may remain nervous of crowds for some time into the future. Goolsbee and Syverson (2020) use cellphone records data on customer visits to more than 2.25 million individual businesses across industries in the US to assess the importance of lock-down restrictions vs voluntary cuts to consumption due to health concerns. Comparing consumer behavior across boundaries with different policy regimes they find that legal shut-down orders account for only a modest share of the decline in economic activity. Moreover, the drop in consumer activity is strongly correlated to the number of local deaths from the virus, suggesting that it can be tied to the fear of infection. Declines in activities are also larger in places that were busier before the pandemic, consistent with consumers voluntarily avoiding establishments with higher potential transmission contacts. Similarly, Chetty et al. (2020) find that spending and employment in contact-intensive sectors already declined before shut-downs were enacted. Moreover, exploiting variation in the timing of the re-opening of the economy across US states, they document that re-openings had only a modest impact on economic activity.

3.2 Household response to fiscal stimulus payments: Evidence from the US

In this section, we review early evidence on the response of households to the receipt of fiscal stimulus payments. Availability of evidence thereby makes us focus on the US.

In response to the pandemic, the US government has enacted a stimulus package unprecedented both in size and in the speed with which it was implemented. The *Coronavirus Aid, Relief, and Economic Security (CARES) Act* that was signed into law on March 27th distributed about $2 trillion of federal funds to households and businesses through various channels.[12] The largest items aiming at boosting consumer spending have come in the form of both unconditional cash transfers, increases in unemployment benefits targeted to workers who lost their jobs, and, less directly, through a loan program to small businesses to cover payroll costs and reduce layoffs:

- **Direct cash transfers**: The majority of US households qualified for one-time payments of $1,200 per adult and an additional $500 per child. Payments were handed out with minimal regard for current income, wealth, and employment status. Income thresholds at which payments begin phasing out were very generous.[13] Payments were transferred to recipients via direct deposit or paper check starting on April 9th 2020.

- **Extended unemployment benefits**: The US government supplemented existing unemployment benefits with a fixed amount of $600 a week starting March 21 over a period of 13 weeks, ending on July 31. This supplement did not depend on a recipient's actual income prior to job loss and thus resulted in temporary replacement rates – i.e. the fraction of lost wage earnings recovered by the unemployment benefits – of above 100 percent for over three quarters of unemployed workers (Ganong et al., 2020). In particular, the $600 extension amounts to about 2.5 times the weekly benefits of the average recipient prior to the pandemic ($385).

- **Paycheck Protection Program (PPP)**: The US government reserved $669 bn for low-interest private loans to businesses to pay for their salaries and certain other

costs. These loans may be partially or fully forgiven if the business keeps its employee counts and employee wages stable, thus working as a employment subsidy.[14] The deadline for applications was initially June 30, 2020, and was later extended to August 8.

Overall, the evidence suggests that both the transfer programs (direct cash transfers and extended unemployment benefits) have stabilized aggregate consumption throughout the lock-down and in its immediate aftermath. Kaplan et al. (2020) estimate the different elements of the CARES Act increased consumption by around 6 percentage points compared to a situation without stimulus, concentrated over the period April-July 2020. 4 percentage points are coming from the PPP and the remainder from transfer schemes. Bayer et al. (2020) estimate the joint effect of supplements to unemployment benefits and unconditional stimulus checks under the CARES Act have reduced the output loss due to the pandemic by up to 5 percentage points relative to a scenario without stimulus, primarily the transfer was successful in stabilizing consumption. The effect is concentrated over the 6 months after implementation.

3.3 Consumption response to direct cash transfers

Economists were quick to study how US consumers responded to the receipt of fiscal stimulus payments. The majority of studies focuses on one of the above elements of the CARES act only. Among them, a handful of papers has focused on the consumption response to the receipt of direct cash transfers to households under the CARES Act.

In a large-scale survey of US consumers (Coibion et al., 2020), respondents on average report to have spend 40 percent of their stimulus payments over the roughly three-month period April 9th – when transfers started to be distributed – to mid-July, when the survey was fielded. Compared to household responses to previous one-time stimulus payments (e.g. in response to the 2001 or 2008 crises), the self-reported MPC of 40 percent is somewhat lower.[15]

Several papers have used high-frequency transaction-level data from private-sector institutions such as banks or fintech firms to study the response of US households to the disbursement of stimulus checks. The large granularity of these data sets and the

high-frequency at which the data is collected allow to precisely track the receipt of the stimulus money and to observe subsequent payment transactions. Evidence from these data sources show that average household consumption responded extremely quickly to the receipt of the stimulus (Baker et al., 2020; Chetty et al., 2020; Karger and Rajan, 2020). Baker et al. (2020), using data from a US non-profit account aggregation FinTech aiming to help families accumulate savings, estimate that eligible households increased their spending by about $0.30 per dollar of stimulus over the first 10 days of its receipt. Karger and Rajan (2020) use data from 16,000 debit and payroll card accounts and estimate an average MPC out of the direct cash transfers of 0.47 over the two weeks following on disbursement, after re-weighting their data to be representative of the US population.

While a comparison of the estimated MPCs is difficult[16] due to differences in time horizons considered, the range of the estimates appears sizable. Potential origins of such differences are the nature and the representativeness of the data used[17], differences in the types of spending captured, as well as measurement error.

Consumption response across groups of households   The average propensity to consume out of stimulus transfers conceals vast heterogeneity in the MPC across groups of households. Identifying those individuals who are most responsive to stimulus transfer matters greatly for designing effective stimulus packages. In the survey by Coibion et al. (2020) approximately 30 percent of households report that they spent (or will spend) the entire stimulus check. Almost 40 percent say they will not spend any of it at all, but rather save it or use it to repay debts. Existing evidence generally suggests that consumption by low-income households and households with low levels of liquid savings has responded most strongly to the stimulus (Baker et al., 2020; Chetty et al., 2020; Coibion et al., 2020; Karger and Rajan, 2020), in line with these groups previously facing binding liquidity constraints. Baker et al. (2020) find the size of household liquidity buffers to be the strongest predictor of a high MPC. In their data, individuals with less than $500 in their accounts spend 0.36 cents out of every dollar received, while spending by individuals with more than $ 3,000 in liquid assets does not respond at all.[18] While higher income levels

generally have lower MPCs and rather save their stimulus checks (Coibion et al., 2020), individuals who have high incomes but low levels of cash on hand respond more strongly to the stimulus.[19] Karger and Rajan (2020) estimate that hand-to-mouth consumers who spend their entire income each month to have an average MPC of 0.68. Households that have experienced shocks to financial wealth show no differential willingness to consume (Coibion et al., 2020; Hanspal et al., 2020), in line with a low marginal propensity to consume out of stock market wealth (see e.g. Di Maggio et al., 2020).[20]

Consumption response by category of spending   Households spent their stimulus payments primarily on food, non-durables, and household goods and services, which already have seen large inflows before the stimulus payment as a result of hoarding (Bachas et al., 2020; Chetty et al., 2020). A significant fraction of the stimulus also was used for rent and bill payments, as well as to repay debts (Baker et al., 2020; Coibion et al., 2020). Notably, the break-down by spending category differs from previous crises when stimulus payments more strongly spurred purchases of durable goods such as cars (Johnson et al., 2006; Parker et al., 2013). This is despite the 2020 stimulus payments being substantially larger in size. The pandemic-induced decline in the demand for transportation, increased health concerns on the part of many households, along with supply-side restrictions are likely to explain the subdued effect on durable goods spending.[21]

3.4   Consumption response to extended unemployment benefits

Many economists criticized the untargeted nature of the cash transfer, providing additional liquidity also to individuals who went rather unharmed by the crisis. In contrast, in targeting the unemployed, extended unemployment benefits directed additional funds towards those households most suffering from the crisis and thus likely to face binding liquidity constraints. Liquidity provided under the extended unemployment benefits scheme was substantial, raising incomes of three quarters of the unemployed above their pre-pandemic level (Ganong et al., 2020).

Casado et al. (2020) exploit regional variation in industry composition across regions to estimate the local impact of extended unemployment benefits on economic activity.

They document that, in line with the goal of the stimulus, higher replacement rates lead to significantly more consumer spending – even with increases in the unemployment rate. Bayer et al. (2020) quantify the impact of both unconditional and conditional transfers to household under the US CARES Act. The authors estimate the conditional transfer multiplier to be as high as 1.5. This exceptionally high compared to values reported in the literature, and 6 times higher than the short-run multiplier on unconditional payments (0.25). Bayer et al. (2020) argue that this not only results from high MPCs of targeted households, but also from the fact that conditional transfers provide social insurance in the case of a job loss, as they mitigate individuals' income risk ex-ante.

3.5   Changes in household savings

The two policy measures considered above have channeled significant amounts of liquidity to households, partly with little regards to their income situation. As a result of transfer income, reduced spending, and increased health concerns, aggregate savings have increased substantially over the early phases of the pandemic. Especially top-income households increased their savings in absolute terms (Baker et al., 2020; Coibion et al., 2020). However, also low-income households have replenished their liquidity buffers. While increased unemployment and disproportionate losses to labor incomes have reduced the ability of low-income workers to build up savings in the first place, they have disproportionately benefited from stimulus transfers and extended unemployment insurance benefits which added to their liquid balances. Bachas et al. (2020) show that although labor income fell the most for lower income households, total income including transfers increased the most for those at the bottom of the income distribution. Kaplan et al. (2020) highlights the redistributive effects of the stimulus policies. Unconditional transfers handed out to US households constituted a larger share of income for low-income households. Similarly, as the temporary supplement to unemployment benefits is flat, it drove up the replacement rate and resulting income disproportionately for low income workers (cf. Ganong et al., 2020). Overall, the increase in liquid balances by top-quartile income households has been less than proportional to their initial share of liquid wealth held. Low-income households raise their savings relatively more, likely reflecting the effect

of stimulus policies (Bachas et al., 2020).

4 Discussion

The above evidence suggests that stimulus policies enacted have provided important income assistance to households over the early phases of the pandemic that allowed them to keep up spending. Especially those individuals most severely hit by the crisis exhibit high marginal propensities to consume out of stimulus money.

As the virus continues to spread, policy makers across countries continue to face difficult decisions down the road. In this section, we summarize some of the most pressing issues shaping the current policy debate.

Additional stimulus and optimal policy mix The number of daily infections is currently hitting new records in many countries. As a response, authorities have tightened social-distancing measures again or implemented local lock-downs, reducing economic activity anew. At the same time, first-round stimulus programs that supported household spending throughout the first half of the year in part have petered out, raising calls for additional assistance to still vulnerable households and businesses (Bachas et al., 2020; Chetty et al., 2020; Guerrieri et al., 2020).

Previous crises have taught policy makers that withdrawing income assistance to households too early comes at the risk of suffocating economic recovery. With low-income households being most affected during the current crisis, refusing to provide ongoing assistance will leave the most vulnerable stripped off resources to spend amid a still weak economy, inducing economic hardship and slowing the recovery. However, while there seems to be broad acceptance among among policy makers and economists alike that additional stimulus is necessary, government support cannot last forever.

First and foremost, it comes at high costs. Governments have borrowed at an unprecedented scale to finance fiscal stimulus in response to the pandemic. By the end of the year, fiscal deficits in the rich world will have grown to double-digit numbers, according to IMF estimates. With central banks having cut back on interest rates even further and moreover absorbing large amounts of newly issued government debt, the cost of borrowing

for governments is currently low.[22] However, this type of accommodation will not last for ever.[23] As central banks ultimately tighten their policies in the future due to inflation picking up, this will result in higher costs of debt service. To date, inflation expectations are muted, however.

Second, with monetary and fiscal policy being too accommodating for too long, this will hamper necessary structural adjustments to the economy (see below).

Optimal stimulus design Many economists have made the case for targeted social insurance to individuals who have been hit by the pandemic the hardest rather than handing out unconditional transfers. Guerrieri et al. (2020) argues that in a model economy where workers in different sectors are affected to different degrees by shut-downs, where borrowing constraints prevent affected households from smoothing consumption, and where health concerns constrain household spending above and beyond declines in demand resulting from a lack of economic resources, the optimal fiscal policy mix includes the closing-down of contact-intensive sectors and insurance payments to workers who lost their incomes.

However, even once the pandemic is over, life will not be the same as before. While generous unemployment benefits and wage replacement in the context of furlough schemes will have helped affected individuals to weather the worst of the pandemic, keeping these measures in place for too long will hamper necessary adjustments in the labor market.

First, it has been argued that overly generous unemployment benefits reduce incentives among the unemployed to seek a new job, inefficiently prolonging unemployment duration (see Hagedorn et al. (2013) for a discussion). So far, however, the evidence suggests that stimulus payments did not reduce individuals' efforts to search for work (Coibion et al., 2020).[24]

Second, structural changes in consumer habits – for instance as people continue to be wary about crowds, making them cut back on activities such as dining out and travel –, as well as changes in the way people live their everyday lives – for instance as they continue to work from their homes or shop online – will cause persistent changes in demand for goods and services. Furlough schemes enacted in many European countries

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are based on the assumption that workers will return to their old jobs once the pandemic is over. However, structural changes in consumer demand will require workers to move from declining towards striving sectors. Economists have argued that while there is a case for supporting the incomes of individuals who work in sectors that are shut down, once they re-open, consumers must be allowed to decide whether these jobs and business models are to survive. Government efforts then should focus on helping individuals to find jobs in striving sectors, for instance by subsidizing re-training.

The role of consumer confidence   Even if fiscal stimulus payments enter a second round, they will not be fully effective in stimulating the economy if consumer confidence remained low. A high level of general uncertainty and dim labor market prospects are likely to increase household precautionary savings and reduce firms' willingness to take risk.

Jordà et al. (2020) look at evidence from 15 large pandemics in Europe and find that the natural rate of interest is tilted down by almost 1.5 percentage points for as long as 20 years after a pandemic – much longer than after other major recessions. While the lower death toll, the fact that it mostly affected the elderly, and aggressive fiscal policies in response to the COVID-19 pandemic are likely to attenuate the effect, on net real interest rates are likely to stay low for some time into the future.

Complementary evidence suggests that individuals' crisis experience weighs on their expectations far into the future, which in turn affects their consumption and investment decisions.Malmendier and Shen (2018) show that households who have lived through times of high unemployment, or who have experienced more personal unemployment, continue to spend less, even after controlling for income and other variables. These effects are found to be particularly strong for younger cohorts. Past experience predicts beliefs about future economic conditions, implying a beliefs-based channel. With respect to the pandemic, Kozlowski et al. (2020) estimate that the long-run costs to the economy in the form of reduced investments and growth from such scarred beliefs are many times higher than that brought about by the initial shock. They conclude that even if a vaccine is found rapidly, the pandemic potentially will leave its mark on economies for many years to come.

Increasing inequality   Fueled by continued low costs of borrowing as a result of expansive monetary policy, many asset markets have seen a remarkable recovery over the recent months. In addition, fiscal stimuli have added to the liquidity buffers also of the rich. Global stock markets, after having falling by around one third by mid-March, have seen a stellar recovery since then, led by the extraordinary performance of large US tech firms. Also housing markets in many developed countries performed remarkably strong over the last months.[25]

The benefits from these developments are likely to be distributed rather unequally across groups of the population, as individuals from the bottom of the wealth distribution and with no access to credit have no opportunity to participate. In combination with low-income households having been affected most by losses to their incomes and jobs during the pandemic, this further adds to the existing wealth inequality in many countries and may increase dissatisfaction among parts of the population.

How can real-time indicators inform economic policy?   The last point we want to discuss is a methodological one. Traditionally, policy makers have looked to data from recurring surveys among households and businesses collected by government and public research institutions. Turning to a more real-time approach, economists interested in the design of optimal policies have started to use high-frequency transaction-level data provided by banks and other financial service firms to study the dynamics in household economic activity over the pandemic. This ranges from private sector data on transport use, restaurant reservations, cinema ticket receipts, electricity consumption, or mobility data from cellphones, to data on credit and debit card transactions, directly tracking consumer spending.

The proponents of these new real-time economic indicators highlight the timeliness, high-frequency, and granularity of these data sets as their main advantages. While official statistics are of great value for understanding the economy, they come with two main shortcomings (Chetty et al., 2020): First, they are collected at low frequency and with a considerable time lag. Second, due to limitations in sample sizes, these data offer limited opportunities to study heterogeneity across regions, sectors or other subgroups.[26]

Skeptics of private-sector data however emphasize that none of the data sets is representative of the entire population, limiting their potential value to policy makers. As an example, Coibion et al. (2020) explain that the high MPC out of direct cash stimulus estimated by Baker et al. (2020) may result from individuals in the data set holding liquid balances far below the population average. Moreover, many of the novel data sets do not offer a large time-series dimension that allows to adequately account for seasonality or other confounding effects. As an example, the finding that credit card spending surges after lock-downs are lifted may in part be driven by individuals merely substituting away from paying in cash rather than genuinely increasing spending. Finally, critics argue that private-sector data often lack transparency on how their aggregate time series are constructed.[27]

However, the timeliness of private-sector data still is of great value in studying short-run economic responses to a shock as drastic as the pandemic, whose impact plausibly dwarfs any confounding effects from selection or seasonality (Chetty et al., 2020). More, the granularity of these data sets allows to obtain valuable insight into the large degree of heterogeneity in the extent to which individuals across groups of the population are affected by the shock or how they differ in their responses to fiscal policies. This may assist policymakers in a timely evaluation of the measures enacted and inform their optimal fine-tuning.

5   Conclusion

We review early evidence on the impact of the Covid-19 pandemic on household consumption behavior and the effectiveness of fiscal stimulus measures in stabilizing spending by US households during the pandemic. We highlight several factors that affect the traditional mechanisms of fiscal stimulus measures and identify future challenges to policy makers as the virus keeps spreading. While evidence from US household spending data suggests that especially low-income households have responded strongly to fiscal stimuli, it will take considerable time for the economy to return to full potential. This may not only depend on future rounds of stimuli, though. Importantly, the evidence reviewed in this paper suggests that a significant part of the reduction in consumer spending re-

sults from households voluntarily forgoing consumption of certain goods and services due to health concerns. In consequence, this does not only ultimately require fighting the virus itself, but also will bring about important structural changes as economies adapt to altered consumer demands and lifestyles.

That said, while the long-term implications are already hard to forecast for the US, to which almost all of the preceding evidence relates, this applies even more for other countries where there exists much more uncertainty even about the current status of the economy and notably about that of the private household sector. This is a major caveat for gauging which policy response should be taken, in particular now in the middle of the second wave. That European countries have fared differently so far compared to each other and to the US is obvious not only from health statistics, but also from their different economic fundamentals. Southern European countries have been hard hit by a lack of foreign tourists, who were either banned from traveling (our channel 1) or voluntarily abstained (our channel 3). Spending their money in their home country, instead, has supported consumption there (our channel 4). Even for a given shortfall of spending, countries have fared differently depending on the prevalence of built-in stabilizing mechanisms and governments' willingness and ability to strengthen these. This applies, for instance, to the system of "short-time work", as is in place in various European countries, which allows companies to flexibly reducing working hours and pay, while the shortfall is largely made up by subsidies. Overall, households' financial position and thereby also the general distribution of income and wealth in society not only impacts substantially the effects of the current crisis, but also the efficacy of certain consumption stimulus programs. Given that European countries differ from the US in so many demographic and institutional dimensions, the evidence on stimulus programs summarized above must be translated to the European context with very much caution.

To exemplify why policymakers and their advisors would be well advised to look at country-specific evidence and to collect real-time information, we finally note the following example of Germany. Official statistics recorded for Q2, compared to the preceding year, a substantial fall in income (4 percent) and in private consumption (11 percent).

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While more granular official data is not available, we can draw on a large survey that we conducted biweekly since end of March in co-operation with Nielsen, involving each time the same representative panel of around 8,000 households. Evidence from this granular data suggests that the drop was confined to the initial lock-down and that week-by-week consumption plans as well as future income expectations improved considerably over time. The fall in income was largely confined to a particular segment, and households not initially affected did not expect a future deterioration of their economic condition. In addition, households' fear to become infected and their preparedness to, for instance, avoid public spaces and gatherings subsided substantially over the summer. With more such timely and granular evidence at hand, policy methods could be targeted to the particular situation. With so much uncertainty about the length and the depth of the crisis, an insufficiently targeted fiscal policy should be as much avoided as insufficient support for citizens and the economy.

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Table 1: Shut-downs and fiscal policies enacted across countries

Country	Economic impact	Lock-downs	Fiscal Policy Measures (select.)
USA	Δreal GDP (20Q2 vs 19Q2): -9.0% Δcons., total (20Q2 vs 19Q2): -9.7% Δcons., durables (20Q2 vs 19Q2): -3.8% Δcons., non-durables (20Q2 vs 19Q2): -3.3% Δcons., services (20Q2 vs 19Q2): -12.5%	Nationwide lockdown: No. Only single states, e.g. New York March 22 - June 13. Shops: No nationwide rules. Great variety across states. Industry: No nationwide rules. Great variety across states. Schools: No nationwide rules. E.g., New York City has again closed schools in some areas in October. Corona warning app: Available in numerous states.	Transfers to private households: – $312bn to expand unemployment benefits – $293bn one-time tax rebates to individuals – Continuing student loan payment relief – Deferring collections of employee social security payroll taxes – Increased access to pension plan savings – $25bn for food safety net Assistance to businesses: – More than $732bn for (forgivable) Small Business Administration loans and guarantees (PPP) – $510bn to prevent corporate bankruptcy via loans, guarantees and backstop of Federal Reserve 13(3) program Investment in health care: – $175bn for hospitals – $25bn for expanding virus testing
Germany	Δreal GDP (20Q2 vs 19Q2): -11.3% Δcons., total (20Q2 vs 19Q2): -11.3% Δcons., durables (20Q2 vs 19Q2): -14.8% Δcons., non-durables (20Q2 vs 19Q2): +1.2% Δcons., services (20Q2 vs 19Q2): -16.9%	Nationwide lockdown: Yes, March 23 - April 20. Shops: Re-opened gradually after the nationwide lockdown, starting on April 20. Industry: No lockdown for factories, etc. so far. Schools: Re-opened starting on May 4. Corona warning app: Yes, available since June 16.	Supplementary budgets of €156bn in March and €130bn in June, used for: Transfers to private households: – Expanded access to furlough scheme ("Kurzarbeit") – Expanded childcare benefits and income support for families – Extended duration of unemployment insurance and parental leave benefits – Temporary VAT reduction Assistance to businesses: – €52bn grants and venture capital for small businesses, self-employed and start-ups – Interest-free tax deferrals – Credit guaranteess for export sector – €757bn guarantees Investment in health care: – Increased spending on healthcare equipment and capacity
France	Δreal GDP (20Q2 vs 19Q2): -18.9% Δcons., total (20Q2 vs 19Q2): -16.8% Δcons., durables (20Q2 vs 19Q2): -22,0% Δcons., non-durables (20Q2 vs 19Q2): -6.6% Δcons., services (20Q2 vs 19Q2): -20.8%	Nationwide lockdown: Yes, March 17 - May 11. Addit. restrictions for most affected regions. Shops: Lockdown/ban for non-essential shops/activities. Industry: ockdown/ban for non-essential shops/activities. Schools: Re-opened starting May 11. Corona warning app: Yes, available since June 16.	Amending budgets of €135bn adding to €327bn of public guarantees Transfers to private households: – Support for wages of workers under furlough scheme – Extension of unemployment benefits until end of lockdown Assistance to businesses: – Postponements of social security, tax, rent and utility payments – Direct financial support for small businesses; support to hardest-hit sectors – Equity investments in troubled companies Investment in health care: – Increased spending on health supplies

Table continues on next page.

Table 1: Shut-downs and fiscal policies enacted across countries (cont.)

Country	Economic impact	Lockdowns	Fiscal Policy Measures (select.)
Spain	Δreal GDP (20Q2 vs 19Q2): -21.5% Δcons., total (20Q2 vs 19Q2): -29.2% Δcons., durables(20Q2 vs 19Q2): -36.3% Δcons., non-durables (20Q2 vs 19Q2): n/a Δcons., services (20Q2 vs 19Q2): n/a	Nationwide lockdown: Yes. March 14 - June 21 Shops: Gradually re-opened, many from end of June. New restrictions for restaurants, etc. in mid-August. Industry: Gradual return to work after April 9. Schools: Re-opened in September. Corona warning app: Yes, available since August.	Transfers to private households: – €18bn unemployment benefits – €1.4bn increased sick pay – Introduction of minimum vital income (about €3bn p.a.) – €1.6bn support for employees not qualifying for unemployment benefits – Increased access to pension plan savings Assistance to businesses: –€4.8bn benefits to self-employed workers – €3.2bn of exemptions of social security contributions for firms maintaining employment and self-employed – Tax deferrals for SMEs and self-employed; increased tax flexibility (about €1bn) Investment in health care: – €5.3bn for health services and research – Zero VAT for essential medical material
Italy	Δreal GDP (20Q2 vs 19Q2): -18.0% Δcons., total (20Q2 vs 19Q2): -19.1% Δcons., durables(20Q2 vs 19Q2): -32.5% Δcons., non-durables (20Q2 vs 19Q2): -5.2% Δcons., services (20Q2 vs 19Q2): -24.1%	Nationwide lockdown: Yes, March 9 - May 4. Shops: Retail shops and restaurants re-opened on May 18. Restrictions on, inter alia, nightlife again since August 17. Industry: Re-opened gradually after nationwide lockdown. Schools: Re-opened in September. Corona warning app: Yes.	Transfers to private households: – €14.5bn income support for families – €12bn income support for workers, extension of furlough scheme, suspension of social security contributions for new hires Assistance to businesses: – €16bn grants and tax deferrals for SMEs – Moratorium on SMEs debt repayment and tax obligations Investment in health care: – €3.3bn funds for the healthcare system
Netherlands	Δreal GDP (20Q2 vs 19Q2): -9.2% Δcons., total (20Q2 vs 19Q2): -12.5% Δcons., durables(20Q2 vs 19Q2): -2,3% Δcons., non-durables (20Q2 vs 19Q2): -0.7% Δcons., services (20Q2 vs 19Q2): -20.4%	Nationwide lockdown: Yes, March 15 - May 11. Partial lockdown in October. Shops: Partial re-opening starting on May 11. Restrictions for restaurants, etc. since end of September. Industry: "Work from home guideline" announced on March 12. Reinstated on August 18. Schools: Allowed to re-open starting on May 11. Corona warning app: Yes.	Three support packages in total amounting to €45.5bn Transfers to private households: – Extension of furlough scheme and unemployment benefits – Measures to increase labor mobility and training of employees Assistance to businesses: – Compensation of labor costs, additional support to most affected sectors and firms – Support for self-employed, start-ups, SMEs – Extended tax deferrals – €61bn public guarantee scheme
UK	Δreal GDP (20Q2 vs 19Q2): -21.5% Δcons., total (20Q2 vs 19Q2): -25.3% Δcons., durables(20Q2 vs 19Q2): -36,8% Δcons., non-durables (20Q2 vs 19Q2): -1.6% Δcons., services (20Q2 vs 19Q2): -32.1%	Nationwide lockdown: Yes, March 23 to July 4. Partial lockdowns in Northern Ireland (Oct 16) and Wales (Oct 23). Shops: Non-essential shops closed on March 23, gradual re-opening different by region (England starting July 4). Restrictions in Northern Ireland and Wales in October. Industry: Lockdown starting March 23, sector-by-sector return to work. Schools: Re-opening started in September. Corona warning app: NHS warning app launched on September 24.	Transfers to private households: – Wage compensation for self-employed and furloughed workers (up to 60-80%); new furlough scheme announced in September – £8bn to strengthen the social safety net – Minimum wage for young workers at risk of long-term unemployment – Support of worker training – Support for low-income households prevented from working Assistance to businesses: – £29bn for grants and compensations; support to firms affected by lockdowns – Income support, deferral/reduction of VAT and income taxes for self-employed – Governmental loan programs – Trade credit insurance Investment in health care: – Additional funding for National Health Service (£48.5bn)

Table 2: Effect of pandemic on household consumption

	Effect	Most relevant HH groups	Impact on consum.	Impact on savings	Most affected industries	Impact on Revenue	Example of affected industries
1	Shut down - consumption side	all	decline	increase	shut-down industries	decline	restaurants, hotels, entertainment, travel, retail
2a	Shut down - labor side	work in shocked industries		decline	shut-down industries		restaurants, hotels, entertainment, travel, retail
2b	Liquidity squeeze from labor income decline	work in shocked industries	decline		non-essential goods	decline	Leisure, automobiles, apparel, tourism, luxury
3	Health concerns of consumers	all	decline	increase	contact-intensive	decline	restaurants, hotels, entertainment, travel, retail
4	Health concerns of consumers	all	increase		online businesses	increase	e-commerce, video conferencing, FinTech
5	Precautionary HH savings	with pessimistic expectations	decline	increase	non-essential goods	decline	leisure, automobiles, apparel, tourism, luxury

Note: The table summarizes infomation on the shut-down policies and fiscal support measures enacted in the United States, Germany, France, Spain, Netherlands and the UK over the pandemic. Information on policy measures is retrieved from the IMF policy tracker (`https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19`). We restrict the information in the table to the largest measures enacted in order to save space. We add more details on lock-down duration and scope from national press outlets. Data on GDP and consumption are taken from FRED for the US and from Eurostat for Europe.

Notes

[1]The authors provide a model that illustrates the mechanisms by which the initial supply-side shock may end up affecting demand in an economy with multiple sectors in the presence of borrowing constraints and health concerns weighing on consumer demand.

[2]Guerrieri et al. (2020) further point to the fact that demand for goods and services complementary to those in closed sectors may fall as well, further weighing on aggregate demand. Moreover, stay-at-home policies by governments and employers reduced the need to consume certain goods and services, such as meals outside home, transportation or travel (variant of chanel 1).

[3] Bachas et al. (2020); Baker et al. (2020); Casado et al. (2020); Chetty et al. (2020); Karger and Rajan (2020) use private-sector data to study household consumption behavior in the US over the pandemic. See Surico et al. (2020) for similar evidence on UK households, Andersen et al. (2020a) for Denmark, Bounie et al. (2020) for France, Carvalho et al. (2020) for Spain, and Chen et al. (2020) for evidence from China.

[4]The International Monetary Fund summarizes the key policy responses governments have taken to combat the social and economic consequences of the pandemic, available at `https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19`. See also Table 1.

[5]Definitions of essential and non-essential spending differ slightly across studies. Bachas et al. (2020) base their categorization on state social distancing orders that restricted non-essential goods and services. Essential categories include fuel, transit, cash, drug stores, discount stores, auto repair, groceries, telecom, utilities, insurance, and healthcare. Non-essential categories include retail durables, department stores, other retail, restaurants, flights, hotels, rental cars, entertainment, home improvement, professional and personal services, etc.

[6]Chetty et al. (2020) note that spending on non-essential goods that do not require physical contact did not decline. Businesses that offer fewer in-person services (e.g. financial services) also experienced smaller declines.

[7]Cajner et al. (2020) document that workers in the bottom quintile of the wage distribution during the pandemic experienced a 35 percent employment decline while those in the top quintile experienced only a 9 percent decline.

[8]Higher-income households are likely to have been more strongly affected by the decline in financial markets during the early phase of the pandemic as they hold more financial assets. Survey evidence on US households suggests that wealth effects are unlikely to explain much of the change in spending (Hanspal et al., 2020), however. Bachas et al. (2020) also test for differences in geographic location across households of different income levels. High-income households may be more likely to live in urban areas, which have been affected by the disease more severely and seen more shut-downs. They do not find differences in location to explain the difference in the spending trajectories over the pandemic by

income.

[9]Bachas et al. (2020) document non-essential spending to make up for 67 percent of spending by top-quartile income households, while it is 59 percent in the bottom quartile.

[10]Bayer et al. (2020) estimate that the temporary unavailability of some goods explains three-quarters of the peak output loss.

[11]Article available at `https://www.economist.com/united-states/2020/03/14/tracking-the-economic-impact-o`

[12]For more information on the CARES Act see `https://home.treasury.gov/policy-issues/cares`.

[13]Reductions in the transfer amount received start at $ 75,000 per individual ($ 112,500 for single parents with children, $ 150,000 for married couples). No payments were made to individuals earning more than $ 99,000 (married couples with more than $ 198,000).

[14]Note that while the PPP also was intended to prevent businesses from sacking employees, it differs from furlough schemes enacted in many European countries as it takes the form of loans, at least initially. Furlough schemes as enacted in many European countries take the form of a governmental unemployment insurance. Workers who face a forced reduction in working hours and pay receive a partial replacement funded by the government. For instance, under the German *Kurzarbeit* scheme, the government replaces 60 to 67 percent of wages lost. Several scholars have criticized the PPP for its lack of success at protecting employment (Chetty et al., 2020; Granja et al., 2020)

[15]Johnson et al. (2006) estimate that US households spent 20-40 percent of the 2001 tax rebates during the quarter following receipt. Parker et al. (2013) estimate that US households spend 50-90 percent of the 2008 fiscal stimulus payment during the quarter after disbursement, 12-30 percent were spent on non-durables. Barro (2014) using Nielsen Homescan data estimate an MPC out of the 2008 stimulus payment of 50-74 percent over the quarter after disbursement. They also observe that spending on groceries increased by about 10 percent during the week following on receipt.

[16]Comparison to MPCs from prior stimulus payments (e.g. in response to the 2001 and 2008 crisis) moreover are made difficult as the 2020 stimulus payments were larger in size, making it likely that a higher fraction would be saved (Coibion et al., 2020).

[17]For example, Coibion et al. (2020) argue that the high MPC estimated over a rather short period in Baker et al. (2020) results from the sample being heavily tilted towards households with low incomes and low liquid balances, who should exhibit higher propensities to consume out of the stimulus money.

[18]Similarly, while individuals with an income of below $ 1,000 per month spend over a third of their stimulus during the 10 days upon receipt, MPCs of individuals with monthly incomes above $ 5,000 are not statistically significant from zero.

[19]This is in line with recent models featuring assets of different levels of liquidity in which wealthy hand to mouth behavior arises (see, e.g. Kaplan and Violante, 2014).

[20]Besides lower-income households and households facing liquidity constraints, Coibion et al. (2020)

find individuals out of the labor force, living in larger households, with lower education, and males to be more likely to spend most of their checks. Older individuals, those with mortgages, those unemployed and those who report to have lost earnings over the pandemic primarily used their checks to pay off debts.

[21]More, in response to the 2007-2009 Financial Crisis, several countries had enacted incentives schemes to spur car purchase. Examples are the US *Cash for Clunkers* program or the German *Abwrackprämie* that have been temporarily introduced in 2009.

[22]While central banks justify their proper role as providers of crisis liquidity, some economists have raised concerns about central bank independence. See e.g. `https://www.economist.com/leaders/2020/07/23/governments-must-beware-the-lure-of-free-money`

[23]See e.g. a comment by Oli Rehn, governor of the Bank of Finland and a former vice-president of the European Commission `https://www.ft.com/content/4fabc80f-b1e3-4dc0-9026-0978607fa62d`.

[24]See also `https://www.economist.com/united-states/2020/07/23/generous-unemployment-benefits-are-not-`

[25]See e.g. `https://www.economist.com/finance-and-economics/2020/09/30/why-despite-the-coronavirus-pan`

[26]For example, the Consumer Expenditure Survey (CEX) typically provides disaggregated quarterly data on consumer expenditures with a one-year time lag (Chetty et al., 2020).

[27]See `https://www.economist.com/united-states/2020/03/14/tracking-the-economic-impact-of-covid-19-i`