Consumer Behavior, the Macroeconomy, and the Uninsurability of Pandemic-Related Business Income Losses

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Executive Summary

This paper examines the economic losses in the United States resulting from the COVID-19 pandemic, the fiscal stimulus required to provide economic stabilization, and the unworkability of trying to force private insurance to substitute for federal macroeconomic fiscal relief.

The COVID-19 pandemic is expected to cause $28 trillion in global economic losses.[1] In addition to widescale business continuity losses, the United States and other economies experienced record mass unemployment and income loss, structural unemployment shifts, liability losses, worker health losses, financial market losses, supply chain disruptions and losses, and accelerating inflation. These losses triggered macroeconomic crises around the world that required unprecedented government intervention and stimulus to stabilize national economies.

The commercial losses resulting from the pandemic can be primarily attributed to a plunge in macroeconomic demand for in-person services. These losses are concentrated in the leisure and hospitality sectors, spiking U.S. unemployment at the height of the pandemic to 14.8 percent, and disproportionately impacting low-wage women and minority workers. To reduce the economic volatility shock, the U.S. federal government flooded the economy with $5.7 trillion in pandemic-related stimulus with trillions of dollars in additional relief anticipated.

Some policymakers have suggested that private business interruption insurance could somehow provide widescale pandemic relief in the future in lieu of government relief. However, business interruption insurance is a property coverage designed to help businesses remain viable while physically damaged property is repaired. COVID-19 has not been found to cause physical damage—as federal and state courts have repeatedly affirmed. Rather, COVID-19-related economic losses have resulted from a plunge in consumer demand as people made the very rational decision to avoid nonessential retail visits that risk human transmission. Stabilizing the U.S. economy as it adjusts to macroeconomic shifts in consumer demand is inherently a federal responsibility far beyond the structural or financial capacity of the insurance industry.

Additionally, mass market business continuity risks are uninsurable and do not meet any of the criteria for insurance. Considering scope alone, monthly premiums for business interruption insurance across the entire world are only $2.5 billion, or 0.147 percent of the monthly lost business revenues and 0.0156 percent of the needed COVID-19 government relief provided to date.[2] It would require hundreds of years without intervening losses to collect enough business interruption premiums to offset pandemic losses and would require years to adjust the millions of relatively complex insurance claims occurring relatively simultaneously around the world.

COVID-19 losses are multi-layered and concentrated in specific sectors, suggesting the need for a series of flexible and specifically-tailored government solutions rather than trying to force an overly broad private insurance solution for a series of uninsurable risks.

1 International Monetary Fund (IMF), **https://blogs.imf.org/2020/10/13/a-long-uneven-and-uncertain-ascent**.

2 APCIA calculations based on Geneva Association estimates of global BI premiums, OECD estimates of monthly losses, and Brookings estimates of government support provided.

Overview: The Scale, Scope and Complexity of Pandemic Risk

The COVID-19 pandemic's twin tolls on human health and the global economy are among the greatest in history. As of mid-2021, the virus had claimed nearly four million lives worldwide and sickened upwards of 180 million, according to the World Health Organization.[3] Included within this grim tally are more than 600,000 deaths in the United States alone, and a total of 33 million confirmed cases.[4] Yet, despite the epic nature of this tragedy, the public health crisis precipitated by the COVID-19 pandemic was brought to heel by a singular solution—the rapid development, distribution and mass administration of vaccines on a planetary scale. In contrast, the solution to many of the ongoing economic dislocations precipitated by the pandemic remains uncertain, elusive, and politically fraught despite trillions of dollars in fiscal and monetary stimulus.

The rapid spread of the COVID-19 delta variant in recent months illustrates why durable economic solutions designed to address the economic consequences of the pandemic remain elusive, while simultaneously demonstrating that consumer behavior, not government mandated business closures, is the primary source of pandemic economic volatility and business income loss. Specifically, even as businesses throughout the United States have largely reopened, many report a recent slowdown in sales—citing the delta variant as a primary factor.[5,6] Consumer fear of contracting the more virulent delta strain is contributing to an unambiguous deceleration in economic activity, echoing the economic collapse of 2020.[7]

The recent spread of the delta variant demonstrates that consumer behavior, not government mandated closures, is driving pandemic economic volatility and business income loss.

At the onset of the pandemic in early 2020, a combination of consumer fear, government-mandated restrictions and uncertainty among business owners led to large, abrupt declines in consumer and business spending. Massive layoffs, record unemployment, and a rapid and precipitous contraction in economic output ensued, pushing the economy into recession, and ending the longest economic expansion in U.S. history. The economic shock also triggered increased financial market volatility, severe supply-chain disruptions, and an acceleration in inflation—challenges that the economy continues to struggle with today.

Different sectors have been affected unevenly in different stages of the pandemic. While economic activity was initially depressed across most sectors of the economy, the extent and speed of recoveries has varied greatly among different sectors—recoveries which continue to this day—and which in many cases will not be complete for years to come.

3 World Health Organization Coronavirus Dashboard, accessed June 21, 2021 at: **https://covid19.who.int/**.

4 Centers for Disease Control and Prevention as of June 30, 2021.

5 Omeokwe. A., "U.S. Retail Sales Fell 1.1 percent in July as Spending Falls Across Categories," *Wall Street Journal.* August 17, 2021. Accessed at: **https://www.wsj.com/articles/us-economy-july-2021-retail-sales-delta-variant-11629153243?mod=hp_lead_pos1**.

6 Cameron, D., "Southwest Airlines Says Delta Variant is Hurting Its Business," *Wall Street Journal*. August 11, 2021. Accessed at: **https://www.wsj.com/articles/southwest-airlines-starting-to-feel-pinch-from-delta-variant-11628683588?page=1**.

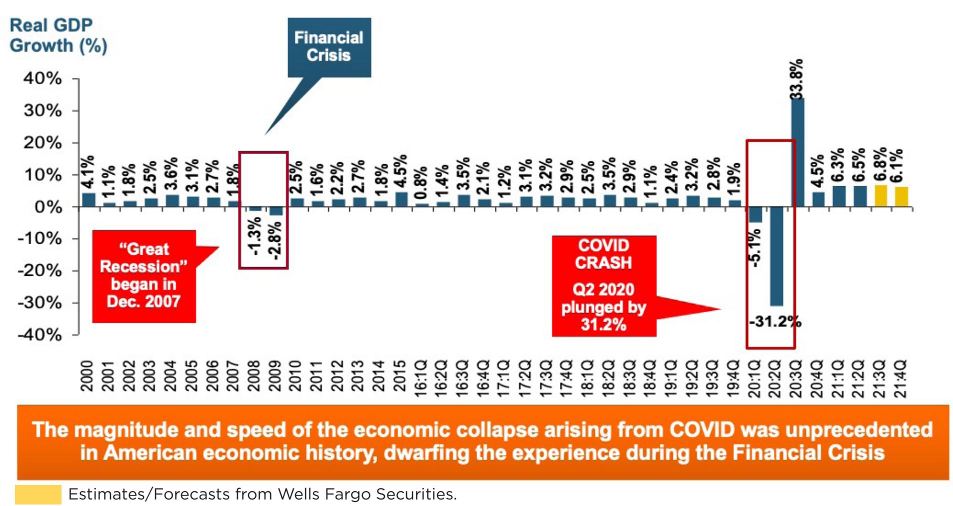
7 Cambon, S. and Morath, E., "U.S. Added 235,000 Jobs in August as Delta Dented Hiring," *Wall Street Journal*. September 3, 2021. Accessed at: **https://www.wsj.com/articles/august-jobs-report-unemployment-rate-2021-11630624394?mod=hp_lead_pos1**.

COVID-19's Economic Toll and the Collapse in Consumer Spending

Figure 1 and Figure 2 make clear that the signature economic consequence of the COVID-19 pandemic was a massive and abrupt collapse in economic activity. Real gross domestic product (GDP) in the United States plunged by nearly one-third during the second quarter of 2020, with spending by consumers (who account for nearly 70 percent of GDP) driving most of that drop. Likewise, business investment, which accounts for nearly 20 percent of GDP, simultaneously plummeted by nearly 30 percent. The snarling of global supply chains amid the pandemic and a worldwide recession also led to a sharp drop in net exports. Indeed, the only major component of GDP to grow amid the economic collapse during the first half of 2020 was government spending. In short, COVID-19 delivered a severe macroeconomic shock, triggered primarily by massive and abrupt declines in consumer and business spending. The resulting economic shockwaves reverberate to this day, affecting the trajectory of virtually every major economic indicator, including employment, retail sales, and interest rates while simultaneously contributing to ongoing supply chain disruptions, rising inflation and asset price volatility.

COVID-19's economic losses were bounded neither by national borders nor by the calendar. With the global economy shrinking by 3.3 percent in 2020, the International Monetary Fund has estimated that COVID-19's global economic toll will reach many trillions of dollars.[8,9] Looking ahead, science tells us that pandemic risks are intensifying as globalization and urbanization proceed apace, potentially costing as much as $23.5 trillion over the next 30 years.[10] In short, costly future pandemics are a certainty. It is also a certainty that the macroeconomic consequences of pandemics are not privately insurable. For example, a one-third decline in U.S. GDP on an annualized basis equates to approximately $7 trillion in economic activity. The figure is nearly eight times as large as the policyholder surplus (capital) backing the entire U.S. property casualty insurance industry and over 1,500 times larger than the annual business interruption insurance premiums even before other losses are considered.

Figure 1: US Real GDP Growth: 2000 – Q4:2021



Source: US Department of Commerce, Wells Fargo Securities 8/21; Center for Risk and Uncertainty Management, University of South Carolina.

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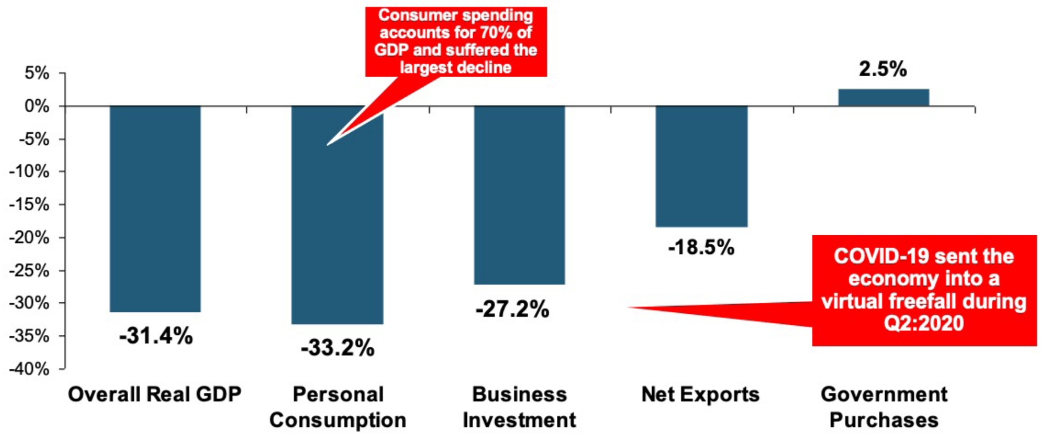
8 International Monetary Fund. *World Economic Outlook* (April 2021). Accessed at: **https://www.imf.org/external/datamapper/datasets/WEO**.

9 International Monetary Fund. "The Great Lockdown: Worst Economic Downturn Since the Great Depression, April 14, 2020, accessed at: **https://blogs.imf.org/2020/04/14/the-great-lockdown-worst-economic-downturn-since-the-great-depression/**.

10 Hilsenrath, J. "Global Viral Outbreaks Like Coronavirus, Once Rare, Will Become More Common." *Wall Street Journal*, March 6, 2020.

Figure 2: Change in Major Components of Real GDP: Q2:2020 *(Peak Quarter of COVID-19 Impact)*



Source: U.S. Department of Commerce; Wells Fargo Securities (7/21); Risk and Uncertainty Management Center.

Macroeconomic Stabilization: The Bright Line Between Fiscal Policy and Private Insurance Markets

GDP provides an excellent aggregate measure of the dollar magnitude of COVID's impact on the economy. The pandemic pushed American families and businesses to reduce spending radically and rapidly by trillions of dollars. But each consumer dollar not spent represents a loss of income to another family or business elsewhere in the economy. The true economic pain from COVID is most acutely felt in terms of this collapse in income. As such, optimal public policy responses will seek to target such disruptions, providing relief to affected wage earners and businesses while simultaneously stabilizing and supporting aggregate demand in the macroeconomy.

Macroeconomic stabilization policy has always been the domain of federal government, not the private sector. Several legislative proposals developed during the early months of the pandemic would, however, blur this distinction by compelling private insurers in future pandemics to bear potentially tens of billions of dollars of risk related to the loss of income sustained by businesses from lack of demand. This would represent an enormous and unprecedented departure from the voluntary, contractual relationship between insurers and their policyholders today through which businesses are compensated for income losses that result from direct physical loss or damage to insured property from a covered cause of loss (e.g., fire, explosion, wind.).

Potential business interruption losses were estimated at more than 200 times the premiums collected for all relevant commercial property lines of insurance.

Such a diversion of private capital would effectively oblige private insurers to operate as an appendage of federal fiscal policy, potentially introducing systemic instability throughout the private property casualty insurance industry and, as a result, the broader economy. The delineation between the role of government and private insurers is discussed in more detail later in this paper, with a special focus on disruptions in business income. Consider for the moment, however, that potential economy-wide business interruption losses at the height of the COVID-19 pandemic were estimated at as much as $1 trillion per month—a sum that is more than 200 times the $4.5 billion in monthly premium collected for all relevant commercial property lines of insurance.[11]

Peeling the Onion: The Many Layers of Pandemic Loss

Viewed broadly, there are many “layers” of pandemic loss, and each requires customized public policy solutions. Included among the most critical layers of loss are:

- Mass unemployment and wage/income loss
- Structural unemployment and skill loss/mismatch
- Business cash flow loss/interruptions
- Solvency threats for business and households
- Liability losses
- Worker health and safety losses
- Financial market losses
- Supply chain disruptions and ensuing losses
- Inflation and the loss of purchasing power
- Mortality and morbidity (health)-related losses
- Contingency losses (e.g., event cancellation)
- Travel disruption
- Widening income inequality

Several of the key layers of loss affecting income are discussed below:

Worker Income and Unemployment

According to the U.S. Bureau of Labor Statistics, wages and salaries paid to nonfarm workers fell by $617 billion in Q2 2020, a plunge of 6.5 percent, the largest single quarterly drop since the federal government began collecting this statistic in 1947.[12] Similarly, U.S. Bureau of Economic Analysis data show that real personal income less transfer payments (such as stimulus checks) fell by $1.2 trillion or 9.1 percent on an annualized basis early in the pandemic. This unprecedented drop in wages, salaries, and income is a direct consequence of soaring unemployment—which skyrocketed from 3.5 percent in February 2020 to 14.8 percent just two months later (Figure 3), reflecting the loss of some 22.4 million jobs, 5.7 million of which have yet to be recovered as of July 2021.[13] Soaring unemployment and the accompanying loss in income clearly took a large and immediate toll on consumer spending. Ongoing economic uncertainty has also had a lasting impact on consumer sentiment, further restraining consumer spending. The University of Michigan’s Consumer Sentiment Index (i.e., economic indicator measuring consumer confidence) remains far below pre-pandemic levels and in August 2021 fell 13.4 percent from July, pushing the index to its lowest level in more than a decade (Figure 4), rivaling readings last seen in the aftermath of financial crisis.[14]

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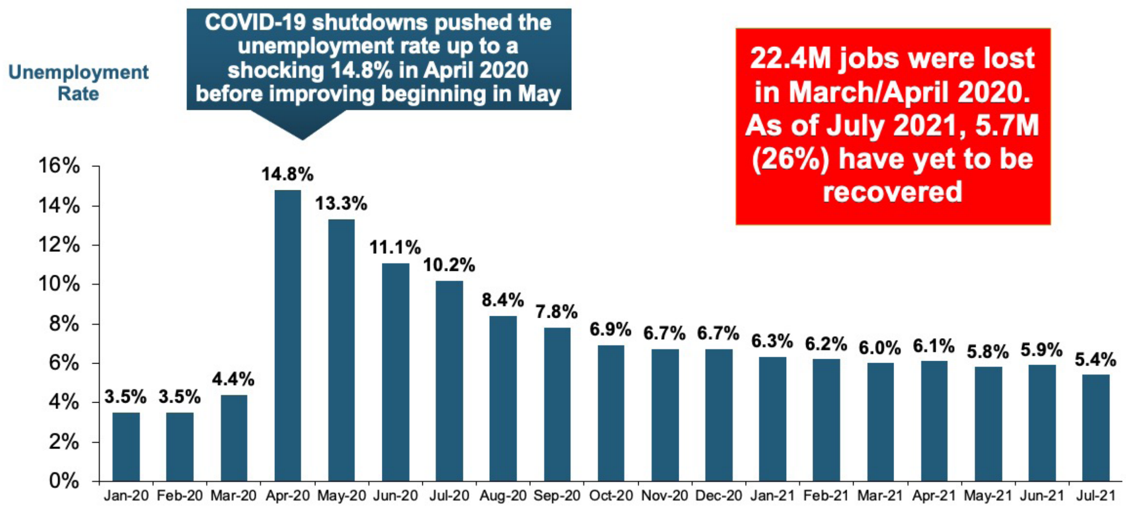
11 This reflects fire, allied lines, and commercial multi-peril property premiums for all covered perils/risks that potentially could also include BI coverage.

12 U.S. Bureau of Economic Analysis; Federal Reserve Bank of St. Louis. Data are on an annualized basis. Accessed July 14, 2021 at: **https://fred.stlouisfed.org/series/WASCUR**.

13 U.S. Bureau of Labor Statistics. Accessed August 29, 2021 at: **https://www.bls.gov/news.release/empsit.nr0.htm**.

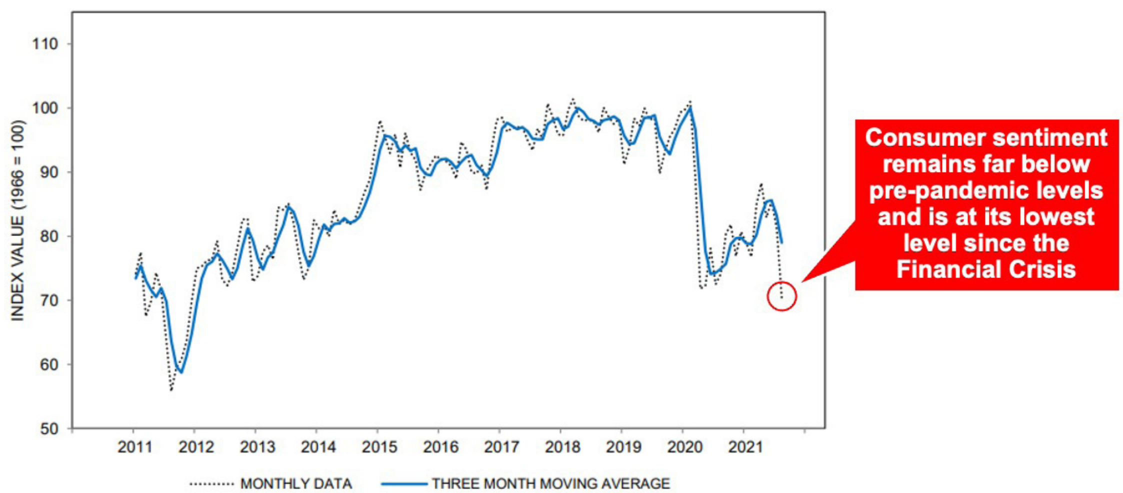
14 University of Michigan, Surveys of Consumers, (Final Results for August 2021). Accessed August 30, 2021 at: **http://www.sca.isr.umich.edu/**.

Figure 3: Unemployment Rate: Jan. 2020 – July 2021



Source: US Bureau of Labor Statistics; Risk and Uncertainty Management Center, University of South Carolina.

Figure 4: University of Michigan: Index of Consumer Sentiment (Jan. 2011 – Aug. 2021)



Source: University of Michigan Consumer Sentiment Index. Accessed August 30, 2021 at: **http://www.sca.isr.umich.edu/files/chicsr.pdf**.

Clearly, provisions for addressing mass unemployment and the ensuing loss of income are critical components of any comprehensive public policy response to future pandemics. Indeed, most advanced economies, including the United States, have long-standing social insurance programs in place to manage unemployment risks. These programs, supplemented by additional targeted resources during the COVID-19 pandemic, generally performed well, providing tens of millions of affected workers with income sufficient to cover their basic financial needs.

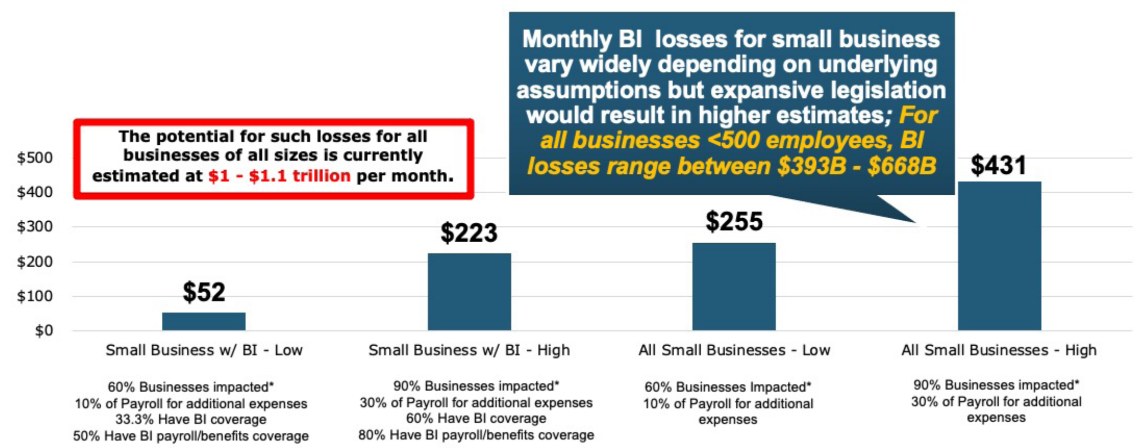
Pandemic unemployment programs generally performed well, providing tens of millions of affected workers with income sufficient to cover their basic financial needs.

Business Income

Business income was also materially impacted by COVID. Potential business income losses at the height of the pandemic were estimated to be as much as $1 trillion per month (Figure 5), reflecting primarily the massive and sudden drop off in consumer spending as well as the inability to spend because of mandated closures and other legal restrictions.[15] Small businesses bore a disproportionate share of these business income losses. Businesses with fewer than 500 employees were estimated to have the potential for sustained income losses between $393 billion and $668 billion per month early in the pandemic.[16] Congress immediately recognized the impact of the COVID-19 pandemic on small businesses and created the Paycheck Protection Program (PPP) to address these concerns. According to the Small Business Administration (SBA), approximately 5.2 million loans with a total value of $525 billion were approved in 2020, with an average value of $101,419 per loan. An analysis of those PPP loans by the Federal Reserve Bank of Cleveland found that about 76 percent of small businesses received a PPP loan, which typically covered 97 percent of a 10-week period of their payrolls.[17] As with the loss of worker income due to mass unemployment, addressing the loss of business income in future pandemics is necessarily a priority.

Small businesses bore a disproportionate share of business income losses from the pandemic.

Figure 5: Estimated Monthly U.S. Business Interruption Coronavirus Losses for Small Business—Potential Range (<100 Employees; $Bill)



* Businesses impacted: Proportion of businesses completely or substantially closed related to coronavirus

Assumptions: Losses if standard insurance policy exclusions for viruses/pandemics are voided and physical loss/damage requirement is stricken; three main coverages - profit lost, payroll/benefits, additional expenses; average annual $2m revenue and 7% profit margin; non-wage benefits of small businesses are 25% less than that for average US businesses

Source: APCIA, April 2020.

15 Hartwig, R. and Gordon, R., "Uninsurability of Mass Market Business Continuity Risks from Viral Pandemics," American Property Casualty Insurance Association, June 2020. Accessed at: **https://www.uscriskcenter.com/presentations/uninsurability-of-mass-market-business-continuity-risks-from-viral-pandemics/**.

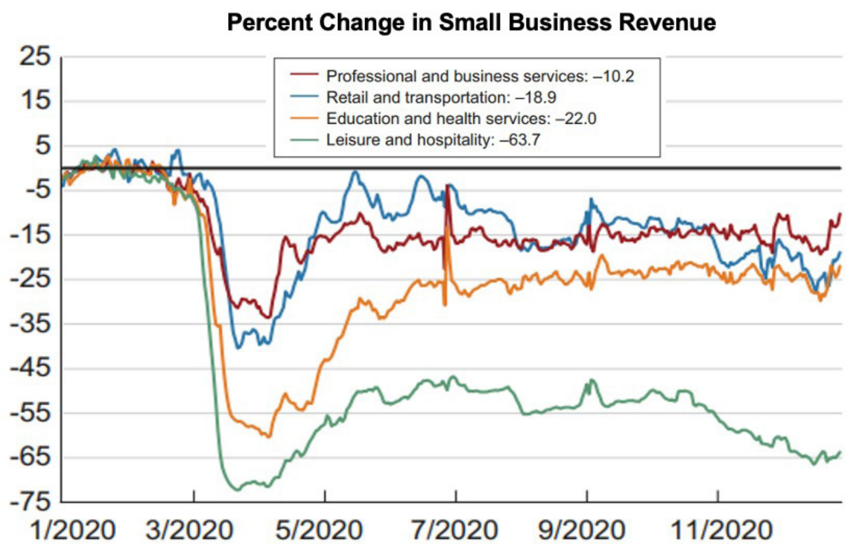
16 American Property Casualty Insurance Association estimate (April 2020).

17 Federal Reserve Bank of Cleveland, *Which Industries Received PPP Loans?,* Working Paper 2021-08 (April 1, 2021). Accessed August 28, 2021 at: **https://www.clevelandfed.org/newsroom-and-events/publications/economic-commentary/2021-economic-commentaries/ec-202108-which-industries-received-ppp-loans.aspx**.

Business Income Losses: Consumer Decisions to Disengage from Commerce

Public policy solutions designed to address business income loss from pandemics must recognize the particularly nuanced nature of this category of loss. A National Bureau of Economic Research study found that small businesses and their owners experienced unprecedented disruptions of up to a 40 percent drop in revenues and consumption in the early phases of the COVID-19 pandemic. Through May 2020, the study attributed most of the average decline to nationwide factors rather than local infection rates or state-level policies like shelter in place orders.[18] In other words, a substantial share of the income loss experienced by businesses was associated with factors that transcended state borders, such as fear of contracting COVID-19. Figure 6 shows that similar conditions persisted for small businesses through year-end 2020, with small business sales revenue remaining 10 percent to more than 60 percent below pre-pandemic volumes.[19]

Figure 6: Small Business Revenues in 2020*



*Dates are from Jan. 10, 2020 to Dec. 31, 2020.

Source: Federal Reserve Bank of Cleveland, "Which Industries Received PPP Loans?" Working Paper 2021-08 (April 1, 2021), citing data from Womply and calculations provided by Opportunity Insights Economic Tracker. Accesses Aug. 28, 2021 at: **https://www.clevelandfed.org/en/newsroom-and-events/publications/economic-commentary/2021-economic-commentaries/ec-202108-which-industries-received-ppp-loans.aspx**.

18 National Bureau of Economic Research, NBER Working Paper Series, *Revenue Collapses and the Consumption of Small Business Owners in the Early Stages of the COVID-19 Pandemic*, Olivia S. Kim, Jonathan A. Parker, Antoinette Schoar, **https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3739648**.

19 See Federal Reserve Bank of Cleveland study cited in footnote 13, citing data from Womply.

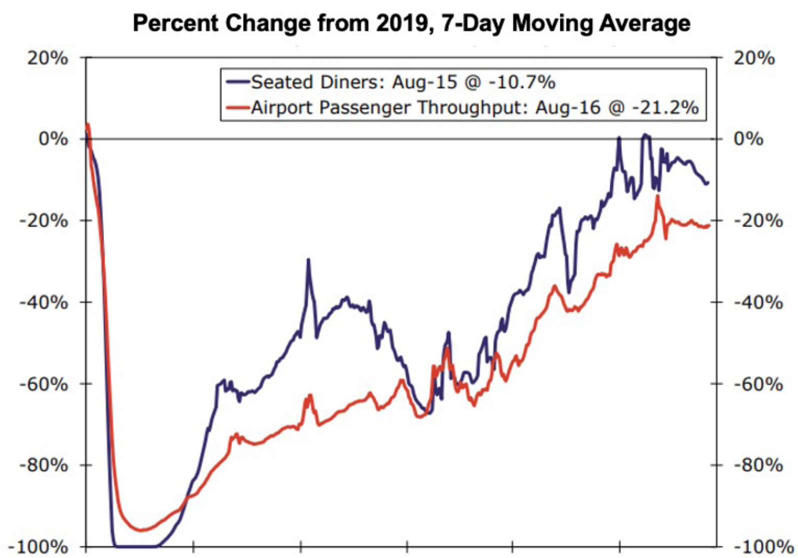
20 Goolsbee, A. and Syverson, C. 2021. *Fear, Lockdown, and Diversion: Comparing Drivers of Pandemic Economic Decline 2020.* Journal of Public Economics. 193 (104311).

This finding is consistent with additional research suggesting that the "vast majority" of the reduction in consumer visits to businesses was driven by voluntary decisions by consumers to "disengage from commerce," not—as is commonly presumed—government-imposed restrictions on activity.[20] Specifically, consumer visits to business fell by 60 percent during the first few months of the pandemic, yet only 7 percent of the decline is attributable to legal restrictions. Crucially, though the shutdown orders had little aggregate impact, they did have a significant effect on "reallocating consumer visits from 'nonessential' to 'essential' businesses." As an example, restaurants and bars (which were universally deemed as 'nonessential') experienced a decline of nearly 30 percent in consumer visits, while non-restaurant food and beverage stores benefitted from a 27 percent *increase* in visits.

Most of the reduction in consumer visits to businesses was driven by voluntary to "disengage from commerce," not—as is commonly presumed—government-imposed restrictions on activity.

Evidence of consumer avoidance behaviors and risk aversion in general remains strong even well into 2021 (see Figure 7). Despite the nearly full reopening of the economy, the Transportation Security Administration (TSA) reported in mid-August that the number of passengers processed at the nation's airports remained 21 percent below pre-pandemic levels. At the same time, restaurants recorded nearly 11 percent fewer seated diners.[21]

Figure 7: Airline Passengers and Seated Diners



Source: Wells Fargo Securities, *"Retail Sales Reflects Air Pocket in Goods Spending,"* August 17, 2021, citing TSA and OpenTable data.

These important research findings have significant public policy implications in terms of how future pandemic relief programs should be designed to provide maximum support to business—small businesses, in particular. Moreover, these same findings, which suggest that much of the income loss sustained by small businesses was the result of avoidance behaviors by consumers, combined with

20 Goolsbee, A. and Syverson, C. 2021. *Fear, Lockdown, and Diversion: Comparing Drivers of Pandemic Economic Decline 2020.* Journal of Public Economics. 193 (104311).

21 Wells Fargo Securities, *Retail Sales Report Reflects Air Pocket in Goods Spending*, August 17, 2021.

the sheer magnitude of losses discussed in the previous section, provide insights on the practical impossibility of privately insuring against shifts in macroeconomic activity, particularly with respect to collapses in aggregate demand that adversely impact business income.

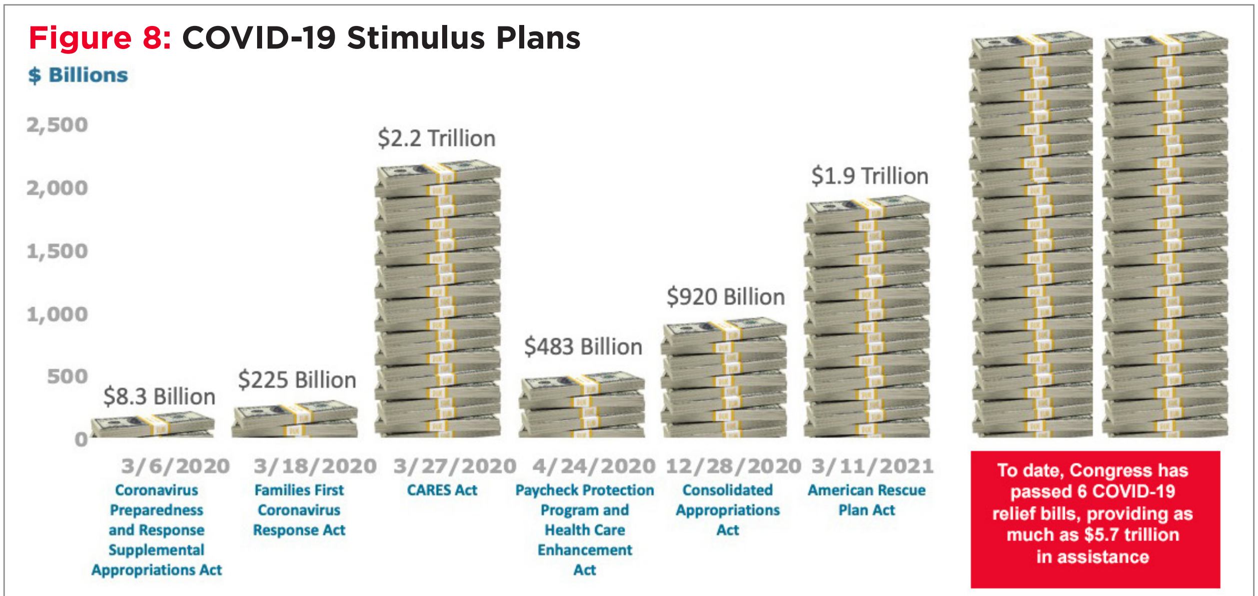
The practical impossibility of privately insuring against business income losses arising from pandemics is explored further in the next section, which provides a more detailed discussion of the generally accepted criteria that define insurability.

The Role of Government and the Bounds of Insurability

Financing Pandemic Losses: What Makes Government Unique?

The extent of the macroeconomic shock caused by COVID-19 demonstrates that the government must play the lead role in combating the large-scale economic dislocations, with the private sector playing many critical supporting roles. Government involvement is required not only because the cost of mitigating the economic consequences of pandemics is measured in the trillions of dollars, far exceeding the resources of private industry, but also because of the government's unique ability to tax, borrow, and spread costs and risk across time. During the early weeks and months of the pandemic, Congress fulfilled this duty, passing legislation providing $2.4 trillion in emergency pandemic relief by the end of March 2020 (Figure 8). Within one year of the pandemic's onset in the United States, Congress had passed six major relief bills, providing more than $5.7 trillion in pandemic aid to American families and business owners. Virtually all this spending is financed through borrowing on a scale unimaginable by the private sector. Between 2019: Q4 and 2021: Q2, the total public debt of the federal government grew by $5.33 trillion, an increase of 23 percent.[22] Only government—with its unique authority to tax—can shift and spread expenditures of this magnitude over time.

Government involvement is required because the cost of mitigating the economic consequences of pandemics far exceeds the resources of private insurance industry and also because of the government's unique ability to tax, borrow, and spread costs and risk over time.



Source: Congressional Budget Office.

22 U.S. Department of the Treasury; Federal Reserve Bank of St. Louis. Accessed August 30, 2021 at: **https://fred.stlouisfed.org/graph/?id=GFDEBTN**. Over the same period, public debt as a share of GDP increased from 106.7 percent to 125.5 percent.

Challenges to the Insurability of Pandemic Risks: The Case of Business Income

Insuring against business continuity losses from pandemics poses a unique set of challenges for insurers that collectively render the risk uninsurable in private insurance markets on a large scale. Potential losses can easily exceed the industry's capital, surplus and premium resources, posing a systemic risk to the industry and the overall economy. Because virtually all businesses may sustain losses simultaneously and continuously over the span of many months, the ability to spread risk—a function essential to the smooth operation of insurance markets—is severely compromised. Frequency and severity of losses cannot be precisely modeled because of a lack of historical data, creating an insurmountable obstacle to accurate pricing. Further, business income-related pandemic losses are correlated with both financial market losses and other insurance losses, so insurers cannot mitigate pandemic-related business continuity losses through diversification. Fear of additional economic losses from COVID-19 variants continues to cause financial market turmoil to this day.[23] Consequently, private insurance markets will not be able to offer affordable, widely available commercial insurance products that insure against business continuity risks from pandemics. Comprehensive government programs designed to directly address large scale business continuity losses from pandemics are necessary to address this risk prospectively and could, over time, potentially encourage the innovation of limited specialized pandemic coverages by private insurers and reinsurers.

Potential pandemic losses can easily exceed the insurance industry's capital, surplus and premium resources, posing a systemic risk to the industry and the overall economy.

Business Continuity Coverage: Purpose and Function

It is critical to note that business income coverage is not today and has never been intended to function as an extension of government macroeconomic stabilization policy. Simply stated, business income insurance is an optional coverage available to businesses purchasing commercial property insurance, the terms of which are dictated by very precise and legally binding contract language. Specifically, business income payments are triggered only if there is a suspension of operations caused by direct physical loss of or damage to insured property and such loss or damage is caused by a covered cause of loss.[24] During the early stages of the pandemic, misunderstandings on the part of some businessowners—and confusion sown by some plaintiff attorneys—led to thousands of lawsuits against insurers contending that the loss of income suffered by businesses was covered under such policies. Overwhelmingly, courts have rejected these arguments, citing the lack of direct physical loss or damage to covered property.[25] Courts overwhelmingly reached this result whether the underlying policy included an explicit virus exclusion or not. Such coverage was not priced, and no premium was collected for it.

Business income coverage is not today and has never been intended to function as an extension of government macroeconomic stabilization policy.

Why Pandemic Risks Are Inherently Uninsurable

Pandemic risk differs significantly from other types of disasters such as hurricanes, tornadoes, and wildfires. Each of these natural disasters impacts a limited number of policyholders for a limited period. The property and business continuity losses associated with hurricanes, for example, are largely a coastal phenomenon with damaging winds typically dissipating over the span of hours. In contrast,

23 On July 19, 2021, the Dow Jones Industrial Average tumbled 725 points (2.1 percent), the largest drop since October 2020, while simultaneously the yield on the 10-year U.S. Treasury note fell to 1.181 percent, its lowest close since February 2021. See Hirtenstein, A., "Bond Yields Sink to February Lows as Growth Fears Mount," *Wall Street Journal*, accessed July 19, 2021 at: **https://www.wsj.com/articles/bond-yields-sink-to-february-lows-as-growth-fears-mount-11626701771**.

24 ISO Business Income (and Extra Expense) Coverage form CP 00 30 04 02.

25 University of Pennsylvania, Covid Coverage Litigation Tracker, **https://cclt.law.upenn.edu**.

business continuity losses arising from pandemics, by definition, have the potential to impact virtually all policyholders, irrespective of location and nearly simultaneously, with losses continuing over the span of months or even years. The resulting accumulation of losses of the many (rather than the few) prevents the pooling and redistribution of those losses, as essentially all policyholders are impacted. Stated differently, pandemic risk cannot be spread, shared, or diversified across policyholders. The National Association of Insurance Commissioners (NAIC), which represents insurance regulators in the United States, issued a statement to Congress at the beginning of the March 2020 peak stating that,

> *Insurance works well and remains affordable when a relatively small number of claims are spread across a broader group, and therefore it is not typically well suited for a global pandemic where virtually every policyholder suffers significant losses at the same time for an extended period. While the U.S. insurance sector remains strong, if insurance companies are required to cover such claims, such an action would create substantial solvency risks for the sector, significantly undermine the ability of insurers to pay other types of claims, and potentially exacerbate the negative financial and economic impacts the country is currently experiencing.*[26]

Given the characteristics of pandemic losses and their financial impact on world economies, insurers and reinsurers will likely have no alternative but to continue to be unable to provide coverage for virtually all future pandemic exposures from insurance policies and reinsurance treaties.[27] These financial and underwriting obstacles underscore the near impossibility of commercially insuring pandemic risk and further affirm the critical role of government in managing the economic consequences of pandemic risk.

A growing body of research confirms what insurers already knew—pandemic risks are, in general, not commercially insurable. Examples include:

- A May 2021 report from the Wharton Risk Center asserts that "The scale, correlations, and complexity of pandemic risk, as evidenced by ongoing COVID-19 losses, far exceed traditional parameters that define the concept of insurability for private insurers and reinsurers…"[28]
- An April 2021 study by the Geneva Association, concludes that "Pandemic business continuity risk was, in general, never possible nor intended to be covered by the private-sector insurance market."[29]
- A September 2020 in the Geneva Risk and Insurance Review examines the virtually non-existent history of pandemic insurance products, finding that "…unlike other economically destructive natural phenomena such as hurricanes, earthquakes and wildfires, the losses from which are substantively financed by private insurers, very little private insurance exists to manage the financial consequences of pandemic risk. Indeed, very few products have ever been brought to market by private property-casualty insurers."[30]

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26 National Association of Insurance Commissioners, *NAIC Statement on Congressional Action Relating to COVID-19*, **https://content.naic.org/article/statement_naic_statement_congressional_action_relating_covid19.htm**.

27 Insurers may exclude coverage for viral pandemics either by adopting an exclusion endorsement or by not specifically identifying viral pandemics as covered exposures within the "four corners" of the insurance contract. Irrespective of the presence of an exclusion for viral pandemics, the principle that an exposure outside the description of covered risks is not insured still applies.

28 Kunreuther, H. and Schupp, J., "**Framework for Evaluating the Role of Insurance in Managing Risk of Future Pandemics**," Wharton Risk Center, University of Pennsylvania, May 2021.

29 Schanz, K., "Public-Private Solutions to Pandemic Risk: Opportunities, Challenges and Trade-Offs," The Geneva Association, April 2021. Accessed at: **https://www.genevaassociation.org/sites/default/files/research-topics-document-type/pdf_public/pandemic_risks_report_web.pdf**.

30 Hartwig, R., Niehaus, G. and Qiu, J. 2020. *Insurance for Economic Losses Caused by Pandemics*. Geneva Risk and Insurance Review. 45 (2).

Criteria for Insurability

The insurability of risk traditionally rests upon six criteria, summarized in Figure 9 and listed below:[31]

- **i.** A risk must consist of a large number of exposure units so that the losses of the few can be distributed across the entire population of policyholders.
- **ii.** Losses must be accidental/random and unintentional in nature.
- **iii.** Losses must be determinable and measurable, enabling accurate and timely adjustment.
- **iv**. Losses cannot be exceedingly catastrophic or financially ruinous to the risk pool as a whole.
- **v.** The probability of loss must be calculable, which is necessary for the proper modeling and pricing of risk.
- **vi.** The premium charged by insurers to transfer the risk of loss must be economically affordable.

Figure 9: Pandemic–An Insurable Risk?

Requirements of an Insurable Risk	Requirement Met? Yes/No
1. Large number of exposure units	**NO.** While millions of individual businesses suffered business continuity losses arising from the COVID-19 pandemic, the pandemic's effects were global in scale and nearly simultaneous in scope, effectively reducing the number of exposure units to one—the business sector collectively.
2. Accidental/Random and unintentional loss	**NO.** Pandemics are natural phenomena but the decisions by thousands of policymakers at all levels of government to close millions of businesses and restrict the movement of people was intentional.
3. Determinable and measurable loss	**NO.** For insurers to determine losses, the scale and scope of losses for any given risk must be estimable. Business continuity losses from COVID-19, estimates for which remain highly uncertain and range into the trillions of dollars, are indeterminable due to their dependence on decisions made by thousands of policymakers at all levels of government, the pace at which consumers and businesses reengage in the economy and epidemiological developments.
4. No (ruinous) catastrophic loss	**NO.** Unlike traditional catastrophe risks, pandemics by definition threaten all or most or the members of the risk pool simultaneously. The rapid aggregation of losses is destabilizing and potentially ruinous, threatening the solvency of individual insurers and the industry as a whole.
5. Calculable chance of loss	**NO.** Pandemics have occurred throughout history but the policy response to COVID-19 is without precedent. Insurers traditionally rely on historical loss information and trends to estimate the frequency and severity (cost) for risks they insure. No such historical data exists for the policy response associated with the COVID-19 pandemic, hence premiums cannot be determined.
6. Economically feasible premium	**NO.** Because pandemics by definition threaten all or most or the members of the risk pool simultaneously, the probability of loss is close to certainty. The high probability of loss combined with high claim severities necessarily lead to premiums that can approach or even exceed the cost of the claim itself.

31 Rejda, G. and M. McNamara. (2017). *Principles of Risk Management and Insurance*. (13th edition). Pearson.

The inability of a risk to meet one or more of these criteria reduces or eliminates its insurability. Pandemic risk violates all six criteria. In technical terms, the violation of these criteria prevents the pooling and redistribution of the losses of the few across the many. In terms of business continuity risk specifically, pandemics produce risks that are undiversifiable, unquantifiable, potentially ruinous, unaffordable and—importantly—intentionally created.

The extreme uncertainty associated with pandemic events is inconsistent with several of the basic requirements of insurability. Pandemics are infrequent events of unknown duration and severity. Current estimates of COVID-19's economic impact vary by trillions of dollars, while estimates of potential insured losses vary by billions of dollars. Actuarial models used to estimate claim frequency and severity, establish claim reserves, and determine premiums relying heavily on historical data, which is essentially non-existent in the context of pandemics. Because insurers lack even the most basic information necessary to measure and price pandemic risk, pandemics remain largely uninsurable in the private sector.

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While the ultimate economic and insured losses for COVID-19 will remain uncertain for years to come, there is universal agreement that those costs are extremely high, largely because pandemics threaten virtually all members of the risk pool (i.e., all businesses) simultaneously. As noted in Figure 9, if the probability of a claim is near certainty, the premium charged will be unaffordably high—likely approaching or even exceeding the expected loss itself.

Insurability also requires that the risk be fortuitous in nature. Fortuity means that losses are accidental or random and unintentional. While pandemics are naturally occurring events, decisions to close millions of businesses and severely restrict the movement of people are intentional and deliberate, resulting in trillions of dollars in economic loss. Likewise, the decision by consumers to withdraw from economic activity based on fear of contracting disease is an individual choice. Insurers can only assume that governments and consumers will make similar decisions during future pandemic events (including severe outbreaks of COVID-19 variants). Similarly, decisions by state and local governments on when and how to reopen their economies and by millions of individual business owners and customers about when and how to reengage in economic activity are also deliberate. These deliberate decisions account for the majority of economic losses arising from the COVID-19 pandemic. In other words, virtually none of the business income losses sustained during the pandemic were the result of direct physical loss or damage to property from a covered cause of loss. Unless business income losses are triggered as such, the losses are beyond the scope of business interruption policies and are not covered.

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Summary

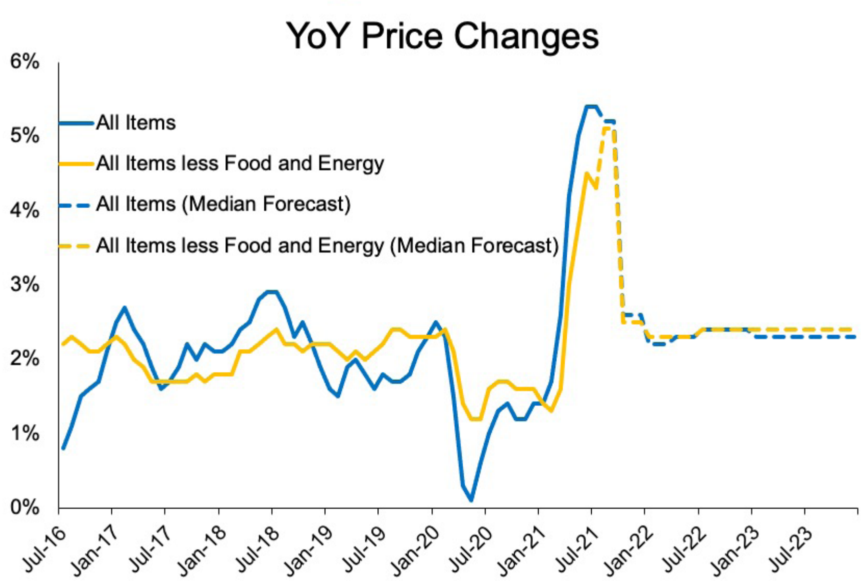
The extraordinary human tragedy of the COVID-19 pandemic has been accompanied by a global economic catastrophe. The rapid spread of the coronavirus around the world in 2020 and ongoing battles with virulent new strains in 2021 have resulted in the loss of trillions of dollars of economic output and millions of jobs.

This paper examines the many and varied types of economic losses in the United States from COVID-19 and highlights the essential role that fiscal stimulus plays in promoting economic stabilization. An analysis of the macroeconomic shocks triggered by the pandemic—and likely future pandemics—demonstrates that only government is capable of marshalling the financial and logistical resources necessary to combat economic dislocations of this magnitude and the infeasibility of substituting private insurance for federal macroeconomic fiscal relief.

The experience of COVID has reinforced the generally accepted view that large-scale business income losses arising from pandemics are uninsurable in the private sector. Such losses are driven largely by shifts in aggregate demand and consumer behavior, not actual property damage. Given nearly two years' experience with COVID in the United States and around the world, it is clear that the repeated, aggressive application of targeted yet flexible relief in the form of both fiscal and monetary stimulus has been effective in countering many of the most severe negative economic consequences associated with the pandemic.

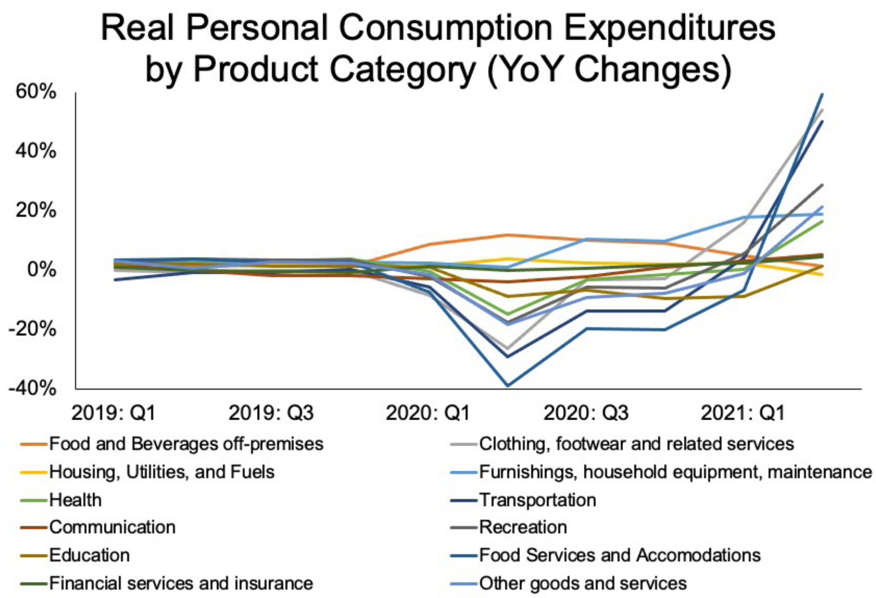
Appendix: Additional Materials

Figure 10: Increasing Inflation



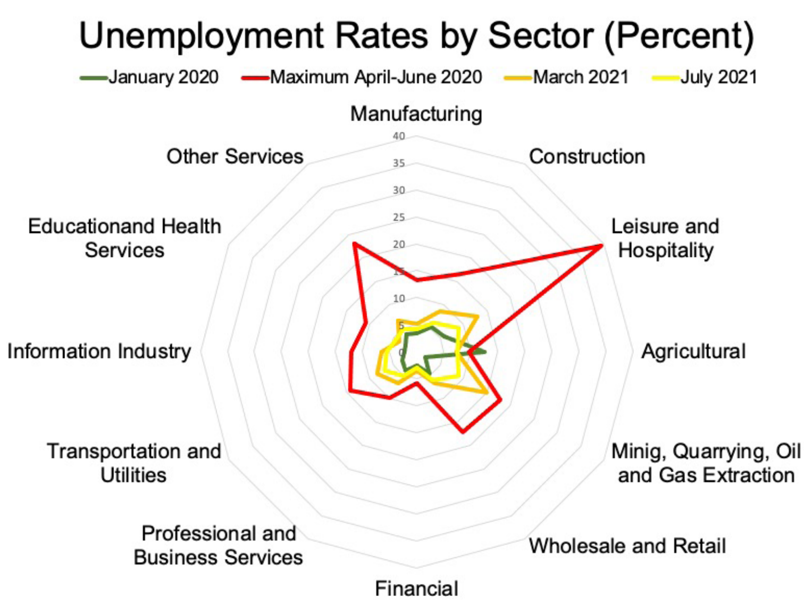
Source: Bureau of Labor Statistics; Philadelphia Federal Reserve.

Figure 11: Different Sectors Are Affected Unevenly



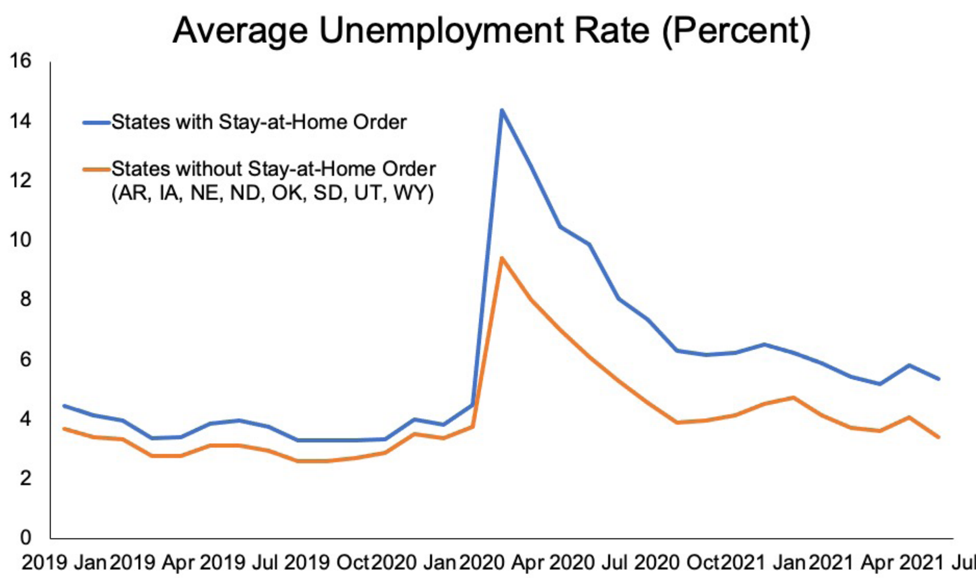
Source: Bureau of Economic Analysis.

Figure 12: Different Sectors Are Affected Unevenly



Source: Bureau of Labor Statistics.

Figure 13: Effects of Government Mandated Closures



Source: Bureau of Labor Statistics; USA Today.