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December 2023

PANDEMIC RISK

Federal Insurance Approaches Would Entail Costs to Taxpayers and Businesses Might Not Participate

Accessible Version

GAO-24-106075

GAO Highlights

Highlights of GAO-24-106075, a report to congressional addressees

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Why GAO Did This Study

Businesses across the United States experienced disruptions, declines in demand, and mandated closures during the COVID-19 pandemic. Emergency relief programs enacted in 2020 and 2021 provided about $4.6 trillion for pandemic response and recovery, with about $1.2 trillion going to small businesses in the form of loans and grants. The potential for very large losses raises the question of what role insurers and the federal government might play in a future pandemic.

The CARES Act includes a provision for GAO to monitor federal efforts related to COVID-19. This report examines (1) the role insurance played addressing pandemic business losses, (2) benefits and challenges of federal insurance approaches for addressing such losses, and (3) benefits and challenges of federal noninsurance approaches for addressing such losses.

GAO analyzed information on insurance claims and reviewed criteria for insurability, proposals for federal pandemic insurance programs, and related academic and industry studies. To identify and obtain views on the benefits and challenges of federal insurance and noninsurance approaches, GAO reviewed academic and other studies, including GAO reports. GAO also held two panel discussions and multiple interviews with insurance industry participants and experts, among others.

View GAO-24-106075. For more information, contact Alicia Puente Cackley at (202) 512-8678 or cackleya@gao.gov.

What GAO Found

Private insurance played a limited role in addressing business losses from the COVID-19 pandemic. Some businesses turned to business interruption coverage to recoup losses. But insurers generally did not pay pandemic-related claims, because nearly all policies required physical damage to property. Insurers paid some pandemic-related claims in other property/casualty lines, including event cancellation and workers' compensation. Many insurers since have reduced their exposure to pandemic risk, primarily by adding physical damage requirements or virus exclusions or removing previously available virus coverage. Actuaries, insurance experts, insurers, and reinsurers generally agree pandemic risk—which involves potentially large, widespread, and difficult-to-predict losses—is largely uninsurable because it does not meet key insurability criteria.

In a potential federal pandemic insurance program, the government could (1) share risk with insurers or (2) assume all the risk, with insurers acting as administrators. Either approach could have benefits but also likely would face challenges in efficiently providing widespread, affordable coverage to businesses and achieving other desired policy goals.

- Risk-sharing could help reduce federal fiscal exposure and promote a larger private market for pandemic insurance. However, stakeholders agreed that given the magnitude of potential losses (estimated at more than $1 trillion based on the experience with COVID-19), insurers might be able to assume only a small share of the risk.
- Both approaches could make premiums affordable, but doing so likely would require large subsidies or financial assistance to businesses. While some businesses might buy coverage, others might forgo coverage, because they believed another pandemic would not happen soon or would expect other government assistance if it did.
- Both approaches could promote risk mitigation and leverage insurers' claims-processing expertise. But insurers told GAO that processing millions of claims in a short time could be costly and challenging for the industry.

Given these potential difficulties, Congress also could consider other (noninsurance) responses to the next pandemic, as it did in response to COVID-19. These options (such as a program to help businesses pay operating expenses) could be costly but reach millions of businesses quickly. But distributing assistance quickly without proper controls could leave programs at risk of improper payments and fraud.

Experiences of COVID-19 emergency assistance programs in the United States and other nations provide important insights on how the federal government could improve its response to future pandemics. For instance, the government could share risk or program costs with private entities such as businesses or banks, implement measures to prevent improper payments and fraud (as GAO recommended in multiple reports), and proactively plan for the next pandemic to reduce uncertainty.

Contents

Abbreviations

COVID-EIDL	COVID-19 Economic Injury Disaster Loan
NAIC	National Association of Insurance Commissioners
PPP	Paycheck Protection Program
SBA	Small Business Administration

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U.S. GOVERNMENT ACCOUNTABILITY OFFICE
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December 19, 2023

Congressional Addressees

Many U.S. businesses experienced supply shortages, declining demand for their products and services, and other disruptions during the COVID-19 pandemic.[1] In addition, government-mandated closures and other measures taken to limit the spread of the virus significantly disrupted economic activity worldwide. COVID-19 relief laws enacted in 2020 and 2021 provided about $4.6 trillion of federal funding for pandemic response and recovery. Of this, about $1.2 trillion went to assist small businesses in the form of loans and grants.

Insurance has played a key role in the recovery process for businesses after other extreme events, such as hurricanes or earthquakes. However, insurance industry stakeholders and others have questioned whether insurance can play a similar role with pandemic events. Many have said that the potential for very large losses occurring concurrently make such risk uninsurable in the private market, raising the question of whether the federal government has a role in making pandemic insurance available to businesses.

The CARES Act includes a provision for us to report on efforts to prepare for, respond to, and recover from the COVID-19 pandemic.[2] For this report, we examined the (1) role private-sector insurance played in helping businesses address pandemic-related losses, (2) benefits and challenges of federal insurance approaches for addressing pandemic business losses, and (3) benefits and challenges of noninsurance approaches for addressing pandemic business losses.

[1]On January 31, 2020, the Secretary of Health and Human Services declared a public health emergency for the United States, retroactive to January 27. On March 11, 2020, the World Health Organization characterized COVID-19 as a pandemic. According to the Centers for Disease Control and Prevention, a pandemic refers to a disease event in which more cases of the disease than expected spread over several countries or continents, usually involving person-to-person transmission and affecting a large number of people. The U.S. public health emergency ended on May 11, 2023.

[2]Pub. L. No. 116-136, div. B, § 19010, 134 Stat. 281, 579-81 (2020). All of GAO's reports related to the COVID-19 pandemic are available on GAO's website at https://www.gao.gov/coronavirus.

To address the first objective, we analyzed reports from the National Association of Insurance Commissioners (NAIC) and National Council on Compensation Insurance on business interruption coverage and COVID-19-related insurance claims and University of Pennsylvania data on contested claims. We also interviewed insurers, insurance brokers, and other industry participants. To address the second and third objectives, we held virtual expert panel discussions with a total of 17 participants to obtain views on the benefits and challenges of federal insurance and noninsurance approaches to address business losses from a pandemic. Panel members included insurance industry participants (insurers, reinsurers, insurance brokers, businesses, or related associations), actuaries, insurance experts, NAIC staff, and government officials. In addition, we identified policy goals, which we used to analyze the benefits and challenges of these approaches.

For these objectives, we also compared characteristics of pandemic business risk to accepted actuarial criteria for insurability, analyzed industry and other proposals for federal pandemic insurance programs, and reviewed academic and other studies. We also reviewed prior GAO work on federal insurance programs and COVID-19 assistance. Appendix I describes our scope and methodology in greater detail.

We conducted this performance audit from May 2022 to December 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Effects of the COVID-19 Pandemic on U.S. Businesses

The COVID-19 pandemic and related government policies that limited certain economic activities had a rapid and severe effect on the U.S. and global economies. Nearly all U.S. states implemented policies to limit social contact and slow the spread of the pandemic. These policies had the effect of limiting certain economic activities and closed many nonessential businesses. Reduced consumer demand early in the pandemic also led to both temporary and permanent business closures, particularly among small businesses. The resulting business closures contributed to immediate and substantial job losses and losses in revenue for those businesses. Unemployment rose from 5.8 million persons in January 2020 to a peak of 23 million in April 2020.[3] Industrial production, retail sales, and personal income fell dramatically during this period.

Although the pandemic affected all sectors of the U.S. economy, some of the most impacted sectors included (1) accommodation and food services; (2) arts, entertainment, and recreation; (3) educational services; (4) health care; (5) manufacturing; and (6) retail trade.[4]

Insurance Lines for Interruptions to Business Operations

Several lines of property/casualty insurance can cover losses related to an interruption in business operations.

- **Business interruption insurance** covers losses a business incurs when it is unable to open for a period of time.[5] Coverage is generally triggered when a covered event results in physical loss or damage and causes a business to shut down for a minimum specified period, generally 2 or 3 days. An insurer typically then pays the policyholder an amount that represents lost net income and some ongoing operating expenses for the duration of the suspension of business operations, up to a specific dollar limit and amount of time (typically up to 12 months). Business interruption claims often take months or even years to be fully settled. There is an initial waiting period, after which lost income must be determined, and payment typically is made after the business closure has run its course. Business interruption policies

[3]Bureau of Labor Statistics, Unemployment Level (UNEMPLOY), retrieved from FRED system, Federal Reserve Bank of St. Louis, accessed October 10, 2023, https://fred.stlouisfed.org/series/UNEMPLOY.

[4]In a previous report, we used information from the 2020 Bureau of Labor Statistics' Business Response Survey to identify sectors that were most likely to experience adverse effects to business operations as a result of the pandemic. See GAO, *Paycheck Protection Program: Program Changes Increased Lending to the Smallest Businesses and in Underserved Locations*, GAO-21-601 (Washington, D.C.: Sept. 21, 2021).

[5]Larger businesses tend to buy business interruption policies tailored to their needs. If smaller businesses purchase business interruption coverage, they typically do so through business owners' policies. Businesses with 100 or fewer employees or with revenues of $5 million or less are eligible for these policies, which often include coverage for general liability, property, and business interruption. According to an insurance association, businesses are typically guided by their agents and brokers when determining the type and amount of coverage to purchase.

can enumerate specific risks that are covered or can be "all risk" policies that cover any risks not explicitly excluded.

- **Event cancellation insurance** protects a business against expenses or lost revenue resulting from cancellation or postponement for reasons beyond the business's control. Events can include conferences, concerts, conventions, sporting competitions, and festivals, and policies can cover causes such as severe weather, venue unavailability, and labor strikes.
- **Cast and production insurance** covers additional expenses an entertainment industry production must pay to continue operating, including production delays due to loss of cast or crew, or repair of damaged sets.
- **Workers' compensation insurance** is among the lines of property/casualty that cover costs related to a business's potential liability for actions it takes or events that occur on its premises.[6] It protects a business owner from claims by employees who experience a work-related injury or illness sustained on business premises or caused by business operations. Workers' compensation, which differs depending on state law, typically covers the employee's medical expenses, rehabilitation costs, and at least some portion of lost wages. The coverage is mandatory for most employers in every state except Texas, according to NAIC.

Traditional insurers, sometimes referred to as admitted insurers, can be licensed to sell several lines or types of coverage to individuals or businesses.[7] State insurance regulators oversee admitted insurers, including for licensing (to do business in the state), financial solvency, market conduct, and rate setting. For example, the regulators analyze financial records of insurance companies licensed to do business in their

[6]Besides workers' compensation insurance, several other property/casualty insurance lines cover costs related to a business's potential liability for actions it takes or events occurring on its premises, which could be relevant to a pandemic event. For example, commercial general liability insurance protects businesses from a variety of claims that can arise during business operations, including allegations of negligence (in relation to protecting their customers from harm). Directors and officers insurance protects members of an organization's board of directors and executives against personal loss if they are sued for their actions, including for allegations that a company's response in a given situation was inadequate or that company statements about exposure to certain situations were misleading and caused financial injury to shareholders. Finally, trade credit insurance insures a business's accounts receivable against the risk of default or insolvency of a counterparty in a transaction.

[7]"Admitted insurer" means, with respect to a state, an insurer licensed to engage in the business of insurance in such state. 15 U.S.C. § 8206(1).

state to determine if the insurers are financially sound. In many states, regulators have the authority to disapprove rates for commercial property/casualty lines (with the exception of workers' compensation) if they determine a competitive environment among insurers does not exist.

Nonadmitted insurers, sometimes referred to as surplus lines insurers, can provide insurance coverage for risks that admitted insurers are unwilling or unable to cover. These risks can include potentially catastrophic property damage and liability associated with high-hazard products, special events, environmental impairment, and employment practices.[8]

Nonadmitted insurers generally are regulated somewhat differently than admitted insurers. According to NAIC, surplus lines insurers are subject to regulatory requirements and are overseen for solvency by their domiciliary state (the state in which they were incorporated) or country, but surplus lines transactions are regulated through the licensing of surplus lines brokers.[9] In addition, surplus lines insurers generally have more freedom to change policy coverages and premium rates than admitted insurers, according to NAIC. State regulators require both nonadmitted and admitted insurance companies to maintain specific levels of capital to continue to conduct business. Unlike with admitted insurers, surplus lines policyholders may not have access to state guaranty funds that are available to help pay claims in the event of an insurer insolvency.

[8]In most states, surplus lines insurers cannot write insurance coverage that is available from admitted insurers and only may write coverage rejected by a number of admitted insurers, according to NAIC.

[9]NAIC states these brokers are responsible for ensuring that the surplus lines insurer meets eligibility criteria to write policies in the state and is financially sound. State insurance departments may have authority to suspend, revoke, or not renew the license of a surplus lines broker or producer.

Federal Support to Businesses during the COVID-19 Pandemic

Congress enacted six COVID-19 relief laws that, in part, provided funding for several programs to help businesses.[10] Several federal agencies administered the programs, including the Small Business Administration (SBA), which delivered $1.2 trillion to small businesses through the Paycheck Protection Program (PPP), COVID-19 Economic Injury Disaster Loan program (COVID-EIDL), Restaurant Revitalization Fund, and Shuttered Venues Operators Grant Program.[11] Other federal support to workers or businesses included expanded and enhanced unemployment insurance benefits for individuals, tax relief measures for businesses, and payroll and other support for the aviation industry and transportation services.[12]

[10]In 2020 and 2021, Congress passed the following laws providing COVID-19 relief: American Rescue Plan Act of 2021, Pub. L. No. 117-2, 135 Stat. 4; Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, 134 Stat. 1182 (2020); Paycheck Protection Program and Health Care Enhancement Act, Pub. L. No. 116-139, 134 Stat. 620 (2020); CARES Act, Pub. L. No. 116-136, 134 Stat. 281 (2020); Families First Coronavirus Response Act, Pub. L. No. 116-127, 134 Stat. 178 (2020); and Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020, Pub. L. No. 116-123, 134 Stat. 146.

[11]PPP delivered $792 billion in forgivable loans to eligible small businesses and nonprofit organizations to provide economic support due to the pandemic, and COVID-EIDL provided over $405 billion loans and advances. The Restaurant Revitalization Fund provided about $29 billion in award funds to businesses in the food service industry to use for eligible expenses such as payroll, business debt, maintenance, or construction of outdoor seating. The Shuttered Venue Operators Grant program provided about $15 billion in grant funds primarily to live performing arts and entertainment businesses to use for eligible expenses such as payroll, rent or mortgage, and utility payments. See Small Business Administration, *Protecting the Integrity of the Pandemic Relief Programs: SBA's Actions to Prevent, Detect and Tackle Fraud* (Washington, D.C.: June 2023).

[12]From March 2020 through April 30, 2023, the six COVID-19 relief laws provided over $4.6 trillion to help the nation respond to and recover from the pandemic.

Insurability Criteria

Insurability refers to the feasibility of creating insurance contracts to transfer risk from policyholders to insurers. Actuarial criteria for insurability include the following:[13]

- **Fortuitous:** The timing and location of future events that might trigger a loss must be uncertain and accidental.
- **Measurable:** Losses must be well defined and verifiable upon occurrence.
- **Independent:** Policyholders within the portfolio must be independent from each other, or at least have very weak correlation. That is, the same event generally should not cause losses for multiple policyholders.
- **Market-bearable:** The maximum possible losses in an accident year from the insured event must not be so excessive that insurance markets cannot absorb them.
- **Predictable:** Ideally, losses must be estimable, which requires a sufficient number of policyholders across a sufficiently large number of historical events to be used as sample data.

When insurers cannot meet the insurability criteria for a specific risk, they are more likely to have difficulty offering coverage or may not offer coverage at all.

[13]Aditya Khanna, Brian A. Fannin, and Tim Wei, "On Insurability and Transfer of Pandemic Business Interruption Risk," *Casualty Actuarial Society Research Brief* (2021). The brief summarizes criteria for insurability established and explained in actuarial literature. It notes that some insurance products do not meet all the criteria (such as products made possible or offered with the support of public funds). The authors identify two additional economic criteria, which state that coverage should be fair (there should be very limited potential for adverse selection or moral hazard in the policy portfolio) and affordable (the price of coverage must be attractive to both insurers and policyholders). Adverse selection occurs when businesses that would be most affected by the covered event disproportionately enroll in coverage. Moral hazard is the potential that having insurance coverage results in policyholders acting in a riskier way or failing to take steps to minimize losses.

Private Insurance Played a Limited Role in Addressing Pandemic Business Losses

Business Interruption Insurance Mostly Did Not Address COVID-19 Losses, but Other Lines Offered Coverage

According to one report, global insured pandemic-related losses resulted in payment of about $35 billion in property/casualty insurance claims by October 2021.[14] This represented less than 1 percent of the total economic impact of the pandemic, leaving an overwhelming portion of losses not covered by insurance.

Business Interruption Insurance

Most business insurance policyholders did not have coverage for business interruption, and the vast majority of policies with coverage required physical loss or excluded losses attributed to viruses and other microorganisms. According to NAIC, about 30–40 percent of small businesses purchase business interruption coverage.[15] Generally, business interruption insurance did not cover pandemic losses because typical coverage requires physical loss or damage to commercial property to pay a claim, and insurers did not consider COVID-19 to have caused

[14]Howden Broking Group Limited, *Times Are A-Changin'* (London, England: Jan. 4, 2022); https://www.howdengroup.com/sites/g/files/mwfley566/files/2022-01/Howden-times-are-a-changin-report-20220104-FINAL.pdf.

[15]We estimated that 36 percent of commercial premiums written in 2019 corresponded to premiums for policies with business interruption coverage. In addition, the Insurance Services Office—a licensed advisory organization that serves as an appointed statistical agent for multiple states—estimated that about 40 percent of multiline commercial policies had some level of business interruption coverage in 2018. This estimate was based on insurer data representing approximately 50 percent of the property/casualty insurance market. In its analysis, the office found that 29.5 percent of small businesses, 53.5 percent of mid-sized businesses, and 76.8 percent of large businesses had business interruption coverage in 2018. The office defined small businesses by the portion of the premium corresponding to fire coverage: less than $1,000 were categorized as small, those of $1,000–$9,999 were categorized as medium, and $10,000 and over were large. It also found the number of policies with such coverage in urban areas was three times that of rural areas.

physical loss or damage.[16] According to NAIC data, as of December 31, 2019, about 98 percent of traditional business interruption policies required physical loss.[17] The data also show that about 83 percent of policies had virus exclusions.[18] In addition, 98 percent of the policies with business interruption coverage were for small or medium businesses. This is consistent with SBA's estimate of the percentage of all businesses with 500 or fewer employees.[19]

Relatively few policyholders with business interruption insurance filed pandemic-related claims, and insurers paid out on very few of those claims. According to NAIC data, less than 3 percent of such policyholders (about 210,000 policies) filed pandemic-related claims from January through November 2020. Of those claims, less than 2 percent (or about 3,600 claims) were closed with payment by the insurer. Insurers paid an average of $115,000 per claim, for a total of about $420 million as of November 2020.

Some policyholders contested business interruption claims denied by the insurer, but as of October 23, 2023, courts generally ruled in favor of insurers in each case's most recent decisions. According to data from the University of Pennsylvania's COVID Coverage Litigation Tracker, businesses brought 2,389 court cases related to insurers' denied

[16]Before the pandemic, a robust market did not exist for nondamage business interruption insurance (that is, coverage that did not require physical damage to a property). One such product became available in 2018 when Munich Re, Marsh, and Metabiota jointly offered a product called PathogenRX, but only one policy was sold.

[17]In April 2020, NAIC issued a data call to the insurance industry in 48 states, the Virgin Islands, and the District of Columbia requesting data from June through November 2020 to understand the relative size of the U.S. business interruption insurance market, the extent of exclusions related to the COVID-19 pandemic, and potential pandemic-related insured losses due to business interruption coverage. New Mexico and New York did not participate in the data call.

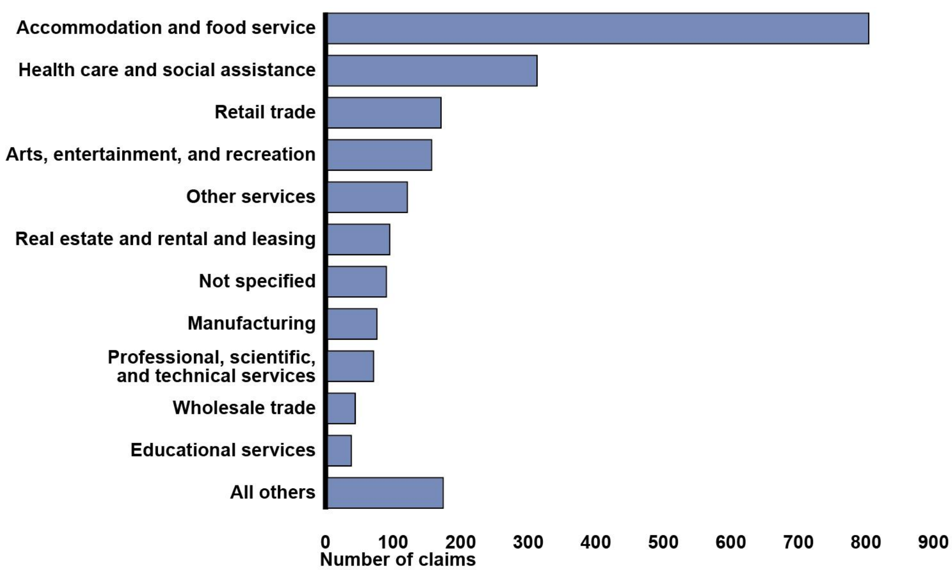
[18]In 2006, following the 2003 outbreak of severe acute respiratory syndrome, the Insurance Services Office (which also provides the insurance industry with standardized policy forms and endorsements) introduced a virus and bacteria exclusion for commercial property lines.

[19]NAIC specifies business size by number of employees. Small businesses have 100 or fewer employees, medium businesses have 101–500 employees, and large businesses have 501 or more employees. In 2023, SBA estimated that 99 percent of all U.S. businesses had 500 or fewer employees.

pandemic-related claims of any type.[20] Policyholders from all except six states contested claims denied by the insurer by filing court cases, but nine states each had at least 100 cases, representing 72 percent of all cases, according to the University of Pennsylvania data.[21] Over 90 percent of these cases included business interruption insurance among the coverages insurers had denied.[22]

As seen in figure 1, the largest percentages of claims contested in courts were from the accommodation and food service (37 percent), health care and social assistance (about 15 percent), retail trade (about 8 percent) and arts, entertainment, and recreation (7 percent) sectors—all highly affected by the pandemic.

Figure 1: Pandemic-Related Business Interruption Insurance Claims Contested in Courts, by Industry Sector (March 2020–October 2023)



Source: GAO analysis of the University of Pennsylvania's COVID Coverage Litigation Tracker data. | GAO-24-106075

[20]As of October 23, 2023, the tracker could be accessed at https://cclt.law.upenn.edu/. This dataset contains all federal cases but may not capture all state cases because of the fragmented and incomplete nature of state court electronic filing and data sharing.

[21]These states were California, Florida, Illinois, New Jersey, New York, Ohio, Pennsylvania, Texas, and Washington.

[22]About 4 percent of cases were for denied event cancellation claims.

Accessible Data for Figure 1: Pandemic-Related Business Interruption Insurance Claims Contested in Courts, by Industry Sector (March 2020–October 2023)

Industry sector	Number of claims
Accommodation and Food Service	804
Health Care and Social Assistance	313
Retail Trade	171
Arts, Entertainment, and Recreation	157
Other Services	121
Real Estate and Rental and Leasing	95
Not Specified	90
Manufacturing	76
Professional, Scientific, and Technical Services	71
Wholesale Trade	44
Educational Services	38
All Others	174

Source: GAO analysis of the University of Pennsylvania's COVID Coverage Litigation Tracker data. | GAO-24-106075

Most cases of contested business interruption claims (about 65 percent) were filed in federal courts, and federal appellate courts ruled in favor of insurers in all the cases' most recent decisions, according to the University of Pennsylvania data. The remaining cases were filed in state courts. In their most recent rulings, state appellate-level courts in three states (Vermont, Pennsylvania, and California) ruled in favor of policyholders in at least one case each, although some of these cases were not fully resolved as of October 23, 2023. As of the same date, in 21 states and the District of Columbia, all the most-recent appellate-level court rulings went in favor of insurers.[23]

Some states sought to help policyholders by urging or requiring insurers to clarify which COVID-19 losses were and were not covered under their existing insurance policies. For example, in March 2020, state insurance regulators in New York required insurers to inform policyholders about whether their insurance policies covered COVID-19 losses, and to what extent. In May 2021, New Jersey enacted a law that requires insurers and the New Jersey Department of Banking and Insurance to explain business interruption insurance to policyholders.

[23]Appellate courts in the remaining 26 states had not issued a decision as of October 23, 2023.

Event Cancellation Insurance

Insurers paid some claims on event cancellation insurance policies, although comprehensive U.S. data on event cancellation claims are not publicly available.[24] According to specialty insurers, brokers, and businesses, before the COVID-19 pandemic insurers typically offered a virus endorsement—that is, an option providing coverage for communicable diseases or other specific risks.

One example of large U.S. events covered by event cancellation insurance was the National Collegiate Athletic Association's 2020 winter and spring championships. In March 2020, these events, including the annual men's March Madness basketball tournament, were cancelled due to the COVID-19 pandemic. The tournament had been expected to bring in more than $800 million, and the association received a $270 million payout.[25]

According to the Business Continuity Coalition, which represents business insurance policyholders, event cancellation coverage is critical for nonprofit associations because they often rely on events for fundraising. One representative from a nonprofit association told us the association received a pandemic-related payment from its event cancellation coverage, which it typically buys to insure against unforeseen cancellations of its conferences.

Workers' Compensation Insurance

Insurers generally paid pandemic-related claims on workers' compensation policies. Workers' compensation insurance generally has no exclusions except for losses caused by war, but losses caused by communicable diseases traditionally have not been payable under this

[24]Globally, as of February 2022, insurers and reinsurers paid $6.5 billion for event cancellation claims due to the pandemic, according to a large insurance broker.

[25]There are also two notable international examples of payouts. The organizers of the Wimbledon tennis tournament in London cancelled the 2020 tournament due to COVID-19 and reportedly received an insurance payout. The organizers of the 2020 Tokyo Olympics postponed the event, originally scheduled for 2020, and reportedly received an insurance payout related to the postponement.

coverage.[26] However, using legislation or executive orders, 20 states established presumptions stating that, for employees in certain roles or with certain responsibilities who contracted COVID-19, it would be assumed they contracted it at their job site, according to the National Council on Compensation Insurance. The presumptions generally covered first responders, healthcare providers, and other essential employees. However, according to the National Council on Compensation Insurance, claims were paid both in states with and without presumptions.

According to the National Council on Compensation Insurance, insurers paid more than $1.1 billion for more than 117,000 COVID-19-related workers' compensation claims in 45 jurisdictions in the United States in 2020 and 2021.[27] Both the number and amount of claims were small compared with non-COVID-19 claims in the same period, largely due to the number of pandemic-related claims for lost wages only (those without a medical payment component). Over 40 percent of COVID-19-related claims were for lost wages only, while most non-COVID-19 claims were for medical only.[28] More than 70 percent of COVID-19-related claims were from the health care sector.

Insurers Have Reduced Exposures to Business Pandemic Losses

The commercial property/casualty market in general hardened before the onset of the COVID-19 pandemic in 2020, and it remained hard as of August 31, 2023, according to industry reports.[29] Insurance and reinsurance premiums increased, and coverage became more restrictive for a number of property/casualty insurance lines. But insurance brokers

[26]According to an insurance association, workers' compensation systems generally did not cover losses due to workers contracting communicable diseases such as influenza (because workers could contract outside of work). Various states have codified that communicable diseases are outside the bounds of coverage. See Andrew Pauley, "COVID-19 Workers' Compensation Presumptions: A Survey and Analysis of Their Indelible Impact," National Association of Mutual Insurance Companies (Dec. 1, 2020).

[27]The National Council on Compensation Insurance, et. al., *COVID-19 and Workers Compensation: Phase II of the Multibureau Collaboration.* The National Council on Compensation Insurance data did not include workers' compensation claims from Massachusetts, New York, North Dakota, Ohio, Washington, and Wyoming.

[28]The average medical payout for COVID-19 claims in 2021 was less than 25 percent of the average medical payout for non-COVID-related claims.

[29]A hardening insurance market generally is characterized by increasing prices and stricter underwriting standards.

noted that premium increases in several broader commercial insurance lines likely were not solely attributable to the pandemic. The brokers reported that inflation and higher-than-normal natural catastrophe and cyber insurance claims in 2020 and 2021 likely contributed to the increase in commercial insurance premiums.[30]

According to stakeholders, property/casualty insurers generally have taken steps to fully restrict or limit their exposures to future pandemic losses since the onset of the COVID-19 pandemic. As a result, some businesses have been operating with more uninsured risk than desired, because coverage is either unavailable or unaffordable.

- Industrywide, insurers and reinsurers generally added or revised physical damage requirements or virus exclusions to their business interruption policies to further clarify they do not cover pandemic events, according to brokers and a reinsurer.
- Endorsements covering communicable disease for some policies, such as event cancellation, generally were no longer available or were available at higher prices and with lowered coverage limits soon after the beginning of the pandemic, according to associations of brokers and policyholders we interviewed. Some large reinsurers still were offering explicit pandemic risk coverage for event cancellation, but the coverage was costly and insufficient to allow insurers to meet policyholder needs, according to brokers and policyholders. As a result, some policyholders were left holding more of the risk.
- Insurers and reinsurers told us they reviewed various lines of insurance to determine whether correlation of risk in a pandemic—that is, many claims filed at the same time—could produce excess exposure. In response, they made virus exclusions more explicit in those lines to reduce future risk and exposure. Policyholders also told us some insurers expanded exclusions to include any kind of communicable disease or microorganism in any insurance line.

[30]One large broker wrote that the global pandemic, combined with increasing social and political unrest, lower investment yields, increasing concerns about climate change, more frequent catastrophic weather events, and higher losses from such events, heightened risk aversion worldwide. Howden Insurance Brokers Limited, *Hard Times* (London, England: Jan. 4, 2021).

In response to the tightened insurance market, businesses increasingly have created captive insurance companies.[31] For example, a major insurance broker reported a historic increase in the number of captives in 2020, which continued into 2021 and 2022. The growth occurred in multiple business sectors. The broker reported that existing captives also saw increased premium growth in this time frame, suggesting organizations were transferring more of their risk to the captive companies. Types of coverages purchased through captives included event cancelation, liability, and property coverage (which could include business interruption insurance). For instance, the National Collegiate Athletic Association formed a captive insurance company in March 2022 to cover risks typically covered by event cancellation and liability policies.

Proposals to Increase Insurer Response to Pandemics Have Not Been Implemented

Legislators in 16 states and Puerto Rico introduced bills in 2020 or 2021 to require insurers to cover COVID-19 losses under existing business interruption policies, according to an analysis by the National Conference of State Legislatures. Some of these bills would have eliminated virus exclusions, some would have eliminated the physical loss or damage requirement, and some were retroactive. Staff from another insurance association that tracked these bills told us that none of them passed. According to an industry report, some insurance stakeholders have concerns that retroactively modifying insurance contracts could present legal issues, including potential constitutional issues.[32]

Two bills also were introduced in the U.S. House of Representatives, neither of which was enacted. One would have required business interruption insurers to add coverage for pandemic and government-ordered business shutdowns and nullified any current exclusions.[33] The other would have provided support for insurers to voluntarily pay for

[31]Captives are special-purpose insurance companies set up by businesses to self-insure risks arising from the owners' business activities. Forming a captive is not financially feasible for some businesses.

[32]Committee on Capital Markets Regulation, *Pandemic Business Interruption Insurance* (Cambridge, Mass.: 2021).

[33]Business Interruption Insurance Coverage Act of 2020, H.R. 6494 (116th Cong.).

losses due to government-mandated shutdowns for policies that excluded virus coverage.[34]

Early in the pandemic, insurers, insurance industry trade groups, policyholder groups, and Members of Congress developed proposals or concepts to establish a federal insurance program to cover business losses during a pandemic. Several proposals had insurers and the federal government sharing risk, while at least one proposal had the government holding all the risk. None of the programs were implemented.

- The Business Continuity Protection Program, proposed by insurance associations, would cover payroll, benefits, and expense support to the private sector in the event of a federally declared public health emergency. Under this proposal, the government would have held all the risk.
- The Pandemic Business Interruption Program, proposed by a major insurer, would have featured different programs for small businesses (500 or fewer employees), and those businesses with more than 500 employees.
- A draft concept for facilitating pandemic protection, proposed by a major insurer, would have allowed insurers to choose how much risk to bear.
- The Pandemic Risk Insurance Act of 2020, introduced in the House of Representatives as H.R. 7011 in May 2020, would have established a Pandemic Risk Reinsurance Program loosely modeled on the Terrorism Risk Insurance Program.[35]
- The Business Continuity Coalition proposal, proposed by an association of policyholders, would have made coverage for pandemic-related losses available in a broad range of insurance policies.

Stakeholders Regard Business Interruption Risk from Pandemics as Largely Uninsurable

Analyses by actuaries, insurance experts, insurers, and reinsurers generally agree pandemic-related business interruption risk is largely

[34]Business Interruption Relief Act of 2020, H.R. 7412 (116th Cong.).

[35]H.R. 7011 (116th Cong.).

uninsurable because it does not meet several criteria for insurability.[36] In particular, because of the potentially large size of pandemic-related business losses such risk is **not market-bearable**. That is, insurers cannot absorb possible annual business losses from a future pandemic, at least one resembling the COVID-19 pandemic.

For example, the assistance provided by PPP—the largest COVID-related emergency assistance program for businesses—and other major SBA emergency assistance programs exceeded the total capital held by U.S. property/casualty insurers at the end of 2022. Specifically, the programs together provided approximately $1.2 trillion in COVID-related assistance to businesses.[37] In comparison, the U.S. property/casualty insurance industry's available capital was approximately $1 trillion at the end of 2022.[38] However, this total includes capital needed to cover exposures across all property/casualty lines of coverage, such as automobile and homeowners, and not just business insurance.

Furthermore, potential pandemic business losses could far exceed losses covered under current federal insurance programs. PPP provided $792 billion in assistance from April 2020 through June 2021.[39] This amount is much larger than the largest single-year losses experienced by the

[36]See Aditya Khanna, Brian A. Fannin, and Tim Wei, "On Insurability and Transfer of Pandemic Business Interruption Risk," *Casualty Actuarial Society Research Brief* (2021); Organisation for Economic Co-operation and Development, "Responding to the COVID-19 and Pandemic Protection Gap in Insurance" (Paris, France: updated Mar. 16, 2021); Kai-Uwe Schanz, "An Investigation into the Insurability of Pandemic Risk," (Zurich, Switzerland: The Geneva Association, October 2020); Robert Hartwig and Robert Gordon, "Uninsurability of Mass Market Business Continuity Risks from Viral Pandemics," American Property Casualty Insurance Association (2020); Gunther Kraut, Paulina La Bonte, and Andreas Richter, "Pandemic risk management and insurance," working paper (Munich, Germany: May 24, 2023); Lisa Slotznick, American Academy of Actuaries, letter to Hon. Maxine Waters and Hon. Patrick McHenry, Committee on Financial Services, U.S. House of Representatives (May 11, 2020); and Denis Kessler, "Why Pandemic Risk Is Uninsurable" (Jan. 15, 2021)—accessed on May 2, 2023, at https://www.scor.com/en/expert-views/why-pandemic-risk-uninsurable.

[37]As stated earlier, SBA's four largest pandemic relief programs were PPP ($792 billion), COVID-EIDL ($405.2 billion), the Restaurant Revitalization Fund ($28.6 billion), and the Shuttered Venue Operators Grant program ($14.6 billion). SBA estimated about $36 billion (almost 3 percent) in improper payments for fiscal year 2022, including fraud, associated with these programs. After subtracting such payments, the programs still provided about $1.2 trillion in assistance to businesses.

[38]This does not include capital held by reinsurers or nonadmitted insurers.

[39]This number is reduced to $763 billion after subtracting $29 billion in estimated improper PPP payments for fiscal year 2022.

National Flood Insurance Program, which paid about $17.8 billion in claims in 2005 primarily to cover losses caused by hurricanes Katrina, Rita, and Wilma.[40] Similarly, the Federal Crop Insurance Program's largest single-year losses were in 2022, when the program paid approximately $20 billion in claims—a fraction of PPP assistance.[41] Lastly, while the Terrorism Risk Insurance Program had not paid any claims as of October 31, 2023, estimates of potential program costs also are far lower than PPP assistance.[42]

According to the analyses, pandemic business interruption risk also fails to meet other criteria for insurability. For example, they found this risk is **not independent** because a pandemic is geographically spread across nations, with a high percentage of policyholders experiencing losses at the same time. Insurers are therefore unable to spread risk among their policyholders, which many insurers say is necessary to provide coverage.

The analyses also conclude that pandemic business risk is **not easily predictable**. Insurers generally are unable to accurately estimate the frequency and severity of such events, which is necessary for pricing coverage. According to one analysis by actuaries, this is the most challenging insurability criterion for pandemic risk. Another analysis states a high level of uncertainty relates to the frequency and severity of infectious disease outbreaks. It notes that, while the insurance sector has developed a strong capacity for modeling the financial consequences of certain catastrophic risks, existing risk-modeling techniques cannot

[40]The National Flood Insurance Program was created by Congress in 1968 to promote the availability of flood insurance on reasonable terms and conditions. Private insurance companies sell and service the policies, but they do not share any of the risk of loss.

[41]Congress established the Federal Crop Insurance Program in 1938 in response to the Great Depression. The program helps agricultural producers limit the risk associated with low crop yields, lower-than-expected revenues, or both. Private insurance companies sell and service crop insurance policies and can chose to share in some gains and losses through a standard reinsurance agreement with the federal government.

[42]In the Terrorism Risk Insurance Program, created after the terrorist attacks of September 11, 2001, the federal government shares risk with private insurers to cover business losses stemming from certified terrorist attacks. The Federal Insurance Office, which assists the Secretary of the Treasury in administering the program, annually requests loss estimates from insurers for policies that would be affected by a specified hypothetical terrorism scenario. As of October 31, 2023, the 2016 scenario had the highest estimated cost at about $37 billion in claims, based on a hypothetical terrorist attack in New York City. The program has a maximum aggregate exposure for both insurers and the federal government arising from insured losses for an act or acts of terrorism. As of December 1, 2023, this program cap was $100 billion during any calendar year.

accurately project losses from future pandemics. One group of risk modelers also stated that modeling losses from future pandemics involves a high degree of uncertainty. They said it is particularly difficult because losses depend on the characteristics of the pathogen, including the way transmission occurs and adapts over time, and consumer and local government responses. They stated pandemic risk models are very difficult and expensive to produce, because estimating losses may require access to a large volume of private industry data, considerable software and computing capability, and industry expertise.

In addition, some analyses found that aspects of the risk are **not fortuitous** because they involve government lockdown measures, which are not accidental. Lastly, one analysis by actuaries stated that pandemic risk is **not easily measurable**, because quantifying the size of business losses in a potential future pandemic would present significant challenges.[43] However, as discussed in more detail later, insurers could address this challenge by offering parametric coverage, in which the occurrence of a specific event would trigger payments that were pre-determined based on the size of the event.

Challenges to Federal Pandemic Insurance Would Include Affordability, Participation, and Feasibility of Risk Sharing

Two broad approaches exist for establishing a federal insurance program that responds to pandemic business losses, based on our analysis of existing federal insurance programs and selected proposals for a federal pandemic insurance program:

- **Risk-sharing insurance approach.** This approach includes insurance with risk sharing, whereby private insurers and the federal government each would assume some pandemic risk and private insurers would administer the program.

[43]Quantifying losses would entail tracing insured businesses' financial transactions from the beginning to the end of a pandemic. According to an analysis by property/casualty actuaries, determining the beginning and the end of a pandemic might be challenging, particularly if a virus or other pathogen spread in multiple waves. See Aditya Khanna, Brian A. Fannin, and Tim Wei (2021). As discussed later, quantifying actual business losses for potentially millions of businesses that are likely to be affected approximately at the same time might present significant challenges.

- **Insurance approach with no risk sharing.** This approach involves the federal government assuming all the risk of a pandemic insurance program, with private insurers administering the program but not assuming any of the risk.[44]

We also identified five policy goals that we used to analyze the potential benefits and challenges of the two broad insurance approaches:

1. Ensure widespread, sufficient, and affordable insurance or assistance.[45]
2. Promote efficiency, transparency, and accountability.
3. Promote risk mitigation and limit moral hazard.
4. Reduce federal fiscal exposure or cost.
5. Promote private-sector participation.

To inform our analysis, we obtained the views of industry participants—insurers, reinsurers, brokers, businesses, and associations representing these entities—insurance experts, NAIC staff, and officials from the Department of the Treasury's Federal Insurance Office.[46] We refer to these individuals collectively as stakeholders, unless otherwise noted.

Achieving Affordability Might Be Costly and Not Guarantee Widespread Business Participation

Nature of Pandemic Events Increases Premiums

Affordable premiums would be necessary to attain widespread participation in a federal pandemic insurance program. However, actuarially determined premiums, whether charged by the federal

[44]These broad approaches can be thought of as alternative approaches to designing a federal insurance program. For example, among current federal programs, the Terrorism Risk Insurance Program is structured as a risk-sharing insurance approach. In contrast, the National Flood Insurance Program is structured as a federal insurance program with no risk sharing, although reinsurers bear some risk. However, a federal insurance program could be structured to have aspects of both approaches, with participating insurers bearing no risk or some risk.

[45]The next section in the report analyzes potential approaches other than insurance (noninsurance approaches) to providing businesses with assistance in future pandemic events.

[46]We based our analysis on information from relevant studies and other documents and information we gathered through two panel discussions and multiple interviews. See appendix I for more information.

government or insurers, likely would be very high and unaffordable, according to our analysis. Premiums would be high for at least two reasons.

First, as mentioned earlier, losses from a risk like a pandemic are not easily predictable in terms of their frequency and severity. Insurers need to estimate the frequency and severity of events to accurately price coverage and make decisions on the amount of capital and provisions to set aside and the level of reinsurance protection required. When they cannot, they assume higher losses, because assuming lower losses and being wrong could risk the financial soundness of the insurance company. As a result, insurers generally charge higher premium rates when losses are less predictable.

Second, business losses from a pandemic are highly correlated, meaning a high percentage of an insurer's policyholders are likely to file claims at the same time. Normally, only a small percentage of policyholders file claims in any given year, allowing an insurer to spread the risk of loss among a large group of policyholders. The less an insurer can spread risk among policyholders, the more it generally must charge each individual policyholder.

Two reinsurers told us that the modeling challenges are not insurmountable. However, they also said if the premium rates were actuarially determined, they would be so high as to be unaffordable. That is, even if an insurer were to cover only a small portion of a larger risk, it still would face predictability and independence challenges. As a result, the premiums it would need to charge to insure that small risk likely would be unaffordable for the amount of coverage provided.

Making Coverage Affordable Could Be Costly for the Government

To make pandemic premiums affordable to businesses, the federal government could choose to help businesses pay for actuarially determined (and likely expensive) premiums or could offer free or discounted premiums. This could be done in several ways.

- A federal insurance program could charge an actuarially determined premium and the government could help businesses pay that premium, as needed.[47] For example, a government-funded affordability program could offer assistance based on some measure of need. Premiums reflective of risk, in combination with assistance to businesses to pay those premiums, would allow the government to account for the exposure created by the program (because it would have to budget for the cost of the assistance). However, such a program would introduce administrative costs (such as operating costs to determine eligibility for assistance).

- Alternatively, the government could offer free or discounted premiums for its share of the risk. For years, the National Flood Insurance Program charged discounted premiums without being able to determine the amount of the discount, which we identified as generating fiscal exposure that was not transparent to Congress and the public.[48] If a pandemic insurance program used such discounted premiums, the costs might not become apparent to Congress until a pandemic occurred and the program issued payouts. The Federal Crop Insurance Program is another example of a program in which the federal government subsidizes insurance premiums. In prior work, we found that the rate of return earned by participating insurers exceeded a market-based rate of return.[49]
- Another option would be for government to create a program that would not charge premiums but would use a post-event mechanism to

[47]Under a risk-sharing program, private insurers presumably would charge actuarially determined premiums for the risk they would bear. As mentioned above, the government could help businesses pay for those premiums to achieve affordability.

[48]See GAO, *Flood Insurance: Forgone Premiums Cannot Be Measured and FEMA Should Validate and Monitor Data System Changes*, GAO-15-111 (Washington, D.C.: Dec. 11, 2014); and *Flood Insurance: Comprehensive Reform Could Improve Solvency and Enhance Resilience*, GAO-17-425 (Washington, D.C.: Apr. 27, 2017). For our analysis of the latest changes to the program's rate-setting process, see GAO, *Flood Insurance: FEMA's New Rate-Setting Methodology Improves Actuarial Soundness but Highlights Need for Broader Program Reform*, GAO-23-105977 (Washington, D.C.: July 31, 2023).

[49]A market-based rate of return is an annual rate of return, representative of market conditions, that produces financial earnings equal to earnings from alternative investment opportunities relative to the risk assumed. See GAO, *Crop Insurance: Update on Opportunities to Reduce Program Costs*, GAO-24-106086 (Washington, D.C.: Nov. 7, 2023); and *Crop Insurance: Opportunities Exist to Improve Program Delivery and Reduce Costs*, GAO-17-501 (Washington, D.C.: July 26, 2017). The 2017 report contains, and the 2023 report reiterates, a matter for congressional consideration that would allow the government to adjust insurance companies' expected level of compensation to reflect market conditions. As of September 30, 2023, the matter remained open. For a brief summary of our work on this program, see GAO, *Farm Bill: Reducing Crop Insurance Costs Could Fund Other Priorities*, GAO-23-106228 (Washington, D.C.: Feb. 16, 2023).

recoup all or some of the federal portion of payments made to businesses.[50] While this could keep coverage affordable before a pandemic occurred and potentially lower federal fiscal exposure, this benefit could be offset if businesses were unable to pay back what they received from the program. The government could alleviate the burden to some extent by lengthening the duration of post-event recoupment to spread payments over time. It also could recoup payments from a broad base of policyholders (not just those affected) by collecting payments from all businesses with commercial property insurance coverage, for example. But a post-event recoupment mechanism also might reduce take-up rates if businesses were to forgo coverage to avoid potential recoupment payments.

Widespread Participation Might Not Be Achievable

Even if premium rates could be made more affordable, policymakers might face challenges ensuring widespread participation by businesses under insurance approaches, according to our analysis. Take-up rates among businesses could be low for the following reasons:

- Businesses might not purchase coverage because they underestimate their risk—that is, they might not believe another pandemic would happen soon and that it would be worth purchasing coverage in a given year. Several studies have noted that infrequent events can change entities' perceptions of the expected benefit of purchasing insurance. As a result, decision-makers often underestimate low-probability, high-impact events and frequently deem insurance premiums reflecting these risks as too high.[51]

  According to another analysis, underestimation of pandemic risk could occur for many reasons, including underestimating the probability of a pandemic, the speed or extent to which a pathogen will spread, or the

[50]For example, under the Terrorism Risk Insurance Program, neither insurers nor the federal government charge policyholders for federal coverage of terrorism risk. But the government either must or may (depending upon the amounts paid by industry) recoup its losses after a terrorist event through premium surcharges on all policyholders.

[51]See for example, Kati Kraehnert, et.al., "Insurance Against Extreme Weather Events: An Overview," *Review of Economics,* 72, no. 2: (2021): 71–95; Katherine R.H. Wagner, "Why is reforming natural disaster insurance markets so hard?" Stanford Institute for Economic Policy Research Policy Brief (July 2020); Justin Gallagher, "Learning about an Infrequent Event: Evidence from Flood Insurance Take-Up in the United States," *American Economic Journal: Applied Economics*, 6, no. 3 (2014): 206–233; and Howard Kunreuther, and Mark Pauly, "Neglecting Disaster: Why Don't People Insure Against Large Losses?" *Journal of Risk and Uncertainty*, 28, no. 1 (January 2004): 5-21.

probability or duration of government-imposed orders intended to limit the spread of the pandemic. Additionally, businesses could be overly optimistic about the ability of scientists to develop treatments and vaccines.

- Businesses also might forgo coverage because they believed that the government would make assistance programs available to them if another pandemic occurred. Given the federal response to COVID-19, it is possible that businesses would expect some form of government assistance should the nation experience a pandemic with similar devastating economic effects.

Although the experience of COVID-19 has increased businesses' interest in the availability of pandemic insurance, stakeholders' views differed on the ability of a voluntary program to reach and sustain high take-up rates. For example, a representative from a policyholder association stated that, given the pandemic's devastating effects, he believes many businesses likely would participate in a federal pandemic insurance program. An insurance broker representative agreed that take-up could be high. As an example, they pointed to the 60 percent take-up rate for the Terrorism Risk Insurance Program. This high take-up rate can be attributed in part to the low cost of coverage and many lenders requiring businesses to have coverage for terrorism risk as a condition for a mortgage loan.[52]

However, others believed many businesses might not buy coverage. For example, one restaurant industry representative believed that even if pandemic coverage were available for a relatively affordable price, many cash-strapped restaurants would not opt for coverage. He explained that, although COVID-19 made restaurants aware of pandemic risk, many restaurants operate at low margins and are highly dependent on cash

[52]According to Treasury, the take-up rate for the Terrorism Risk insurance Program measured as a percent of direct earned premiums was 60 percent in 2021. That is, of the total direct earned premiums from program-eligible lines of insurance, 60 percent had the coverage. Premiums for terrorism risk insurance embedded in a property/casualty policy are priced at a relatively small percentage of the total premium charged, and sometimes coverage is provided at no explicitly-stated additional cost (for example, the cost is embedded in the total premium). Stand-alone policies vary significantly in cost and whether they provide coverage under the Terrorism Risk Insurance Program. According to Treasury, differences in cost may be due to the relative size or nature of exposures covered under each policy, among other potential reasons. See Department of the Treasury, Federal Insurance Office, *Report on the Effectiveness of the Terrorism Risk Insurance Program* (Washington, D.C.: June 2022).

liquidity to operate. Consequently, he believed many restaurants would not want to use available funds to purchase pandemic insurance.

Some stakeholders also noted the need to provide incentives for participation in designing a federal insurance program. For example, some stakeholders stated the government would need to ensure businesses had both incentives to buy coverage or disincentives to forgo insurance and take advantage of other federal assistance. One study noted that if federal aid were comparable to insurance payouts, it would raise equity concerns and create a disincentive to purchase coverage.

One way to avoid this and to provide incentives for business participation would be to keep federal assistance below insurance payouts, as is the case with Federal Emergency Management Agency disaster grants and National Flood Insurance Program insurance payments.[53] Another way would be to make clear that businesses must participate in the insurance program to receive pandemic assistance or to limit such assistance if businesses did not buy pandemic insurance. However, this might be a difficult restriction to maintain in the face of the economic effects of a pandemic.

Another option for increasing insurance take-up rates would be to make it mandatory for businesses to purchase coverage. However, this may be a difficult or undesirable solution. Businesses might resist a requirement to purchase coverage, particularly those that likely would not purchase the policy voluntarily. In addition, enforcement of mandatory coverage could create additional unwanted administrative costs.

Insurance Approaches Could Promote Efficiency and Risk Mitigation but Likely Would Face Implementation Challenges

Efficiency

Many stakeholders said that insurers' expertise in processing claims and payments could help ensure efficient program administration under either

[53]The average flood insurance claim payment in 2017–2021 was approximately $69,000, according to the Federal Emergency Management Agency. Federal Emergency Management Agency disaster grants average about $5,000 per household, according to the agency. Federal disaster assistance in the form of SBA loans is also available but must be repaid with interest.

insurance approach. However, some said that the volume of concurrent losses during a pandemic could overwhelm insurers and significantly delay the processing and payment of claims.

To help process the large number of claims in a pandemic event, many stakeholders agreed that polices with parametric loss triggers, rather than indemnity-based policies (in which losses go through a claims-adjustment process), would be most appropriate. Indemnity-based policies generally seek to make a policyholder whole by paying for actual losses (subject to deductibles and limits). Payment on a parametric policy is triggered by the occurrence of a specific event, and the payment is pre-determined based on the size of the event. For example, a parametric policy might pay $100,000 if an earthquake with magnitude 5.0 or greater occurred. In the case of pandemics, one analysis suggested that the trigger could be the declaration of a public health emergency by certain government agencies in designated areas. The payment to the policyholder would be specified at the time of contract and could be set at a pre-determined percentage of its revenues or net income from the previous year. The policyholder could provide this income information annually when the insurance contract is renewed.

Many stakeholders agreed that a significant benefit of parametric loss triggers is that payments to policyholders can be made quickly, often within days. This would help ensure rapid distribution of payments to the potentially millions of affected businesses during a pandemic. Such quick payments would not be possible with indemnity-based policies, where each loss would have to go through an often lengthy claims-adjustment process (which generally requires insurers to assess and estimate losses after the event occurs).

However, parametric loss triggers have potential downsides. First, because payouts are not directly tied to losses, payouts might not fully cover losses or may be higher than actual losses. Second, triggers would have to be carefully designed to be independent, objectively measurable immediately after the disaster, and correlated with actual losses. For example, a pandemic insurance trigger could involve a World Health Organization declaration of a Public Health Emergency of International Concern followed by a civil authority restricting public activities within a covered area, according to a reinsurer.[54] However, during COVID-19, local authorities' decisions to impose restrictions varied widely across U.S. states and localities. Thus, businesses suffering similar losses might not receive similar payouts under such a trigger if their local authorities reacted differently. A poorly designed trigger could delay or deny payment altogether.[55]

Even with a successful parametric trigger design, two insurance associations stated that setting up, maintaining, and distributing payments, and conducting follow up for potentially millions of contracts in a relatively short time would be costly and present challenges. First, insurers would incur costs associated with setting up and maintaining contracts, including the cost of verifying policyholder information. These costs could increase premiums and hinder widespread affordability. Or if the federal government had to compensate insurers, it would add to federal fiscal costs.[56]

Second, an insurer, two insurance associations, and an insurance expert feared that processing millions of claims in a short time would be beyond the industry's capacity. If a federal insurance program imposed requirements on policyholders—such as that claim payments be used to retain employees—processing parametric claims and ensuring compliance for millions of businesses might prove challenging to insurers.

[54]The 2005 International Health Regulations define a Public Health Emergency of International Concern as "an extraordinary event which is determined to constitute a public health risk to other states through the international spread of disease and to potentially require a coordinated international response."

[55]For example, the World Bank offered bonds after the 2014–2016 Ebola outbreak in West Africa to provide financing to certain countries to respond to cross-border, large scale outbreaks. However, some academics and others criticized the triggering system as too rigid. For example, the bonds had a 12-week waiting period for some viruses before payment could occur. And while Ebola was declared a Public Health Emergency of International Concern in July 2019, the requirements to trigger payments were never met. About $196 million in COVID-19-related payments were triggered on April 27, 2020. The World Bank did not renew its pandemic bonds after they matured in July 2020. See Bangin Brim and Clare Wenham, "Pandemic Emergency Financing Facility: struggling to deliver on its innovative promise," *The British Medical Journal* (Oct. 9, 2019); Louisa Watt, James Cole, Andrew Baker, "Pandemic Bonds – Failing and In Need of Reform," Brown Rudnick LLP (Mar. 27, 2020); Tracy Alloway and Tasos Vossos, "How Pandemic Bonds Became the World's Most Awkward Investment," Bloomberg (Dec. 9, 2020); and "The Pandemic Emergency Financing Facility officially closed on April 30, 2021," World Bank Fact Sheet (Apr. 27, 2020).

[56]Because insurers would administer the program under either a risk-sharing insurance approach or one without risk-sharing, these costs would present challenges to any federal insurance program with insurer participation.

An insurance association cited concerns about reputational or legal risks related to their handling of a large number of claims so rapidly.

Risk Mitigation

Many stakeholders stated that insurance can be an effective way to encourage risk-mitigating behaviors. The most direct means of encouraging risk-mitigating behavior through insurance is offering reduced premiums for such behaviors. Insurance deductibles and waiting periods also ensure that the policyholder is responsible for a portion of any losses, thus further aligning the interests of the insurer and the insured so that both parties seek to reduce the risk of loss. In addition, policyholders who are willing to pay higher deductibles generally will benefit from reduced premium rates.

However, the benefits of risk-mitigation behaviors by businesses might be limited in the context of pandemics. For example, some stakeholders and experts noted that certain businesses were limited in the steps they could take to prevent or reduce losses from a future pandemic. In particular, businesses most affected by the pandemic—including those requiring person-to-person contact to operate and create revenue—might be limited in the actions they could take to minimize the impact of a pandemic like COVID-19, which included consumer decisions to stay home, social distancing guidelines, and government shut-down orders. We have noted that the COVID-19 pandemic highlighted the importance of national efforts to prepare for such events.[57]

While some businesses could continue mitigation measures (such as increasing or adding take-out options at restaurants) or preemptively plan to take similar actions to minimize the effects of a future pandemic, it is unlikely that individual business measures would be able to significantly mitigate losses for these businesses. For example, a restaurant association representative reported that restaurant take-out revenues accounted for a larger percentage of restaurant sales in 2023 than they

[57]In prior reports, we made several recommendations that could help better prepare federal agencies for future emergencies. For example, we recommended that the Department of Health and Human Services prioritize the development of the public health situational awareness and biosurveillance network to facilitate sharing data and information. The network could enhance early detection of and rapid response to potentially catastrophic infectious disease outbreaks and other public health emergencies. See GAO, *COVID-19: GAO Recommendations Can Help Federal Agencies Better Prepare for Future Public Health Emergencies*, GAO-23-106554 (Washington, D.C.: July 11, 2023). As of October 31, 2023, the recommendation remained open.

did in 2019. However, he added that restaurants cannot survive in the long run if they cannot open their doors to customers.

Moral Hazard

Lastly, there are ways insurance approaches might reduce moral hazard (the potential that policyholders will act in a riskier way or fail to take steps to minimize losses if they believe their losses will be covered regardless of their actions). Moral hazard is the opposite of risk mitigation, so the same features that provide incentives for risk mitigation could help reduce the risk of moral hazard. As noted above, deductibles, waiting periods, and reduced premiums for risk-mitigating behaviors encourage policyholders to take actions to reduce their losses and, thus, minimize out-of-pocket costs. Parametric loss triggers also could help limit moral hazard. Because the policyholder would receive a predetermined payout, policyholders that undertook mitigation could reduce potential revenue losses.

On the other hand, payouts that are not affected by policyholder behavior, as is the case with a parametric trigger, could motivate policyholders to forgo mitigation activities. We also have noted that if premiums paid by policyholders do not represent the full risk of loss (for instance, because of subsidies or affordability assistance), it can lead policyholders to under-assess risk and provide less incentives for them to take actions that could lower losses.

A Risk-Sharing Approach Could Reduce Fiscal Exposure, but Insurers May Be Unwilling to Assume Much or Any Risk

As described earlier, a federal pandemic insurance program could use a risk-sharing approach, in which private insurers assumed some of the risk, or an approach in which the government assumed all the risk.

Potential Benefits of a Risk-Sharing Approach

Potential benefits of a risk-sharing approach relative to an approach with no risk sharing include reduced federal fiscal exposure and the development of private-sector capacity and expertise in modeling and pricing pandemic risk.

- **Federal fiscal exposure.** A risk-sharing insurance approach could help reduce federal fiscal exposure relative to an insurance approach with no risk sharing, because the federal government would not pay all the losses. Instead, the private sector would bear some of the risk and pay some of the losses, albeit likely a small portion (as discussed below).

  While the scope of the underlying losses is likely different than the potential losses caused by a pandemic, the Terrorism Risk Insurance Program is an example of a program in which insurers and the federal government share risk. Under this program, the government and insurers share insured losses once the program's trigger of $200 million is reached and subject to the program cap of $100 billion in the event of a certified terrorist attack. The federal share of losses depends on the deductibles of the affected insurers. Many industry stakeholders told us they supported a risk-sharing insurance approach over an insurance approach with no risk sharing, in part because of the potential for limiting, to at least some extent, the federal government's fiscal exposure.

- **Insurer capacity.** A risk-sharing approach might increase insurance market capacity for pandemic risk over time, further reducing federal fiscal exposure.[58] For example, it could kick start private-sector involvement and a market could develop over time, according to several stakeholders and analyses. If some insurers began writing policies and were able to do so profitably, other insurers might be encouraged to do the same. One insurer said that to facilitate capacity building, the government would need to set a clear limit for insurer losses. This might induce insurers to offer limited amounts of coverage and allay concerns about open-ended coverage that could threaten their solvency. However, according to an insurance association analysis and representatives from two other insurance associations, it likely would take many years to build private insurer capacity in a risk-sharing insurance program. Consequently, another pandemic event during that time could result in insured losses that could cause participating insurers to stop offering pandemic coverage completely.

[58]According to the International Risk Management Institute, capacity refers to the largest amount of insurance or reinsurance available from a company or the market in general. Capacity is determined by both financial strength and the nature of the risk and is also used to refer to the additional amount of business that a company or the total market could write based on excess capital (or surplus capacity).

Understanding that the number and scope of losses in a pandemic could be significantly greater than in a terrorist event, Treasury offered evidence that the Terrorism Risk Insurance Program helped develop some market capacity.[59] In a 2022 report on the program's effectiveness, Treasury observed an increase in reinsurance capacity for terrorism risk, which was consistent with observations from market participants.[60]

- **Insurer expertise.** A risk-sharing approach also could leverage and provide incentives for further developing insurers' expertise related to modeling and pricing pandemic risk.[61] According to the Organisation for Economic Co-Operation and Development, the insurance sector has developed a strong capacity for modeling the financial consequences of catastrophic risks. Consequently, programs that maximize the role of private insurance markets are more likely to support the development of a risk modeling industry, because model availability and sophistication generally is highest where private insurers play a large role in providing coverage.

  Although insurers would participate in both approaches as program administrators, a risk-sharing approach could better leverage insurer expertise in modeling catastrophic risks. It also could provide a path towards improvements in modeling the frequency and severity of pandemics, which, as mentioned earlier, are difficult to predict.

Challenges to Sharing Risk

However, two large insurance associations said that a risk-sharing approach might not be feasible. They pointed to the severity of the

[59]Under the Terrorism Risk Insurance Act, the program was established, in part, to permit private markets to stabilize, resume pricing, and build capacity. As previously discussed, the program is structured as a risk-sharing federal insurance program.

[60]*Report on the Effectiveness of the Terrorism Risk Insurance Program* (June 2022). Similarly, according to a 2019 testimony by a representative from the Congressional Research Service, insurers' capacity to bear terrorism risk increased over the life of the Terrorism Risk insurance Program and had been bolstered by earned premiums without significant claims payments. Treasury estimated that by 2021, such premiums amounted to almost $60 billion (including $10 billion earned by captive insurers). See House Financial Services Subcommittee on Housing, Community Development, and Insurance, *Protecting America: The Reauthorization of the Terrorism Risk Insurance Program*, 116th Cong. (Oct. 16, 2019); statement of Baird Webel, Congressional Research Service.

[61]Under an insurance option with no risk sharing, it is likely that the federal government still could leverage private-sector expertise by contracting catastrophe modeling firms to help price coverage.

economic losses caused by the COVID-19 pandemic and the inability of insurers to provide large-scale relief to businesses in a pandemic event. They reiterated that pandemic business risk is neither market-bearable nor independent, two key insurability criteria (see previous discussion). Similarly, three insurance experts stated concerns about insurers' financial solvency should they assume risk of losses from a pandemic.

Some analyses help explain the potential difficulties for insurers of taking on pandemic business risk. These hypothetical exercises do not reflect actual exposures or losses for any specific company should a risk-sharing program exist. However, they help portray the magnitude of the financial responsibility that would be placed on insurers if they were expected to share even a small percentage of losses from a pandemic like COVID-19.

As discussed earlier, the size of the losses could exceed the U.S. property/casualty insurance industry's available capital, which was approximately $1 trillion at the end of 2022.[62] This is below the $1.2 trillion in assistance to small businesses provided through the four main SBA emergency programs. Based on the amount of minimum capital required by state regulators in 2022, any losses of over $800 billion could threaten the solvency of insurers.[63] While sharing risk with the federal government would reduce total private insurer exposure, the comparison helps put pandemic business losses into perspective.

An analysis by an academic and an insurance association noted that such a diversion of capital could introduce systemic instability throughout the private property/casualty insurance industry, and as a result, the broader economy. Insurers must maintain sufficient capital to support all the property/casualty risks they have underwritten as well as investment and other general business risks. In addition, an analysis by actuaries noted that because pandemic losses are correlated with declines in the value of assets, the value of the assets set aside to pay claims could be impaired as part of the event.

The authors of another hypothetical analysis assumed a pandemic event with total insured losses of $250–$750 billion and a federal insurance program with risk sharing in which the largest 100 commercial property/casualty companies (based on 2019 data) proportionally

[62]This does not include capital held by reinsurers or nonadmitted insurers.

[63]Losses that reduce an insurer's capital below levels set by state regulators can trigger various regulatory actions to help prevent insolvency.

assumed some percentage of pandemic risk. The authors found that the potential losses for many companies relative to their capital surplus could be high and thus financially problematic for many companies.[64]

Two large insurers and two large reinsurers showed interest in participating in a federal risk-sharing insurance approach, but they all agreed that the private sector's collective share of risk assumption likely would be small. Most noted the importance of being able to individually decide the amount of risk they could bear responsibly. One insurer noted the need for a clear cumulative exposure limit acceptable for participating insurers.

Some estimated the share of total pandemic business risk the industry could bear as between 1 and 5 percent (approximately $12–$60 billion based on total loss estimate of $1.2 trillion). Although this percentage may seem small, it could reduce federal fiscal exposure by billions of dollars.

As discussed earlier, private insurer capacity might grow over time if participating insurers found it profitable to participate in the program. But insurers also could pull out of the program if they suffered losses, shifting all exposures to the federal government and impeding progress towards private capacity building.

Importantly, some stakeholders suggested that insurer participation in a risk-sharing approach should have some mandatory aspect to it to ensure widespread availability of coverage. For example, the Terrorism Risk Insurance Program has a requirement for insurers to offer terrorism insurance as part of certain commercial property insurance policies.[65] Four federal pandemic insurance program proposals with risk sharing,

[64]In this analysis, individual insurer losses were based on that insurer's 2019 direct premiums earned as a percentage of all 100 companies' direct premiums earned that year. Insurers collectively paid a deductible equal to 5 percent of their combined direct premiums earned. They also paid losses above their deductible equal to 5 percent of total insured losses minus the deductible. See Robert Klein and Harold Weston, "Feasibility Questions About Government-Sponsored Insurance for Business Interruption Losses from Pandemics," *Journal of Insurance Regulation*, 39, no. 7 (2020).

[65]The Terrorism Risk Insurance Program requires private insurers to offer terrorism coverage in certain commercial property/casualty insurance lines, including workers' compensation insurance policies. Insurers must make terrorism coverage available that does not differ materially from the terms, amounts, and other coverage limitations applicable to losses arising from events other than acts of terrorism.

including two proposed by insurers, included a similar requirement.[66] More specifically, a policyholder association representative and an insurance expert agreed that such a requirement could be needed to ensure some insurers offered coverage. It also could help prevent insurers from withdrawing from the market if they experienced losses.

However, two large reinsurers and representatives from three insurance associations we spoke with opposed any mandatory aspect to insurer participation in a federal insurance program. One insurance expert stated that mandatory requirements might not be effective, because insurers could set prices high enough to discourage demand (although such an approach would be tempered by state insurance regulators' rate approval processes, according to a representative from a broker association).[67] Lastly, insurers, reinsurers and an actuary told us it was important for insurers to choose the level of risk they could bear responsibly.

An Approach Without Risk Sharing Is Not Likely to Have Insurer Support

None of the insurers, reinsurers, or related associations with which we spoke supported a federal insurance approach without risk sharing.[68] Although some insurance associations originally proposed such an approach in May 2020, representatives from two of the associations that authored the proposal stated their preference for approaches other than insurance when we spoke with them in 2022 and 2023. As discussed in more detail in the next section, federal noninsurance approaches include forms of direct assistance, loans, or guarantees. Another insurer also preferred noninsurance approaches. On the other hand, two insurers and two reinsurers showed interest in participating in a federal risk-sharing insurance approach, and two insurance associations and one reinsurance association also supported this approach.

[66]One of the insurer proposals includes mandatory insurer participation, but insurers can choose whether to hold 0, 5, or 10 percent of the risk and cede the remainder to the federal government.

[67]State regulators must balance ensuring premium rates are fair to consumers with ensuring the ongoing solvency of insurers.

[68]In interviews or during our expert panels, we spoke with representatives of three insurance companies, two reinsurance companies, four insurance associations, and one reinsurance association about their opinions regarding federal insurance and noninsurance approaches for responding to pandemic events.

As described above, a federal insurance program with no risk sharing likely would face many of the same challenges as one with risk sharing, including challenges with affordability, take up, and efficiency. In addition, an insurance approach in which insurers would play an administrative role likely would not help limit federal fiscal exposure or promote insurer pandemic-related capacity or expertise. Without the possibility of such potential benefits, it was unclear if a federal insurance approach with no risk sharing would be preferable to noninsurance approaches.

Some Stakeholders Suggested Alternatives to a Full-Scale Federal Insurance Approach

Some stakeholders have suggested, and one country implemented, a more modest government insurance role instead of a full-scale insurance program intended to respond to large, concurrent business losses. For example, a smaller federal insurance program could play a “stopgap” role, assisting participating businesses for a short time immediately after a pandemic occurred.[69] Alternatively, a federal insurance program could cover risks from a smaller segment of businesses or a specific line of insurance coverage. For example, in September 2021, the government of the United Kingdom launched the “Live Events Reinsurance Scheme,” an £800 million (about $976 million) risk-sharing program for event cancellation insurance. The government partnered with insurers to make coverage available against the cancellation of events due to the COVID-19 pandemic.

A more modest insurance program might make the risk more market-bearable, lowering the barriers to insurer participation. If potential insurer losses were small, and therefore required less insurer capital to cover, insurers might be more willing to assume risk. If, in time, insurers were able to earn profits, this could provide more incentives to participate, and insurers could continue to develop capacity to cover at least some portion of this risk. Some challenges might remain. For example, losses likely still would be concurrent, premiums might not be affordable, and the risks still would be difficult to predict. However, low take-up rates might be acceptable if the insurance program were one part of a broader federal response strategy.

[69]Committee on Capital Markets Regulation, *Pandemic Business Interruption Insurance*.

Noninsurance Approaches Could Ensure Widespread Assistance but Could Involve High Costs and Other Trade-offs

In light of the challenges that could undermine the benefits of a federal insurance approach, as discussed above, we analyzed potential noninsurance approaches to providing businesses with assistance in future pandemic events. We used the same policy goals identified earlier to analyze the views of industry participants, experts, and academics about the benefits and challenges of such potential approaches. Recent experience with and lessons learned from COVID-19 federal assistance programs—which generally are examples of noninsurance approaches—provide important insights that inform our analysis of potential future federal responses to pandemic business losses.

Federal Noninsurance Approaches Can Reach Many Businesses Quickly, but Trade-Offs Include High Costs and Fraud Risk

COVID-19 Emergency Assistance Reached Millions of Businesses but Was Costly

Based on the experience of COVID-19 emergency assistance programs, noninsurance approaches could achieve the goal of providing widespread and affordable assistance to businesses in a pandemic. This stands in contrast to insurance approaches that likely would face insurer participation or take-up challenges and likely be expensive for businesses if they charged actuarially determined premiums.

Generally, major emergency programs assisting businesses covered operating expenses or provided credit. In addition, some assistance was targeted at traditionally underserved businesses—in particular, businesses owned by the self-employed, minorities, women, and veterans.

- Empirical research on the economic effects of PPP found consistent evidence that it increased small businesses' employment, especially for businesses with fewer employees, and improved their financial condition.[70] The research also suggested that PPP strengthened local labor markets, although we found that program funds initially did not flow proportionally to some businesses in underserved locations. In response to these concerns, Congress and SBA made a series of changes that increased lending to these areas.[71] By the time PPP closed in June 2021, lending in traditionally underserved counties was proportional to their representation in the overall small business community.

- COVID-EIDL helped keep businesses open by funding operating expenses, according to some program applicants and stakeholders.[72] They noted it provided loans with attractive rates at a time when credit with similar terms was not available elsewhere.

However, noninsurance programs such as PPP generally are not designed to limit federal fiscal exposure as an insurance program might.[73] As discussed previously, COVID-19 relief laws provided $1.2 trillion to assist small businesses.[74] In these programs, the federal government assumed most of the cost of the assistance. For instance, SBA reported in June 2023 that PPP had delivered $792 billion in forgivable loans to date. The other three large SBA programs—COVID-EIDL, the Restaurant Revitalization Fund, and the Shuttered Venue Operators Grant program—

[70]See GAO, *COVID-19: Current and Future Federal Preparedness Requires Fixes to Improve Health Data and Address Improper Payments*, GAO-22-105397 (Washington, D.C.: Apr. 27, 2022). We reviewed studies that examined the short-run effects of PPP on economic activity, including labor markets and small businesses' financial conditions.

[71]The changes included increasing the number of lenders to include nonbanks, adding guidance for self-employed individuals to help them participate in the program, and targeting funding to minority-owned businesses. See GAO-21-601.

[72]See GAO, *Economic Injury Disaster Loan Program: Additional Actions Needed to Improve Communication with Applicants and Address Fraud Risks*, GAO-21-589 (Washington, D.C.: July 30, 2021).

[73]Federal insurance programs also would be costly because, as mentioned earlier, the government likely would assume most of the risk. However, private insurers could assume some of the risk and not all affected businesses likely would buy coverage. Depending on the administrative costs of an insurance program, overall costs could be less than a direct federal assistance program.

[74]Small Business Administration, *Protecting the Integrity of the Pandemic Relief Programs: SBA's Actions to Prevent, Detect and Tackle Fraud*.

distributed more than $70 billion in loan advances (grants), grants, or awards.[75]

COVID-19 Emergency Assistance Was Rapidly Available but Prone to Fraud

In relation to the policy goal of promoting efficiency, PPP and COVID-EIDL showed that federal noninsurance approaches could distribute assistance to millions of businesses relatively quickly. We reported that the CARES Act funding for PPP was exhausted within 2 weeks of its launch in early April 2020, as lenders and SBA moved quickly to make and process the loans. Subsequently, Congress appropriated an additional $321 billion for the program. As of mid-June 2020—about 3 months after the World Health Organization characterized COVID-19 as a pandemic—lenders had made about 4.6 million loans totaling about $512 billion or approximately 76 percent of the available funds.[76] For COVID-EIDL, SBA approved about 5.8 million loan advances for about $20 billion from March 29, 2020, through July 15, 2020. For comparison, from SBA's inception in 1953 until March 2020, SBA had approved a total of about 2.2 million disaster loans for $67 billion, according to one SBA official.

But the programs may have been inefficient in other ways. We found a number of inefficiencies related to the initial launch of the PPP program, including lack of clarity on the relevance of a business's need for a PPP loan, confusion over eligibility for PPP loans, and systems operations backlogs.[77] In July 2021, we also reported that COVID-EIDL applicants faced a number of challenges, including lack of important program information and uncertainty about application status.[78]

Federal emergency assistance programs also can face challenges in promoting the goal of accountability. These emergency events and the corresponding creation of new federal programs or rapid expansion of

[75]The PPP program involved potentially forgivable loans, so ultimately the federal government incurred the costs of forgiven loans. As of July 1, 2023, most loans had been forgiven. According to SBA, 10.6 million of 11.5 million PPP loans (92 percent) totaling $758.3 billion had been forgiven. COVID-EIDL also provided $378 billion in low-interest loans, according to SBA. Those loans were not forgivable.

[76]GAO, *COVID-19: Opportunities to Improve Federal Response and Recovery Efforts*, GAO-20-625 (Washington, D.C.: June 25, 2020).

[77]For more details, see GAO-22-105397.

[78]For more details, see GAO-21-589.

existing programs—often with an emphasis on getting money out quickly—can strain agencies' management capabilities and willingness to proactively implement fundamental internal controls and fraud risk management practices. Such shortcomings can result in significant improper payments—payments that should not have been made or were made in the incorrect amount as a result of mismanagement, errors, abuse, or fraud.

SBA's initial limited internal controls and lack of finalized oversight plans created significant risk of billions of dollars in improper payments. Specifically, for fiscal year 2022, SBA reported $29 billion in estimated improper payments for PPP and $6.9 billion for COVID-EIDL.[79] In a recent report, we estimated that the total amount of fraud across all unemployment insurance programs (including the new emergency programs) during the COVID-19 pandemic likely ranged from $100 billion to $135 billion—or about 11–15 percent of the total unemployment insurance benefits paid out during the pandemic.[80]

Experiences with COVID-19 Emergency Programs Provide Insights That Could Improve Noninsurance Approaches

Experiences of COVID-19 emergency assistance programs in the United States and other nations provide important insights on how the federal government could improve its response to future pandemics. We and others have identified examples, actions, or concepts that illustrate how noninsurance programs could be structured to (1) place some of the financial burden of the program on private entities and away from the taxpayer, furthering the goal of reducing federal fiscal exposure or costs; and (2) implement preventive measures and plan before the next

[79]See GAO, *A Framework for Managing Improper Payments in Emergency Assistance Programs*, GAO-23-105876 (Washington, D.C.: July 13, 2023). Fraudulent activity involves an individual or entity obtaining something of value through willful misrepresentation. While all payments resulting from fraudulent activity are considered improper, not all improper payments are the result of fraud. For example, improper payments can be unintended and result from lack of agency oversight, mismanagement, errors, and abuse.

[80]GAO, *Unemployment Insurance: Estimated Amount of Fraud during Pandemic Likely Between $100 Billion and $135 Billion,* GAO-23-106696 (Washington, D.C.: Sept. 12, 2023). The CARES Act created three federally funded temporary unemployment insurance programs that expanded benefit eligibility, enhanced benefits, and extended benefit duration.

pandemic occurs, furthering our goal of promoting efficiency, transparency, and accountability.

Sharing Risk or Program Costs with Private Entities

Selected experiences with certain assistance programs in the United States and abroad show that costs or risks in noninsurance emergency assistance programs do not necessarily have to be fully borne by the federal government and the taxpayer. Although we do not fully analyze the benefits and challenges of the programs mentioned below, the following examples illustrate how governments could share some of the program costs or risks with private entities.

Sharing payroll costs with businesses. The United States and other countries implemented job-retention programs in response to the COVID-19 pandemic that shared program costs with participating businesses. For example, Treasury's Payroll Support Program provided more than $60 billion to the aviation industry to be used exclusively for the continuation of payment of wages, salaries, and benefits to employees.[81] Beneficiaries of this program had to refrain from conducting involuntary furloughs or terminations for specified amounts of time, among other requirements. Treasury required certain recipients to provide notes, warrants, or both as appropriate compensation for the provision of financial assistance.[82]

Other countries also used job-retention programs. For example, during the financial crisis of 2007–2009 and during the COVID-19 pandemic, Germany enhanced or expanded its short-time work program, Kurzarbeit, to stabilize labor markets. Kurzarbeit provided a government subsidy (provided through employers) to employees working reduced hours.

[81]In March 2020, Congress passed the CARES Act, which established the Payroll Support Program, which provided $32 billion for passenger air carriers, cargo air carriers, and aviation contractors. In December 2020, the Consolidated Appropriations Act, 2021 established the Payroll Support Program Extension, which provided up to $16 billion for passenger air carriers and contractors. In March 2021, the American Rescue Plan Act of 2021 created a third round of the program, which provided up to $15 billion in financial assistance for passenger air carriers and aviation contractors. See Pub. L. No. 116-136, § 4112, 134 Stat. 281, 498 (2020) (codified at 15 U.S.C. § 9072); Pub. L. No. 116-260, div. N, tit. IV, § 402, 134 Stat. 1182, 2053 (2020) (codified at 15 U.S.C. § 9092); and Pub. L. No. 117-2, § 7301, 135 Stat. 4, 104-107.

[82]Notes are securities obligating repayment of a loan at predetermined terms. Under the program, the value of the notes was determined as a percentage of the payroll support provided over a certain threshold and had to be repaid by recipients. Warrants represent the right to buy shares of a company's stock at a predetermined price before a specified date. For more details, see GAO-22-105397.

Under the program, participating employers agreed to reduce employees' workhours instead of laying them off. Employers paid workers for hours worked, and the German government subsidized part of the cost of hours not worked. During the pandemic, the government initially subsidized 60 percent (or 67 percent for employees with children) and ultimately raised the subsidy to 80 percent (87 percent for employees with children) starting from the seventh month of participation in the program.[83] The Organisation for Economic Co-operation and Development reported that by May 2020, about 50 million jobs across advanced economies were being supported by some form of job-retention program.[84]

Sharing risk with affected businesses. In July 2020, the United Kingdom announced a program to assist domestic film and TV productions struggling to operate. The government compensation program provided eligible productions with reimbursement for costs caused by pandemic-related delays up to a value of 20 percent of the production budget. Compensation for abandonment of productions covered up to 70 percent of the production budget, upon agreement with the government that abandonment was necessary.[85]

Sharing risk with the financial sector. Other countries implemented loan guarantee programs in which the banking sector assumed some of the risk from COVID-19 assistance loans. In April 2020, the Belgian government created a €50 billion (about $53 billion) loan guarantee program that provided new short-term loans to nonfinancial companies (including the self-employed) to cover liquidity needs and help ensure the continuation of their activities. The government agreed to share losses

[83]Shekhar Aiyar and Mai Chi Dao, "The Effectiveness of Job-Retention Schemes: COVID-19 Evidence from the German States," *International Monetary Fund Working Paper* (Oct. 15, 2021).

[84]Organisation for Economic Co-operation and Development, "Job retention schemes during the COVID-19 lockdown and beyond" (Paris, France: updated Oct. 12, 2020).

[85]Businesses were charged a fee to participate in this program. According to the UK Actuary's Department, television and film productions generally were unable to operate even after lockdown orders were lifted. There was insufficient insurance coverage available, and productions found it virtually impossible to continue filming or to acquire financing.

with the lenders, so that at least 20 percent of the losses would be borne by creditors, according to an international law firm.[86]

In April 2020, Sweden also created a loan guarantee program of about €9.1 billion (about $9.7 billion) to help businesses cover immediate liquidity needs and continue operations. The risk taken by the government was limited to a maximum of 70 percent, with the financial sector taking the remainder of the risk, according to the same source.[87]

Implementing Preventive Measures and Planning

The federal government could plan responses in advance to prepare for potential future pandemics. Better planning could allow agencies to manage fraud and other risks while acting quickly to provide assistance. Generally, the major emergency assistance programs for businesses provided during the COVID-19 pandemic were created after the pandemic started or expanded existing programs. GAO's extensive oversight of these programs resulted in a number of insights that could help Congress better prepare for potential future pandemics. Some examples include the following:

- We made recommendations to improve COVID-19 emergency assistance programs. For example, we recommended that SBA implement plans to achieve program effectiveness and address

[86]According to the international law firm Simmons & Simmons, under the Belgian agreement with the financial sector, the first 3 percent of losses would be borne entirely by the financial sector. For losses of 3–5 percent, the financial sector and the government would assume equal shares of the losses. For losses above 5 percent, the government would assume 80 percent of the losses and the financial sector 20 percent.

[87]Organisation for Economic Co-operation and Development, "COVID-19 Government Financing Support Programmes for Businesses" (Paris, France: 2020); https://web-archive.oecd.org/2020-10-04/565646-COVID-19-Government-Financing-Support-Programmes-for-Businesses.pdf.

potential fraud in PPP and COVID-EIDL.[88] Such improvements could be incorporated into any future direct federal assistance.

- In 2022, we highlighted potential lessons learned for PPP and COVID-EIDL that could improve future pandemic responses. These lessons included conducting an improper payment risk assessment when designing the program, incorporating strong internal controls from the beginning of the program, taking early steps to address fraud risks, and ensuring clear communication with businesses. Emergency loans for small businesses have been on GAO's High-Risk List since March 2021.[89]
- In addition, in July 2023, we released a framework (five principles and corresponding practices) to provide Congress and federal agencies with an overall approach to managing improper payments in emergency assistance programs.[90] With emergency assistance, the risk of improper payments may be higher because the need to provide such assistance quickly can detract from the planning and implementation of effective controls. The framework is also intended as a resource for Congress to use when designing new programs or appropriating additional funding in response to emergencies.

Having emergency assistance programs in place before an event occurs could help businesses manage their risk and reduce uncertainty related to potential pandemic losses. More specifically, some stakeholders underscored the importance of a more planned response to the next pandemic. They said that Congress could help reduce some uncertainty by exploring ways to set up such programs in advance. One stakeholder stated this could include details on the kind and amount of assistance, qualification requirements, and circumstances under which assistance would become available. For example, Munich Re's Epidemic Risk

[88]We also recommended that both programs conduct and document a fraud risk assessment. Additionally, we recommended that PPP expeditiously estimate improper payments and report estimates and error rates, and that COVID-EIDL develop and implement portfolio-level data analytics across program loans and advances made in response to COVID-19 to help detect potentially ineligible and fraudulent applications. These recommendations were addressed. We also recommended that both programs develop a strategy that outlines specific actions to address fraud risks. These recommendations were partially addressed as of October 31, 2023. For a discussion of these recommendations, see GAO-22-105397.

[89]See GAO-22-105397 for more details on COVID-EIDL and PPP lessons learned. Also see GAO, *High- Risk Series: Efforts Made to Achieve Progress Need to Be Maintained and Expanded to Fully Address All Areas*, GAO-23-106203 (Washington D.C.: Apr. 20, 2023).

[90]See GAO-23-105876.

Markets Platform proposes that federal governments offer contingent loans to businesses.[91] The loans would be set up in advance and triggered if a pandemic occurred. Although a more in-depth analysis of this concept would be needed to fully understand its potential benefits and challenges, it provides a useful example of a federal noninsurance approach that uses loan contracts that aim to set clear terms and conditions for businesses before the next pandemic occurs.

It Is Unclear If Insurance Approaches Would Offer a Viable Alternative to Noninsurance Approaches

The extent to which an approach involving federal insurance might be preferable to a revised noninsurance approach is unclear. An approach in which private insurers share some of the risk could reduce the federal government's exposure, but such insurers currently lack the desire or ability to share much of this risk. Any such insurance is likely to be expensive and could require federal affordability assistance. Should some level of risk-sharing be achieved, it might prove difficult to maintain and improve, because insurers might join the market if they found it profitable but exit the market if they experienced losses.

Although business participation is critical to the success of any federal insurance program, achieving high take-up rates might prove challenging. Most businesses (60–70 precent) currently do not purchase business interruption coverage. Thus, using federal insurance to provide pandemic assistance would require many businesses to purchase a type of coverage they do not already have. Businesses also might decide to forgo coverage with the expectation of receiving some form of direct assistance (such as that made available in response to the COVID-19 pandemic).

Experiences with pandemic-related federal assistance programs provide insights into what might be achievable in the event of another pandemic as well as the difficulties that might be encountered. Lessons learned from these programs can shape the country's response in potential future

[91]Munich Re is a large, global reinsurer that also provides primary insurance and insurance-related risk solutions. Its Epidemic Risk Markets Platform proposes roles for private insurance markets, banking sector, capital markets, and the public sector in building capacity for pandemic business risk.

events, ideally contributing to a revised response with robust safeguards against fraud, lower costs, and some degree of risk sharing.

Agency Comments

We provided a draft of this report to the Department of the Treasury's Federal Insurance Office for review and comment. The Federal Insurance Office provided technical comments, which we incorporated, as appropriate.

We are sending copies of this report to the appropriate congressional committees and the Secretary of the Treasury. In addition, the report is available at no charge on the GAO website at https://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-8678 or CackleyA@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix II.

Alicia Puente Cackley

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Appendix I: Objectives, Scope, and Methodology

This report examines the (1) role private-sector insurance played in helping businesses address COVID-19 pandemic-related losses, (2) benefits and challenges of federal insurance approaches for addressing pandemic business losses, and (3) benefits and challenges of noninsurance approaches for addressing pandemic business losses.

For the first objective, we reviewed industry reports on and estimates of insured business losses by relevant insurance line and available information on the number of claims.[1] To describe business interruption policies in place and claims paid, we analyzed data in reports from the National Association of Insurance Commissioners (NAIC) on business interruption coverage in force as of December 31, 2019, and monthly claims from June to November 2020.[2] We assessed the reliability of these data by interviewing NAIC officials and reviewing documentation related to the collection of the data. We found the data to be reliable for understanding the extent to which businesses filed and were paid business interruption insurance claims to help address pandemic-related losses.

To characterize the percentage of commercial policies with business interruption coverage in the United States, we used an estimated range used by NAIC. We corroborated this estimate with an estimate by the Insurance Services Office based on insurer member data as of 2018. According to staff, members represented approximately 50 percent of the

[1]National Association of Insurance Commissioners, “COVID-19 Property & Casualty Insurance Business Interruption Data Call, Part 1: Premiums and Policy Information” (Washington, D.C.: June 2020); and “COVID-19 Property & Casualty Insurance Business Interruption Data Call, Part 2: Claim and Loss Information” (Washington, D.C.: November 2020). Also see Howden Broking Group Limited, *Times Are A-Changin’* (London, England: Jan. 4, 2022) and *Why Did Events Insurance Become So Expensive* (London, England: Feb. 10. 2022); and The National Council on Compensation Insurance, et. al., *COVID-19 and Workers Compensation: Phase II of the Multibureau Collaboration.*

[2]In April 2020, NAIC issued a data call to the insurance industry in 48 states, the Virgin Islands, and the District of Columbia to understand the relative size of the U.S. business interruption insurance market, the extent of exclusions related to the COVID-19 pandemic, and potential pandemic-related insured losses due to business interruption coverage. New Mexico and New York did not participate in the data call.

market.[3] We further corroborated NAIC's estimate with our estimate of the percentage of property/casualty premium in 2019 associated with policies with business interruption coverage, which we based on nationwide S&P Global Market intelligence data and NAIC data, respectively.

To determine characteristics of contested insurance claims, we analyzed data from the University of Pennsylvania's COVID Coverage Litigation Tracker, which tracked U.S. federal and state court cases on contested insurance claims related to the COVID-19 pandemic.[4] We received data as of October 23, 2023, for elements such as court filing location, industry sector, and most recent ruling. We also used information and data available on the project's website to identify appellate court rulings by state. We assessed the reliability of these data by interviewing an academic and staff associated with the project, reviewing database documentation, and testing the reasonableness of combinations of fields. We found the data to be reliable for analyzing the status and characteristics of contested business interruption pandemic-related claims.

We also interviewed insurers, reinsurers, insurance brokers, businesses, and related associations, as well as the Insurance Services Office, NAIC, and Treasury's Federal Insurance Office to understand how, if at all, insurance helped businesses recover pandemic-related losses and the availability and affordability of relevant insurance lines after the onset of the COVID-19 pandemic.

Lastly, we reviewed analyses by actuaries, insurance experts, and others on established insurability criteria and how characteristics of pandemic

[3]The Insurance Services Office is a property/casualty insurance industry association that develops standardized policy language. It is both a licensed advisory organization and appointed statistical agent for multiple states. According to staff, the office collects and maintains billions of insurance transactions for the purposes of developing and filing prospective loss costs with state regulators and providing required statistical reports to the regulators on behalf of their member insurance companies.

[4]The tracker follows insurance litigation in federal and state courts arising out of the COVID-19 pandemic. As of October 23, 2023, it could be accessed at https://cclt.law.upenn.edu/. This dataset contains all federal cases but may not capture all state cases because of the fragmented and incomplete nature of state court electronic filing and data sharing.

business risk compare against the criteria.[5] As part of the insurability analysis, we compared COVID-19 assistance to businesses through the Paycheck Protection Program with the total capital held by U.S. property/casualty insurers at the end of 2022 and with estimates of the highest-loss year for two federal insurance programs. We used S&P Global Market Intelligence data for the capital held and data from the National Flood Insurance Program and the Federal Crop Insurance Program to determine the year with the largest losses. We also interviewed actuaries, insurance experts, insurers, reinsurers, insurance brokers, and related associations about the insurability of pandemic business risk.

For the second and third objectives, we categorized federal approaches to assisting businesses with future pandemic losses into those that involved the use of insurance and those that did not:

- **Federal insurance approaches.** We split the insurance approaches into two subcategories: (1) one in which insurers share some of the risk with the federal government and (2) one in which the federal government assumes all the risk. To identify these insurance approaches, we reviewed industry and other proposals for federal

[5]See Aditya Khanna, Brian A. Fannin, and Tim Wei, "On Insurability and Transfer of Pandemic Business Interruption Risk," *Casualty Actuarial Society Research Brief* (2021). The brief summarizes criteria for insurability established and explained in actuarial literature. See the background section of our report for more information. Also see Organisation for Economic Co-operation and Development, "Responding to the COVID-19 and Pandemic Protection Gap in Insurance" (Paris, France: updated Mar. 16, 2021); Kai-Uwe Schanz, "An Investigation into the Insurability of Pandemic Risk," (Zurich, Switzerland: The Geneva Association, October 2020); Robert Hartwig and Robert Gordon, "Uninsurability of Mass Market Business Continuity Risks from Viral Pandemics," American Property Casualty Insurance Association (2020); Gunther Kraut, Paulina La Bonte, and Andreas Richter, "Pandemic risk management and insurance," working paper (Munich, Germany: May 24, 2023); Lisa Slotznick, American Academy of Actuaries, letter to Hon. Maxine Waters and Hon. Patrick McHenry, Committee on Financial Services, U.S. House of Representatives (May 11, 2020); and Denis Kessler, "Why Pandemic Risk Is Uninsurable" (Jan. 15, 2021)—accessed on May 2, 2023 at https://www.scor.com/en/expert-views/why-pandemic-risk-uninsurable.

pandemic insurance programs and various pandemic studies.[6] We also reviewed GAO and other reports on existing federal insurance programs (primarily the National Flood Insurance Program, Terrorism Risk Insurance Program, and Federal Crop Insurance Program).[7]

- **Noninsurance approaches.** Because of the wide range of possible programs that do not use insurance to assist businesses during a pandemic, we selected programs for our analysis that we believed best illustrated the benefits or challenges of noninsurance approaches relative to insurance approaches. We reviewed related GAO and

[6]Proposals include those from the American Property Casualty Insurance Association, Independent Insurance Agents & Brokers of America, Inc., and National Association of Mutual Insurance Companies, "Business Continuity Protection Program" (updated September 2020); Chubb, "Pandemic Business Interruption Program" (July 8, 2020); Zurich, "Zurich's Draft Concept for Facilitating Pandemic Protection" (Dec. 7, 2020); Pandemic Risk Insurance Act of 2020, H.R. 7011 (116th Cong.); and Business Continuity Coalition, "Pandemic Risk Insurance Act Business Continuity Coalition Proposal: Section-by-Section Description" (March 2021). Other pandemic studies include Lloyd Dixon and Jamie Morikawa, "Improving the Availability and Affordability of Pandemic Risk Insurance: Projected Performance of Proposed Programs" (Santa Monica, Calif.: RAND Corporation, 2021); Robert Klein and Harold Weston, "Feasibility Questions About Government-Sponsored Insurance for Business Interruption Losses from Pandemics," *Journal of Insurance Regulation*, 39, no. 7 (2020); Robert Hartwig, Greg Niehaus, and Joseph Qiu, "Insurance for economic losses caused by pandemics," *The Geneva Risk and Insurance Review*, 45 (2020): 134–170; Kai-Uwe Schanz, "An Investigation into the Insurability of Pandemic Risk" (Zurich, Switzerland: The Geneva Association, October 2020); Leigh Wolfrom, "Could insurance provide an alternative to fiscal support in crisis response?," *OECD Working Papers on Fiscal Federalism*, 40 (September 2022); Committee on Capital Markets Regulation, "Pandemic Business Interruption Insurance" (Cambridge, Mass.: July 2021); and Lloyd's, "Supporting global recovery and resilience for customers and economies" (2020).

[7]For example, see GAO, *Flood Insurance: FEMA's New Rate-Setting Methodology Improves Actuarial Soundness but Highlights Need for Broader Program Reform*, GAO-23-105977 (Washington, D.C.: July 31, 2023); *Farm Bill: Reducing Crop Insurance Costs Could Fund Other Priorities*, GAO-23-106228 (Washington, D.C.: Feb. 16, 2023); *Terrorism Risk Insurance: Program Changes Have Reduced Federal Fiscal Exposure*, GAO-20-348 (Washington, D.C.: Apr. 20, 2020); *Terrorism Risk Insurance: Market Is Stable but Treasury Could Strengthen Communications about Its Processes*, GAO-20-364 (Washington D.C.: Apr. 20, 2020); *Crop Insurance: Opportunities Exist to Improve Program Delivery and Reduce Costs*, GAO-17-501 (Washington, D.C.: July 26, 2017); and *Flood Insurance: Comprehensive Reform Could Improve Solvency and Enhance Resilience*, GAO-17-425 (Washington, D.C.: Apr. 27, 2017). Also see Department of the Treasury, Federal Insurance Office, *Report on the Effectiveness of the Terrorism Risk Insurance Program* (Washington, D.C.: June 2022); and Lloyd Dixon, Robert J. Lempert, Tom LaTourrette, and Robert T. Reville, *The Federal Role in Terrorism Insurance Evaluating Alternatives in an Uncertain World* (Santa Monica, Calif.: RAND Corporation, 2007).

other reports on U.S. COVID-19 assistance programs.[8] We also reviewed information on international COVID-19 assistance programs.[9]

We also identified the following five **policy goals** that we used to analyze the benefits and challenges of these approaches and that Congress also can use to evaluate future pandemic business responses: (1) ensure widespread, sufficient, and affordable insurance/assistance; (2) promote efficiency, transparency, and accountability; (3) promote risk mitigation and limit moral hazard; (4) reduce federal fiscal exposure or cost; and (5) promote private-sector participation. We developed these goals by analyzing many of the sources used to identify federal insurance approaches (including the federal insurance proposals and related academic and expert analyses and GAO reports on existing federal insurance programs). We used interviews with stakeholders as well as expert panels (described below) to verify the comprehensiveness and appropriateness of our goals.

We conducted two expert panels to identify and discuss the benefits and challenges of federal insurance and noninsurance approaches. The panels were several hours in length and were conducted virtually. To identify and select a diverse group of panel members, we conducted a

[8]For example, GAO, *Paycheck Protection Program: Program Changes Increased Lending to the Smallest Businesses and in Underserved Locations*, GAO-21-601 (Washington, D.C.: Sept. 21, 2023); *Unemployment Insurance: Estimated Amount of Fraud during Pandemic Likely Between $100 Billion and $135 Billion,* GAO-23-106696 (Washington, D.C.: Sept. 12, 2023); *A Framework for Managing Improper Payments in Emergency Assistance Programs*, GAO-23-105876 (Washington, D.C.: July 13, 2023); *Improper Payments: Fiscal Year 2022 Estimates and Opportunities for Improvement*, GAO-23-106285 (Washington, D.C.: Mar. 29, 2023); *COVID-19: Current and Future Federal Preparedness Requires Fixes to Improve Health Data and Address Improper Payments*, GAO-22-105397 (Washington, D.C.: Apr. 27, 2022); *Economic Injury Disaster Loan Program: Additional Actions Needed to Improve Communication with Applicants and Address Fraud Risks*, GAO-21-589 (Washington, D.C.: July 30, 2021); and *COVID-19: Opportunities to Improve Federal Response and Recovery Efforts*, GAO-20-625 (Washington, D.C.: June 25, 2020). Also see Small Business Administration, *Protecting the Integrity of the Pandemic Relief Programs: SBA's Actions to Prevent, Detect and Tackle Fraud* (Washington, D.C.: June 27, 2023).

[9]For example, see "Job retention schemes during the COVID-19 lockdown and beyond," background document for chapter 1 in Organisation for Economic Co-operation and Development, *OECD Employment Outlook 2020: Worker Security and the COVID-19 Crisis* (Paris, France: July 7, 2020); Organisation for Economic Co-operation and Development, "COVID-19 Government Financing Support Programmes for Businesses" (Paris, France: 2020), www.oecd.org/finance/COVID-19-Government-Financing-Support-Programmes-for-Businesses.pdf.; and Shekhar Aiyar and Mai Chi Dao, "The Effectiveness of Job-Retention Schemes: COVID-19 Evidence from the German States," *International Monetary Fund Working Paper* (Oct. 15, 2021).

literature search for studies on pandemic response issues and reviewed past GAO work and workpapers developed from prior interviews. The panels consisted of representatives from the following groups:

- one reinsurance company (Munich Re) and one reinsurance association (Reinsurance Association of America);
- one insurance company (Lloyd's) and four insurance associations (American Property Casualty Insurance Association, Captive Insurance Company Association, National Association of Mutual Insurance Companies, and Wholesale and Specialty Insurance Association);
- one insurance brokerage firm (Marsh) and one broker association (Council of Insurance Agents and Brokers);
- two business groups (Business Continuity Coalition and Risk and Insurance Management Society);
- two associations of actuaries (American Academy of Actuaries and Casualty Actuarial Society);
- two organizations that have studied pandemic response issues (RAND Corporation and the Organisation for Economic Co-operation and Development); and
- NAIC and the Department of the Treasury's Federal Insurance Office.

The panels, moderated by GAO staff, were recorded and transcribed to ensure that we accurately captured the experts' statements. We reviewed and analyzed the transcripts as a source of evidence.

We also separately interviewed each of the panelists, as well as one epidemiologist and representatives from two large insurance companies (Chubb and Zurich), one risk-modeling company (Verisk), and a variety of businesses or business associations (Exhibitions and Conferences Alliance, Independent Film and Television Alliance, Marriott International, National Restaurant Association, Paramount Global, and Real Estate Roundtable).

We conducted this performance audit from May 2022 to December 2023, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: GAO Contact and Staff Acknowledgments

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In addition to the contact named above, Patrick Ward (Assistant Director), Silvia Arbelaez-Ellis (Analyst in Charge), Lijia Guo, Karen Jarzynka-Hernandez, John Karikari, Scott McNulty, Marc Molino, Tim Planert, Barbara Roesmann, Stephen Ruszczyk, Jessica Sandler, Hiba Sassi, Andrew Stavisky, and Frank Todisco made key contributions to this report.

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