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Business Continuity Insurance in the Next Disaster

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ABSTRACT

This article draws lessons from the business support policies pursued in the COVID-19 pandemic to guide policy design for the next disaster. We contrast the performance of the Paycheck Protection Program to the Main Street Lending Program to illustrate how design principles—targeting, repayment terms, and deployment through the banks versus government agencies—affect policy outcomes. We develop a framework for understanding why a novel business support policy could usefully complement traditional support programs. One surprising insight that emerges from this analysis is that many of the market failures used to justify support during the pandemic also arise in “garden-variety” recessions. Given our framework, the policy case for small-business support during the recovery is considerably weaker than during the disaster, though credit policies that promote firm entry could aid the reallocation process.

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1. Introduction

The COVID-19 pandemic triggered an economic shock in the United States unparalleled in severity and breadth since the Great Depression. The shock was especially severe in the small-business sector, as many small firms operate in industries dependent upon in-person interaction. In response to this shock, policymakers deployed a suite of business support policies equally unprecedented in scale and generosity. Because past recessions provided little guidance for how to design support programs, a range of approaches were pursued, with varying degrees of success and efficiency. As we emerge from the crisis with fresh memories and the benefit of ongoing research, the current moment provides an opportunity to design better policy to prepare for the next disaster.

The purpose of this article is to draw some lessons from the business support policies pursued in the pandemic to guide future policy design. We first briefly describe the unique features of how the COVID-19 disaster affected small businesses, which include the scale of revenue losses, the number of firms simultaneously affected, and the duration of the crisis. We then focus on two business credit programs designed to help small, private firms—the Paycheck Protection Program (PPP) and the Main Street Lending Program (MSLP)—and describe how their designs affected take-up, policy impact, and the distribution of benefits.

The PPP was designed quite liberally, delivering forgivable loans to most small businesses with relatively few strings attached. In contrast, the MSLP was designed to protect federal funds by delivering support via low-interest loans that required banks to retain credit risk. The programs were similar on some dimensions with both offering broad eligibility and deferred repayment for borrowers. Yet they differed considerably in the extent of loan “softness,” i.e., the extent to which repayment would be required in the future and conditioned on future performance.

The performance of these programs illustrates how design principles affect policy outcomes. Both programs received allocations of approximately \$600 billion in the spring of 2020. Ultimately, the PPP managed to disburse 80% of these funds to nearly five million borrowers in just over three months, while the MSLP expired in December 2020, having distributed just 3% of its total allocation and extending 1,800 loans.

While the PPP was quite successful in disbursing funds, there is strong reason to believe it was overly generous in not requiring repayment from firms that faced relatively little hardship. An emerging (but unsettled) consensus in the literature suggests that the funds proved inframarginal for many firms, in that their behavior would have changed little in the absence of support. Because private business ownership is so concentrated and the PPP was so large, one could therefore characterize the program

as a tax rebate to top-1% owners equivalent to more than a full year of their typical business tax burden in return for a positive, but relatively small, impact on aggregate employment.

The lesson from both programs is that there is room for improvement in policy design for the next disaster. We turn to sketch a framework for understanding why a novel business support policy would usefully complement traditional social insurance programs. The question facing policymakers is whether providing financial support to small businesses during a disaster improves social welfare. In the absence of spillovers or financial frictions, the answer is no. In this benchmark world, firm failures are efficient, firm owners are diversified and prepared to bear aggregate risk, and barriers to entry are low.

The pandemic made salient the extent to which we must depart from this frictionless model. Supporting small businesses during a disaster can alleviate congestion externalities in bankruptcy courts, in asset markets when many firms would be forced to liquidate, and in the labor market during a time of mass layoffs. Support can help firms overcome nominal rigidities in capital contracts that prevent renegotiation and force owners to bear overhead costs that are ideally shared with capital providers. Support can strengthen firm balance sheets during the disaster, ensuring that firms are healthy enough to rehire workers and resume normal operations when the crisis abates. Finally, support can overcome traditional financial frictions that are not easily addressed through conventional monetary or credit policy, including by smoothing the uninsurable idiosyncratic risk borne by entrepreneurs.

One surprising insight that emerges from this analysis is that many of the market failures used to justify support during the pandemic also arise in “garden-variety” recessions, though we do not believe support during a normal recession should be as generous as during a noneconomic disaster. Support should only be deployed in circumstances where it would not be a bailout for malfeasance or poor past performance. These conditions are much more likely to be met during a noneconomic disaster. At the same time, a case can be made that a program of partial business continuity insurance during recessions could improve welfare.

The experience of the PPP and the MSLP highlight the importance and difficulty of solving the “targeting problem”—which firms should benefit? And how generous should those benefits be? A program that is too generous will be unfair and disproportionately benefit wealthy entrepreneurs. A program that is too restrictive will fail to make funds widely available in a timely fashion. We consider four dimensions of targeting, each of which were hotly debated during the pandemic: firm size, ownership, shock severity, and industry. We then describe key considerations in program implementation,

focusing on the goal of helping firms cover recurring fixed, nonlabor obligations during a disaster; the timing of repayment; and whether a program is better administered by banks, the IRS, or another government agency.

Finally, we assess the extent to which our framework supports policy action to promote the economic recovery. To us, the policy case for small-business support during the recovery is considerably weaker than during the disaster. The market failures targeted by business support programs are most severe during the crisis, when firms face recurring obligations, difficulty in renegotiation, and the absence of suitable liquidity support from private markets. One area to focus on is ensuring that forgiveness grants are easy to apply for so that firms do not face surprise debts when the grace period for their PPP loans ends. Another option is to allow temporary continuation of unemployment insurance to the self-employed when they start a new firm. A final policy option would relax some of the restrictions in the SBA's subsidized loan program to support new entrants and address financial frictions and unusually large demand for loans that could aid the reallocation process.

2. Surveying the pandemic damage and policy response

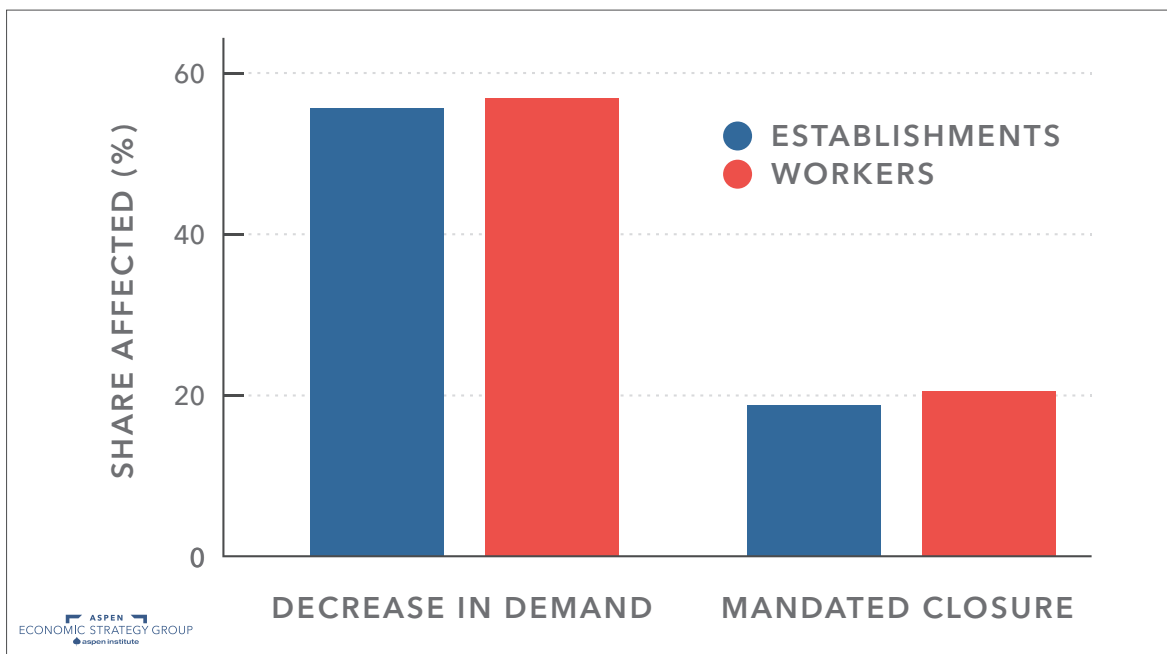
2.a. Facts on small business hardship during the pandemic

The COVID-19 pandemic triggered an economic shock unparalleled in severity and breadth across the U.S. economy since at least the Great Depression. Figure 1 presents statistics from the Bureau of Labor Statistics (BLS) Business Response Survey to the Coronavirus Pandemic. According to the survey, 1.6 million establishments experienced a government-mandated closure of their business in the spring of 2020, equal to 18.7% of all private-sector establishments, to reduce the spread of the virus. These closures affected 26 million workers, or 20.5% of private sector employment.

Beyond those firms forced to close, many more firms experienced substantial drops in demand due to the fall in mobility, stay-at-home orders, and shift to remote work for many workers. Overall, 4.7 million establishments, which account for 55.6% of all establishments, experienced a decrease in demand for products or services over this time. These establishments accounted for 72 million workers, or 56.9% of private sector employment. The duration of the economic shock was also noteworthy. Figure 2 presents data from alternative sources that reveal how long many businesses suffered. Panel A presents data from the first four phases of the Census Small Business Pulse Survey, in which respondents answer the question: "In the last week, did this business have a change in operating revenues/sales/receipts, not including any financial assistance or loans?" Panel B presents data from the Opportunity Insights

(OI) economic tracker on small-business revenue declines relative to January 2020 for firms in all industries, as well as for the food and accommodation and professional services subgroups.

Figure 1: The initial effect of the pandemic on businesses and workers

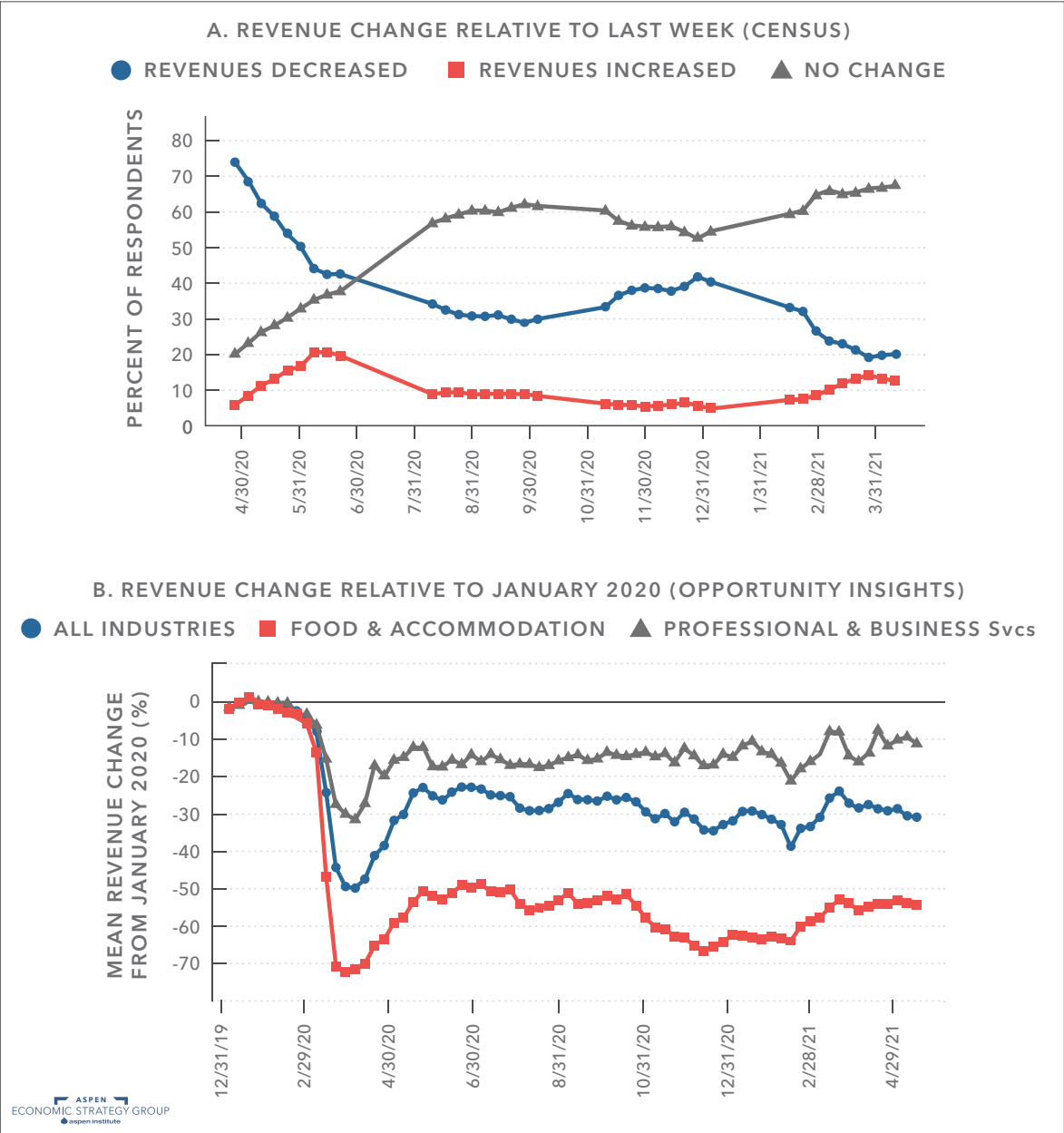


Source: BLS

Both series show a sharp, widespread decline in revenues during April and May 2020 and slow and incomplete recoveries subsequently. At the end of April, the first week of the Census survey, more than 70% of respondents report a revenue decline. This level declines to just over 40% by the beginning of June, as many states lifted stay-at-home orders and the economy partially reopened. However, the level flattens over the summer of 2020, as does the share of respondents reporting increases or no change. These patterns then partly reverse during the second wave of virus spread in the winter of 2020. Only in the spring of 2021 do we see the share of respondents reporting decreases in revenues fall to 20%.

The patterns are broadly similar for the OI data, with mean revenue declines of 50% at the trough in April 2020 and revenues remaining 30% below initial levels at the end of May 2021. The OI data also reveal the scale of heterogeneity across more and less exposed industries. Professional service firms only lost 30% of revenues on average at the trough and recovered most of this ground by May, while food and accommodation firms lost 70% of revenues at the trough and remained below 50% for the duration of the pandemic.

Figure 2: The duration of the shock to small business revenues

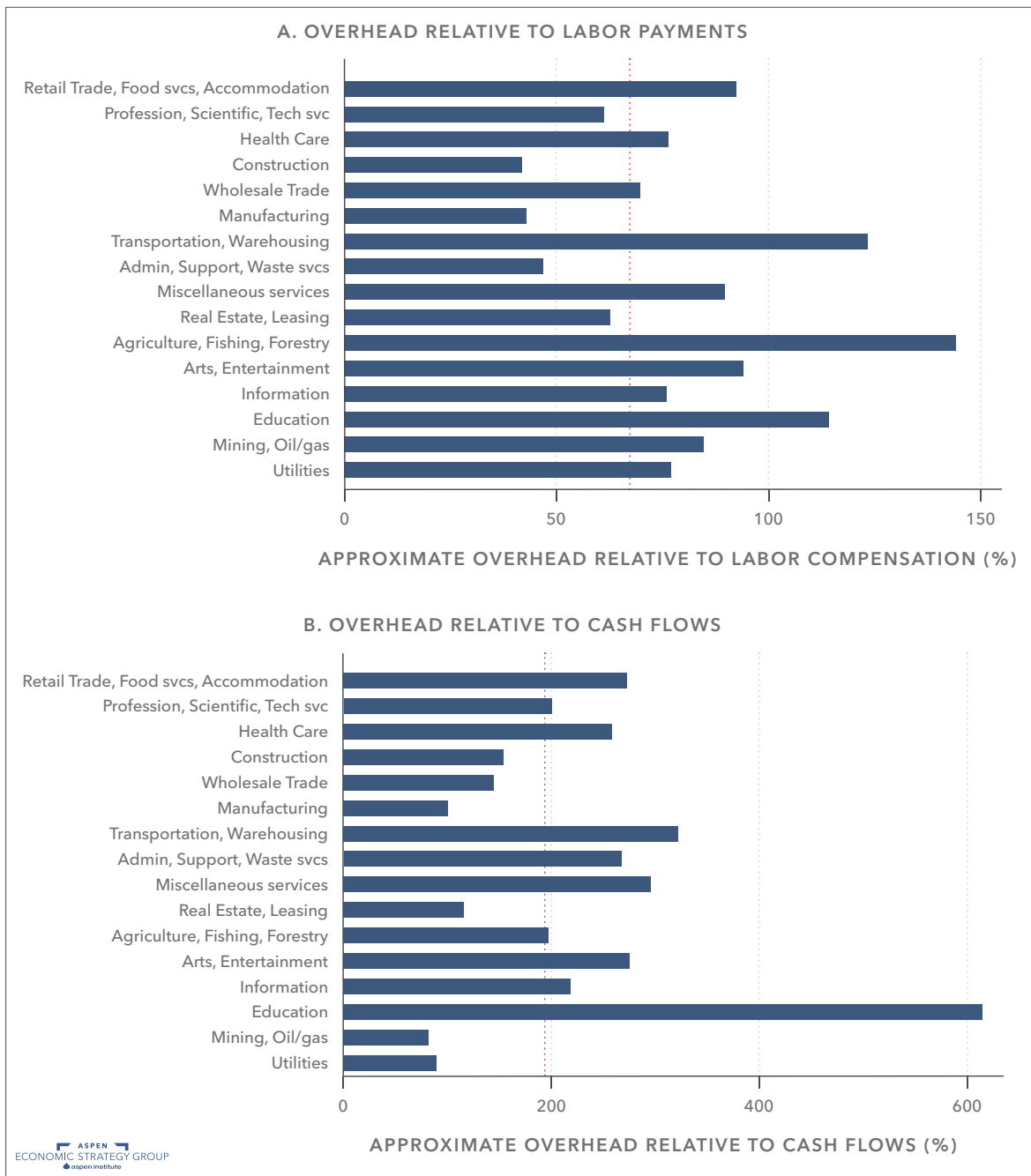


Source: Census Small Business Pulse Survey and Opportunity Insights tracker using data from Homebase.

During this time of temporary closure and revenue declines, small businesses remained obligated to cover overhead costs. Figure 3 presents an estimate of overhead costs relative to the cost of labor compensation and relative to a measure of cash flows for different industries. We sort industries in declining order of total overhead costs, as estimated in Hanson et al. (2020a). Overhead costs are measured using tax return data from a representative and weighted sample of S-corporations, which are private, closely held firms that account for a large share of employment among small

businesses. We define overhead costs as revenues less the cost of goods sold, labor compensation, profits, and investment. This residual would include rent, interest payments, utilities, maintenance expenses, and local taxes. Cash flows are defined as profits plus interest and depreciation.

Figure 3: Overhead costs for small businesses are large



Source: Hanson et al. (2020a) using data from Smith et al. (2020)

On average, these firms face overhead costs equal to approximately 70% of labor payments and 200% of cash flows. Thus, even in a world with fully flexible labor expenses, sharp and persistent declines in revenues placed massive burden on these firms to meet or renegotiate these obligations or else risk permanent failure. In addition, some firms face a relatively higher burden than others. These obligations are especially important in retail trade, food and beverage services, and accommodations, sectors that also experienced worse than average economic shocks. In contrast, firms in construction and professional services face relatively light burdens due to lower capital intensity and higher labor intensity.

2.b. The impacts of business support programs

In response to the unusually sharp, severe, and widespread shock to businesses, policymakers in the United States deployed support policies equally unprecedented in scale and generosity. The two most relevant for our purposes were the PPP and the MSLP.

The intent of the PPP was to assist small firms, defined as those with fewer than 500 employees.¹ Firms were eligible for loans up to the minimum of 2.5 months of payroll in normal times and \$10 million. While firms applied for PPP loans through private banks, these low-interest loans were guaranteed by the Small Business Administration (SBA). In addition, if most of the loan proceeds were used to cover eligible payroll and nonpayroll expenses, PPP loans would be forgiven. Aside from the size threshold, eligibility was defined quite broadly. Importantly, the extent of forgiveness did not depend on the severity of the shock a firm faced. Given the guarantee and the generous eligibility and forgiveness criteria, the expectation among policymakers was that most of the loans would be forgiven, thus converting to grants. To the extent the loans were not forgiven, they carried a 1% interest rate with all payments deferred for at least one year and a two-year maturity.

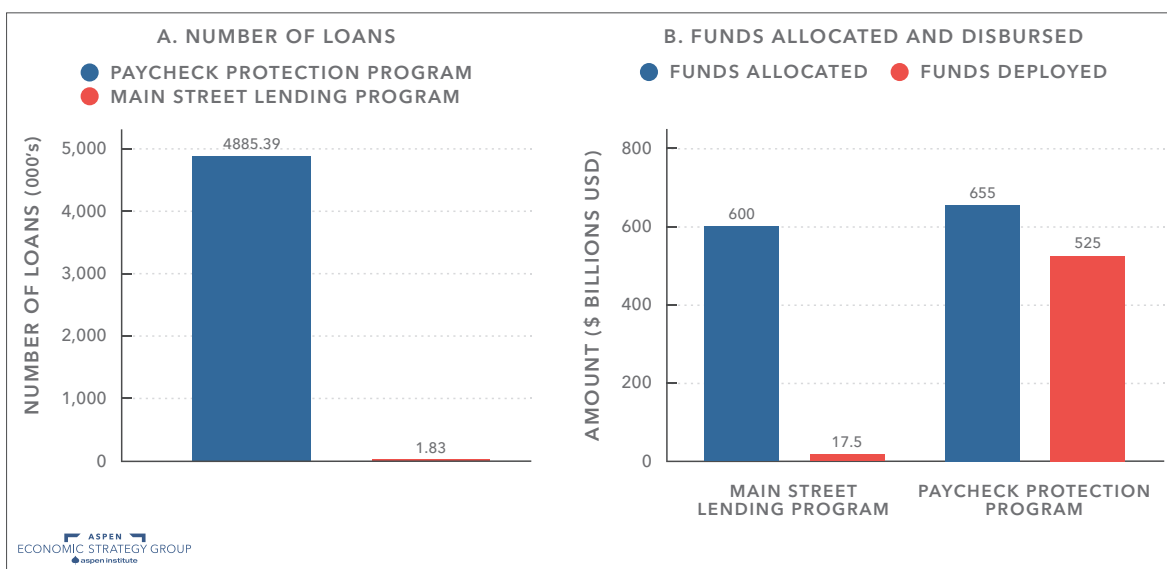
The Federal Reserve and the Department of the Treasury established the \$600 billion MSLP to provide loans of up to \$35 million to small- and medium-sized firms. Under the terms eventually adopted in late July, private banks made loans to qualifying firms, with the MSLP purchasing 95% of the loan and the originating bank retaining 5%. Firms were eligible for the MSLP if they satisfied size restrictions on the number of employees and revenues and also had relatively low leverage. All loans made under the program had a five-year maturity with principal payments deferred for two years and carried an interest rate of LIBOR plus 300 basis points. Firms were generally prohibited from using these loans to prepay or refinance existing debt and were subject to restrictions on executive compensation, dividends, and repurchases.

¹ Firms in the Accommodations and Food Service sector (NAICS 72) could apply this threshold at the establishment level.

Three aspects of these programs deserve note. First, both programs applied quite broad targeting criteria, thus allowing participation to cover most private sector employment outside of large companies. Second, both programs featured delayed repayment, thus offering more lenient terms relative to a conventional private sector loan. Third, the programs differed considerably in the extent of loan “softness,” i.e., the extent to which repayment would be required in the future. The PPP’s repayment terms were extremely soft—all firms that used the funds on eligible categories over an 8- or 24-week period were absolved from repayment. By contrast, the MSLP’s repayment terms looked much more like traditional loans. To the extent that lenders were concerned about default, and given the cap on the loan’s interest rate, loan supply under the 95% guarantee was likely to be much more conservative than under the 100% PPP guarantee. Moreover, loan demand by firms for traditional loans was likely to be much more tentative than demand for a likely-to-be-forgiven loan.

Figure 4 presents data from the two programs, pointing starkly toward how the differences across programs likely affected their distribution. Both programs received allocations of approximately \$600 billion in the spring of 2020. Despite some initial hiccups, the PPP managed to disburse 80% of these funds in just over three months. In sharp contrast, the MSLP did not begin taking applications until June and expired in December 2020, having distributed just 3% of its allocation. While the PPP reached nearly five million borrowers, the MSLP issued just over 1,800 loans. Moreover, most of these funds were deployed relatively late in the pandemic in November and December of 2020. Thus, we can safely conclude the impact of the MSLP on the economy was limited.

Figure 4: Comparing pandemic credit programs, PPP vs. MSLP



Source: The PPP data from the SBA, the MSLP data from the Federal Reserve.

Given the PPP managed to deploy a remarkable amount of funds, researchers moved rapidly to evaluate the PPP as data became available. What do we know about the impacts of the program on firm behavior and survival? A full review is beyond the scope of this article, but we highlight a few points that bear on the topic of program design principles.

First, broad eligibility criteria and program generosity contributed to very strong loan demand, such that the first tranche of funds was exhausted in less than two weeks. This fact illustrates the benefits from limiting program targeting, though it also reflects the notion that most firms expected ultimate loan forgiveness.

Second, the interaction between scarce initial funds and program deployment through the banking system led some borrowers to access the program ahead of others. These borrowers tended to be larger, connected to certain overperforming banks, and more likely to be preexisting loan customers.² This fact points toward how program design details—specifically, whether to use private or public entities to distribute support—mediate the distribution of program resources.

Third, the program had considerable employment effects, with some uncertainty about the estimated magnitudes.³ Even more modest estimates suggest employment impacts of several million jobs retained due to the program. However, when compared to the total size of the program, these estimates are relatively modest and point toward a substantial share of funds going to inframarginal borrowers. If the program had instead embedded soft repayment terms or conditioned forgiveness on revenue losses, as we propose below, the bang-for-buck would likely have looked much more favorable and the regressive features of the program would have been mitigated.

Finally, there is evidence that, while the funds may not have contributed to immediate employment effects, firms used the funds to strengthen their balance sheets, either by holding the loan as savings or by paying off outstanding debts, and to avoid defaults on fixed payments.⁴ Thus, while the short-term employment impacts may well have been small, the longer-term impacts on firm survival could enable larger employment impacts later.

2 Bartik et al. (2020) and Granja et al. (2020) analyze the PPP targeting and the role of banks in mediating the distribution of funds. Humphries, Neilson, and Ulyssea (2020) shows that borrower sophistication appears to play a role in program access for small firms and sole proprietors.

3 An active literature studies the employment impacts of the PPP using alternative research designs. Autor et al. (2020), Chetty et al. (2020), and Hubbard and Strain (2020) use the 500 worker eligibility threshold to estimate employment effects, with the former two papers finding modest impacts and the latter paper finding somewhat larger impacts. Granja et al. (2020) and Faulkender, Jackman, and Miran (2020) use regional variation in program exposure generated by differences in bank performance in deploying loans, with the former paper finding modest impacts and the latter paper finding large impacts. Pardue (2020) finds that firms reduced employment after the expiration of headcount requirements needed to receive loan forgiveness.

4 Bartik et al. (2020) find that the PPP increased the firms' expected survival probability. Granja et al. (2020) find that the PPP increased firm cash holdings and reduced the probability firms missed loan and non-loan payments. Chodorow-Reich et al. (2020) find that firms used the PPP funds to pay down other loans.

More confident conclusions will take a few years to develop as more complete data arrive. In particular, we are still awaiting comprehensive data that adequately identify permanent firm failures and allow us to estimate the effects of the PPP on survival. We have also seen little analysis of either applications for loan forgiveness or the more recent tranches of PPP funding deployed in the winter and spring of 2021.

3. A framework for small business support in a disaster

During the COVID-19 pandemic, policymakers faced an unprecedented shock to small businesses with little guidance from past disasters for how to design support programs. As a result, a range of approaches were pursued, with varying degrees of success and efficiency. It is therefore useful to take a step back and reflect on whether we should prepare for the next disaster by establishing similar or better programs.

The question facing policymakers is whether providing financial support to small businesses during a disaster improves social welfare. In the absence of spillovers or financial frictions, the answer is no. In this benchmark world, firm failures are efficient, firm owners are diversified and prepared to bear aggregate risk, and barriers to entry are low. Under these circumstances, social insurance programs that target workers—such as unemployment insurance—or that provide income support to a broader group of people in need—such as economic impact payments, Medicaid, and food stamps—provide adequate support.

3.a. Rationales for small-business support

The speed, scale, and severity of the COVID-19 pandemic made salient the extent to which we must depart from the frictionless model. Consider first the case of congestion externalities. Even an economy in shock can easily absorb the resources idled by one small-business failure. When a million small businesses that collectively employ tens of millions of workers all risk simultaneous failure, strains appear elsewhere in the system.

We highlight three types of congestion externalities. First, there may be spillovers generated by congestion in the bankruptcy process. As a crisis persists, many firms will exhaust their cash reserves and become unable to service their debts and other fixed obligations. In some cases, firms will be able to work with their liability holders to voluntarily restructure their obligations. However, in many cases, businesses—especially small businesses—may be unable to renegotiate out of court. Conflicts of interest between creditors and firms, coordination failures between creditors, and other frictions are the reason bankruptcy courts exist in the first place. Eventually,

concerns about firm liquidity become concerns about solvency, increasing the severity of these frictions and forcing firms to file for bankruptcy protection or permanently close.

While the U.S. bankruptcy process does an excellent job of allocating losses to liability holders and enabling large firms to restructure in normal times, it is not designed to deal with a mass wave of bankruptcies. Such a wave of business bankruptcies would create significant delays in bankruptcy court proceedings and a shortage of debtor-in-possession financing for firms operating under bankruptcy protection.

A second congestion externality arises in capital markets when a glut of firms close simultaneously. The resulting rushed business liquidations and fire sales could create large deadweight losses for society. Related to this idea is the notion that a bias toward excessive liquidation, especially for small firms, destroys franchise capital that can only be slowly rebuilt with significant start-up costs. Inefficient liquidation at substantial scale imposes negative spillovers by weakening asset values and hence the balance sheets of healthy firms.

Third, congestion in the labor market due to mass furloughs and layoffs could prevent workers from finding a new job or reentering the workforce, as well as overwhelming the unemployment insurance (UI) system. While we view the UI system's performance during the pandemic more favorably than some others in reaching an unprecedented number of beneficiaries, the pandemic did highlight a need to invest in upgrading UI systems across states to ensure timely receipt of benefits for large numbers of workers, changes to benefit formulae, and the possible extension of benefits to the self-employed.

The pandemic shutdowns came quickly, leaving many firms with significant overhead obligations—including rent, utilities, loan payments, maintenance, and employee benefits—and no cash flows to cover these costs. Nominal rigidities in capital contracts that prevent renegotiation can force owners to bear these costs and bias them toward closing permanently. This force operates not only for small businesses with loans but also for the many non-borrowers who rent real estate and equipment. When a firm closes permanently, its brand capital liquidates, as does the nexus of contracts embodied in that firm, including its relationships with customers, suppliers, workers, and capital providers. The fixed costs of startup, which create this intangible capital, are borne by the next set of owners and not fully internalized by the current owners. Such inefficient liquidation can thereby lead to an inefficiently slow recovery.

Weakened aggregate demand is another source of potential spillovers that may warrant support for small businesses. In the absence of government interventions,

many businesses that are lucky enough to avoid bankruptcy during the downturn could nonetheless emerge with weakened balance sheets in an environment with low aggregate demand. This erosion in the health of firm balance sheets could greatly limit the ability of businesses to rehire workers and resume normal operations. Aid to firms in a time of crisis can help ensure that the downturn itself does not hobble the economy's productive capacity, setting the stage for swift recovery.

In addition to the various externalities associated with a mass of small-business failures, there are traditional financial frictions. In a severe downturn, particularly one triggered by shocks of noneconomic origins like natural disasters, firms that would otherwise be viable after the downturn may not be able to access capital markets to obtain the financing needed to survive the shock. For instance, in the early stages of the COVID-19 pandemic in March 2020, capital markets froze, and bank lending standards tightened substantially as banks anticipated heavy losses on existing loans. Against this backdrop, it would have been challenging (if not impossible) for many small businesses to raise incremental financing to offset their unprecedented revenue losses and help survive the pandemic. The vast majority of smaller, privately owned businesses in the United States, as well as many larger, publicly traded firms, did not have the financial reserves needed to survive such large, temporary declines in revenue. In the absence of aid, these firms would have been forced to lay off many of their employees and would have struggled to meet recurring fixed obligations.

Given the noneconomic origins of the crisis and the relative health of the financial system during the pandemic, traditional monetary and credit policy could not address the core problem facing small firms. This crisis caused increased demand for external financial support by small firms that were temporarily closed and required repayment terms that were much more flexible than traditional loan terms. This situation contrasts with a financial crisis, which can be thought of as a fall in supply of external finance driven by impaired banks. While traditional lender-of-last-resort policies focused on the financial system can help restore credit supply, these policies are less well-equipped to meet abnormally high demand and flexible repayment needs.

In the presence of these economic frictions and externalities, it is worth noting that any evaluation of government support programs needs to account for fiscal spillovers when estimating the cost of the program. For example, if there are significant employment or output effects of supporting businesses, these generate fiscal spillovers by raising tax revenue via the income, payroll, and sales tax. Such effects can meaningfully alter the perceived costs and benefits of a program relative to focusing only on the cost of the direct transfer.

A final and less appreciated departure from the standard model of firm support concerns the nature of firm ownership. In the standard model, capital is rented to firms by a large, diversified, representative firm owner. In reality, small- and medium-sized businesses are owned by one or two individuals, for whom the firm's capital accounts for a disproportionate share of their total wealth. In other words, entrepreneurs bear a dramatic amount of idiosyncratic risk entwined with the fate of their firms. This risk is uninsurable in private markets as an inescapable consequence of the same financial frictions that prevent firms from costlessly accessing external funds.

In a world with uninsurable idiosyncratic risk borne by entrepreneurs, supporting small businesses during a disaster can yield valuable social insurance benefits. Firm owners are typically not eligible for other forms of social insurance, such as UI. Moreover, UI may not provide adequate risk mitigation, given losses at the firm-level scale with firm size and may be more persistent than the typical job loss. Against this argument, one might argue that because many business owners are relatively wealthy, the consumption-smoothing benefits of supporting them are likely small. This fact highlights the importance of proper targeting when estimating a program's potential insurance value: it may be best to condition program generosity on the wealth or total income of business owners.

3.b. Garden-variety recessions are different, but. . .

One surprising insight that emerges from this analysis is that many of the market failures used to justify support during the pandemic also arise in "garden-variety" recessions. A case can therefore be made that a program of partial business support during recessions could improve welfare. At the same time, support should only be deployed in circumstances where it would not be a bailout for malfeasance or poor past performance. These conditions are more likely to be met during a noneconomic disaster.

First, garden-variety recessions are often associated with the efficient closure of low-productivity businesses (Schumpeter 1939; Foster, Grim, and Haltiwanger 2016). Current losses reflect future losses, and hence activity must be reallocated in the medium run. In garden-variety recessions, there is also a reduced need to preserve the intangible capital associated with startup costs because replacement entrants are less likely to resemble those that exit. In other words, adjustment costs are a necessary step in reallocation and are best paid when the net costs of such reallocation are low. Providing support that prevents firms from closing and labor and capital from new deployments might well postpone recovery and deter long-run productivity growth.

Second, the bankruptcy and unemployment systems work reasonably well in absence of congestion. In a garden-variety recession, firm failures are less concentrated in a narrow window of time. Instead, they occur over many months, which allows time for capital markets and traditional social insurance programs to respond. However, to the extent we worry about financial amplification, there might well be a case for low-interest government loans to small firms. Clearly, the extraordinary support programs targeting the banking system during the Global Financial Crisis (GFC) forestalled a more severe recession in 2008 and 2009. As noted above, the macroprudential toolkit offers perhaps a better source of useful policies when the problem faced by firms is a dysfunctional supply of external finance.

Thus, we would not have advocated generous small-business support during the GFC. Unlike the GFC, which was largely caused by reckless corporate behavior, the COVID-19 pandemic was a natural disaster. Like U.S. households, U.S. firms had not self-insured against the risk of a deadly global pandemic, nor should we have expected this. Indeed, the pandemic triggered such a large and widespread economic shock that even prudently managed firms faced an elevated risk of failure. And, while it is certainly the case that some firms had unwisely taken on excessive leverage, the mere fact that firms had been returning profits to shareholders instead of building up vast cash buffers is a healthy feature of our economic system, not a reckless act to be punished. A central feature of the COVID-19 pandemic was that declines in a firm's revenue during the pandemic were not highly informative about the firm's post-pandemic prospects. Such a pattern might also characterize other natural disasters, major wars, or a large-scale cyberattack, in which case concerns that business support is a bailout, keeping alive "zombie" firms that should be liquidated, are relatively low.

Nonetheless, it is desirable to allocate losses to firms' equity holders, creditors, and other fixed claimants—both to protect taxpayers and for reasons of fairness. Our view is a support program should be designed to assign as much economic loss to these private sector actors as is practicable, while simultaneously reducing the scope for damaging deadweight losses and spillovers that would impede a broader economic recovery. Given the potentially catastrophic consequences of a wave of business bankruptcies for the broader economy, we believe that, when circumstances warrant such a program at all, it is prudent to err on the side of caution and make the program broadly available on terms that are not overly onerous.

4. Targeting and implementation principles

The social welfare framework described in the previous section motivates our view of which firms to target and how to implement a support program. Previously, we

articulated with Jeremy Stein (2020) concrete implementation details for a business support program called Business Continuity Insurance to be rolled out in response to the COVID-19 pandemic. In this section, we describe a few of the high-level ideas from that piece and how they relate to the general principles above.⁵

4.a. Targeting

In the ideal world, assistance would be optimally targeted toward firms (1) with operations severely affected by the shock; (2) that are unable to smooth the shock on their own; or (3) for which bankruptcies would create substantial spillovers. In short, the program should target firms with the highest private and social insurance value relative to program cost. In practice, to minimize the program's administrative burden and maximize take-up, we believe any program should use relatively simplistic targeting that exploits information already available to the government.

We consider four dimensions of targeting, each of which were hotly debated during the pandemic: firm size, ownership, shock severity, and industry. First, consider firm size. Small- and medium-sized firms face more severe financial constraints in normal times, so it is natural to expect such firms to be less able to renegotiate obligations to lenders and landlords. There are also good reasons to believe that the costs of financial distress and bankruptcy are greater for smaller firms, which are more likely to be liquidated, than for larger firms. Financial constraints are difficult to measure directly; firm size—measured using past revenues or employees—is therefore a sensible proxy that is difficult to manipulate and relatively easy for policymakers to measure. Given that even larger midmarket firms with several hundred employees and between \$10 million and \$100 million in revenues might struggle to raise financing in private markets during a crisis, we believe firm size thresholds should include such firms in order to cover a substantial share of private sector employment.

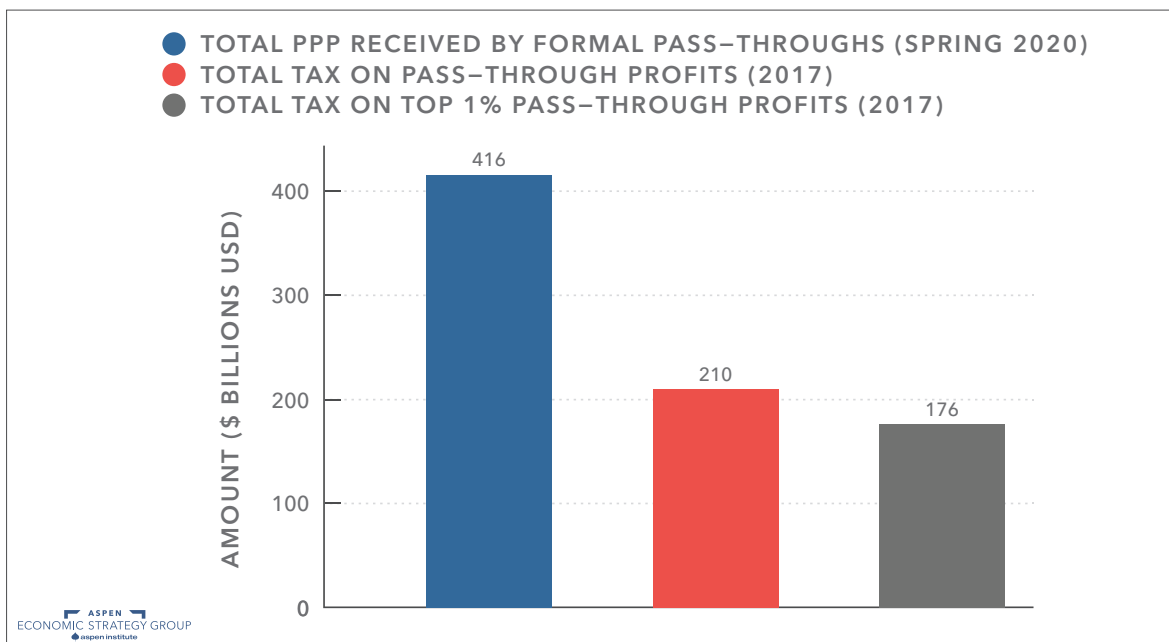
The second key dimension for targeting is firm ownership. Standalone, privately owned firms are more likely to face financial constraints and renegotiation frictions than firms with diversified ownership bases. The latter includes both publicly held firms and firms affiliated with financial investors, such as private equity or venture capital. Through their owners, these firms have access to large backstop balance sheets and the relationship capital that financial investors can deploy to renegotiate contracts when in distress. For these reasons, support programs should ideally exclude public and affiliated firms, for whom the welfare benefits of support are likely small.

⁵ See Hanson et al. (2020a) for our prior policy proposals and Hanson et al. (2020b) for two models that motivate business credit programs targeting larger firms.

Standalone firms are also more likely to feature insurance benefits for owners from supporting the firm in distress. The undiversified risk borne by standalone firm owners implies that sudden hardship could materially harm less-wealthy entrepreneurs, who often have limited savings outside the firm and use personal guarantees to secure financing.

On the other hand, business ownership is the typical path taken to reach the top of the income and wealth distributions. Supporting small and mid-market firms indiscriminately could disproportionately benefit the top 1% of the individual income and wealth distributions. Figure 5 helps put the magnitudes in perspective. The first two rounds of the PPP distributed \$416 billion to formal pass-through firms, including S-corporations and partnerships. In 2017, such firms distributed \$839 billion in ordinary business income to their owners, 70% of which typically goes to the top 1% of the income distribution. Assuming an average tax rate on this income of 30%, the tax payments on pass-through income made by these owners amount to \$176 billion. Thus, if between half and all of the benefits of the PPP accrued primarily to owners, it is not unfair to characterize the program as a tax rebate to top-1% owners equivalent to between 118% and 236% of their typical business tax burden.⁶

Figure 5: The PPP transfer to business owners was potentially enormous



Source: The PPP data from the SBA. Tax data from SOI and author calculations based on Cooper et al. (2016).

⁶ This view of the PPP contrasts with public commentary because it distinguishes statutory incidence—which fell at least 60% on payroll—with economic incidence—the bulk of which may have fallen on owners who largely did not alter their business plans due to funding.

The third dimension of targeting that was rejected during the March and April 2020 rounds and included in the December 2020 round of the PPP is shock severity. The principle of targeting on shock severity seems obvious. Insurance benefits are typically paid in proportion to losses, for example, the revenue losses suffered during the pandemic or capital destroyed during a natural disaster. The rationale for this form of targeting is that consumption-smoothing can be achieved by replacing lost income. Analogously, the realized shortfall in a firm's revenue due to the crisis often directly determines a firm's ability to meet its recurring fixed obligations in the absence of government support. In the case of shock severity, and in contrast to firm size and ownership, measuring shock severity might be hard in real time and easier after the fact. This issue motivates a support program with backloaded payments, which can effectively implement "ex-post targeting" without delaying program rollout.⁷

Finally, in principle, policymakers could use information on a firm's industry or geography to approximate the expected revenue losses—*e.g.*, in the case of the pandemic, there were larger revenue shortfalls in the retail trade, restaurant, and hospitality industries than among firms that produce nondurable consumer goods. In practice, given uncertainty about the distribution of revenue shortfalls, the imperative to distribute funds in a timely manner, and the relative difficulty policymakers would have in verifying a firm's industry, we believe that any targeting along industry lines should be limited. Moreover, creating more generous support programs for certain firms based on characteristics that may only weakly correlate with shock severity also creates the opportunity for intense lobbying and distortion of the program by special interests. And if a program is adequately targeting based on firm size, ownership structure, and shock severity, using additional criteria to improve targeting is more likely to deter take-up and disadvantage less sophisticated firms than to promote program efficiency.

4.b. Implementation

First, we view the goal of a business support program as helping private firms cover the cost of their fixed and hard-to-renegotiate obligations, with the idea being that these costs would most threaten inefficient firm liquidations and spillover damage to the economy. We estimated firms' recurring fixed obligations using information available on corporate tax returns. The idea is simple. A firm's revenue must go toward: (1) variable costs of production as captured by the cost of goods sold; (2) compensating employees and managers; (3) depreciation; (4) equity holder profits;

⁷ A key lesson of mortgage modification programs from 2009 like the Home Affordable Modification Program is that too much emphasis on targeting and preventing moral hazard delivers programs that are slow and have limited impact.

or to (5) covering recurring fixed obligations. By subtracting off items 1–4 from revenue, we can reasonably approximate a firm’s recurring fixed obligations. Across all corporate forms and excluding financial firms, we estimated these costs to be between \$40 billion and \$60 billion per week. Among S-corporations, which represent the typical private firms with employees, these costs are especially important in retail and wholesale trade and accommodations, industries with many small firms likely to be hardest hit by the pandemic.

Our approach is agnostic to the firm’s choice of capital structure in terms of whether it chooses to own via mortgage borrowing or rent structures. Our approach treats leased equipment more generously than owned equipment because we exclude depreciation. We treat debt more generously than equity because we exclude profits. These exclusions align closely with the ease with which contracts can be flexibly renegotiated. Equity owners can forgo payments, while renegotiating debt is more difficult. Those who own capital outright save real depreciation expense when they are not actively using capital, implicitly reducing their user cost.

Second, given the scale of overhead costs and the heterogeneity across firms and industries, we argue that support in a noneconomic crisis should include repayment terms that are “soft,” namely, such support should not take the form of traditional debt. For many firms, recurring fixed obligations are so large that it would be uneconomical for them to borrow to cover these costs. Even if firms were willing to borrow, providing support in the form of traditional loans is likely to impair firm balance sheets, creating “debt overhang” problems that could delay recovery. Well-designed repayment terms can help ensure that the only firms applying for assistance will be those that genuinely need help.⁸

For instance, if the program is implemented by the IRS, beneficiary firms would be required to gradually repay some or all of their benefits through a special corporate tax surcharge. Crucially, these surcharges should only begin once the emergency is over and the economic recovery is underway. Such a proposal would be straightforward for recipient firms and the IRS to administer: a firm’s benefit account would be a simple tax account, just like depreciation or net operating loss carryforwards, that is debited each quarter to reflect the firm’s tax surcharge payments.

From a corporate finance perspective, this tax-based repayment scheme is like having the government make preferred stock investments in firms affected by the crisis. Specifically, the owners of a beneficiary firm would retain the financial upside in their business, just as if the government had made a loan to the firm. However,

8 Our focus on breadth of eligibility and generosity aligns with the principles that Hubbard and Strain (2020) articulate. We contrast with their proposal in advocating that payroll be excluded from the targeted expense category, that the government is a better channel than banks for connecting firms to the program, and that forgiveness should be conditioned on some measure of hardship.

like preferred stock, this tax-based repayment scheme is “softer” than an ordinary debt contract, reducing the likelihood that beneficiary firms face insolvency following the emergency and suffer the kinds of debt overhang that limits the ability of near-bankrupt firms to hire, invest, and grow. In particular, like a preferred stock investment, this tax-based scheme ensures that repayment would automatically be extended to the extent that a firm has lower earnings in the wake of the crisis; and repayments would automatically be deferred each year if the firm operates at a loss.

Two programs that could be useful models for a tax-based scheme are (1) the net operating loss carryback refund program and (2) the First-Time Homebuyer Credit. In both cases, the tax forms for applications were short and clearly articulated the benefit formula and the conditions for eligibility.

The net operating loss carryback provision allows firms to apply for refunds for past tax payments when they incur a current loss. Historically, Form 1139 allowed firms to apply for a provisional refund with relatively few up-front requirements in terms of documentation. These refunds were applied for and approved quickly using existing IRS systems during the Great Recession. In implementing a business support scheme, the IRS could use a very similar form and process.⁹

The First-Time Homebuyer Credit was created in 2008 and allowed individuals to apply for a refundable tax credit when making an eligible home purchase via Form 5405. Individuals were required to certify that they were eligible, information that could have been used subsequently to prosecute fraud. In addition, individuals were allowed to apply the refund to past tax returns, which made them eligible to receive the credit shortly after application. Last, for those individuals who subsequently moved, there was a tax form that required them to calculate and repay a portion of the credit they received. In implementing a business support scheme, the IRS could use a similar form to determine any future repayment of grants received.¹⁰

4.c. Should the banks be involved?

We previously argued that small-business support should be deployed by the IRS. Our argument had three rationales. First, the IRS has direct access to the corporate

9 The case of net operating loss carrybacks highlights some practical pitfalls in designing business support programs. First, complexity in program design and application can deter take-up of such programs (Zwick 2021). Second, during the pandemic, the IRS was not prepared to accept electronic applications for net operating loss carrybacks, which delayed transmission of funds to eligible claimants.

10 It is unclear how much additional resourcing the IRS would require to implement a similar program for firms. The GAO conducted a brief review of the First-Time Homebuyer Credit along with compliance and implementation issues, including increased audits, fraud risk, and rollout of a new form, but does not provide a breakout of administration costs (GAO-10-166T, “First-Time Homebuyer Tax Credit: Taxpayers’ Use of the Credit and Implementation and Compliance Challenges”). At the time of the GAO report, the IRS had processed 1.4 million claims totaling more than \$10 billion.

tax returns needed to construct our measure of fixed obligations or alternative measures of benefits. As a result, it would be relatively easy for small- and mid-sized businesses to apply for and access the program. Under this implementation, firms would apply directly to the government for periodic assistance. Following an automated approval process (similar to how the IRS processes net operating loss refunds), the IRS would then send cash assistance to firm bank accounts using an electronic funds transfer. As noted above, some portion of this cash assistance could be treated as a grant and the rest would become a liability that the firm would repay over time. Specifically, beneficiary firms and the IRS would maintain a tax account tracking each firm's accumulated Business Continuity Insurance liabilities.

Second, in administering the program, the presumption should be toward disbursing funds quickly. However, there should be high penalties for fraud and abuse. This is an emergency relief program, so it should be made clear that regulatory, legal, and tax arbitrage will be dealt with more severely than in normal times. Firms who abuse the program should be held to account with high penalties, an immediate claw-back of all cash grants, and recourse to the personal wealth of managers and entrepreneurs (i.e., limits on limited liability). The existing enforcement framework for tax evasion could be naturally extended to this program to lend credibility to the threat of prosecution.

Third, relative to delegating the loan application and underwriting process to banks, deploying funds through the IRS limits the extent to which agency frictions might deter private intermediaries from helping firms access socially valuable support. While preexisting relationships between banks and firms might speed access to funds, banks do not have the same incentives as the government to participate. They provide useful underwriting infrastructure, but at considerable cost that might be better internalized. In the deployment of the PPP, there was evidence suggesting that banks steered preferred clients in one direction and sped their access to loans in advance of new customers. The differential performance of some banks in supporting firm applications to the PPP materially affected the overall distribution of funds during the initial phase of the program, perversely leading regions in better economic shape to receive more funds. Furthermore, perhaps half of all small businesses do not have prior relationships beyond a checking account, and these firms tend to be those with less sophisticated and less wealthy owners who might benefit most from government support.

This principle implies that program simplicity and adequate resourcing are critical. Otherwise, administrative issues will severely limit program take-up—as illustrated by the performance of the MSLP during the pandemic. The design of the MSLP focused on avoiding losses on government loans, which resulted in a burdensome underwriting process for banks administering the loans and ultimately very low

program take-up. In contrast, the simplicity of the PPP allowed it to disburse aid very quickly. Moreover, because the MSLP required risk retention by banks making loans, few banks were willing to participate despite significant underlying loan demand. Put bluntly, the rationales we highlighted above imply support programs should lend to firms at terms that are more lenient than those available from private lenders; risk retention essentially means that lending will take place at terms those lenders find attractive.

4.d. Relation to unemployment insurance

We view small-business support as a complement to, rather than a substitute for, traditional UI and expansions of UI during a crisis. We believe that the existing infrastructure for UI is a more effective vehicle for delivering aid to workers suffering hardship during a crisis. The record from the pandemic suggests that, despite initial rollout difficulties, the UI system was able to support more than 30 million newly separated or furloughed workers and disburse more than \$700 billion in benefits since March 2020. Attempting to provide UI through a business support program is likely to subsidize inframarginal payroll expenses, which end up ultimately benefiting firm owners, as appears to have been the case for the PPP.

Nevertheless, the pandemic did highlight a need to invest in upgrading UI systems across states to ensure timely receipt of benefits for large numbers of workers, changes to benefit formulae, and the possible extension of benefits to the self-employed. To the extent we worry about congestion in labor markets spilling over to UI systems, it would be especially wise to invest in infrastructure to scale up or modify the program.

At the same time, the case of less-wealthy entrepreneurs demonstrates why a business support program is needed in addition to traditional UI. Traditionally, UI is not available to the self-employed, and for good reason, because moral hazard problems are too severe and because rich entrepreneurs can bear income shocks. In addition, any UI benefits provided are unlikely to scale beyond the entrepreneur's own income, thus failing to support a business struggling to cover fixed-cost payments.

Because it may be desirable to reallocate workers across firms during and after the crisis, a program that does not explicitly condition funding on retaining workers is ideal. It is also somewhat unnatural to expect firms to pay workers to idle, when accounting and payroll systems are based on hours worked and some workers are still expected to work. Tipped workers are also harder to support via a system in which the firm delivers benefits.

Of course, it would be possible to include payments covering employee wages in a support program. Programs like this were used in many other countries.¹¹ The total fiscal outlays of such programs are considerably larger than the type of support we propose, but would be similar to the combination of UI and business support. Given fiscal spillovers across programs, cost savings from a narrower program would only come through improved targeting or less generous benefit formulae. In this sense, a business support program that included payroll expenses could provide a backstop to UI.

Such programs have the additional possible benefit of preserving valuable firm-worker links, though at the expense of hindering reallocation. However, given large rates of recall to previous employers in pandemic recovery, fears that firm-worker links would be irreparably severed appear to have been oversold. An additional practical benefit of allowing payments to workers to be included in program support is that such payments are relatively easy for most employers to document, given existing payroll systems, compared to other expenses. This feature could help ease the process of applying for support and verifying eligible expenses for forgiveness.

Ultimately, aid to businesses and households should be paired to ensure that once the crisis ends: (1) household balance sheets are strong enough to drive a recovery in spending; and (2) business balance sheets are strong enough to drive a recovery in employment and investment. A strong recovery critically hinges on both conditions being met. A properly implemented and targeted business support program would undoubtedly help.

5. Policy tools to promote recovery

Having made the case for business support during the crisis and sketched elements of program design, a natural question is whether additional policy tools could promote recovery once the crisis has passed. Such tools might serve two welfare purposes. First, to the extent the crisis generates an aggregate demand shortfall, there is a case for traditional fiscal and monetary policy to close the output gap. Second, and perhaps more relevant in a disaster, there may be a case for promoting reallocation either by socializing startup costs or by taking other steps to facilitate firm entry and exit.

To us, the policy case for small-business support in the wake of the shock is considerably weaker than during the shock. The market failures targeted by business

¹¹ See Hubbard and Strain and BPEA for surveys of many of these programs.

support programs are most severe during the crisis, when firms face recurring obligations, difficulty in renegotiation, and the absence of suitable liquidity support from private markets. For these reasons, we do not believe the government should be as involved in promoting recovery via direct small-business support once the crisis subsides. As bankruptcy court and labor market congestion risks diminish and output demand returns, the insurance and corrective value of support approaches zero. Small-business support therefore becomes a transfer to firm owners.

Ultimately, a large number of businesses will need to have their liabilities permanently restructured in bankruptcy, and many firms do need to be liquidated. For reasons of efficiency, fairness, and fiscal prudence, policymakers should not attempt to indefinitely delay business bankruptcies. The goal should be to ensure that this unavoidable bankruptcy wave plays out in a far more orderly fashion than it otherwise would have. Policymakers could continue the temporary extension that prevents debt forgiveness from being treated as taxable income.

One area to focus on is ensuring that forgiveness grants are easy to apply for, such that firms do not face surprise debts when the grace period for their PPP loans ends. Lenders have strong incentives to encourage borrowers to apply for forgiveness in order to avoid losses from loans that would otherwise default. Borrowers however may face significant challenges in submitting forgiveness applications, the forms for which are considerably longer and more complex than were the forms for initial loans. The risks of a nonstandard forgiveness process suggest that aligning the program with the standard tax-filing season would be an improvement.

A second challenge facing the recovery is how quickly the businesses that did close will be replaced. To promote and support entrepreneurship during the recovery, one possibility is to allow temporary continuation of UI to the self-employed when they start a new firm. The idea here is to subsidize start-up costs to correct for the loss in franchise capital due to inefficient liquidation. This program could be modeled after the French PARE program, which offers unemployment benefits to new entrepreneurs.¹² Of course, such a program would require careful monitoring to protect taxpayers from abuse. Another policy option is providing subsidized loans for new entrants to address financial frictions and unusually large demand. Usually, the SBA's 7(a) Loan Program requires attestations that a firm has sought and failed to receive financing in the private market. Such requirements could be temporarily waived.

To be sure, our position depends on the support offered during the crisis having been timely and adequate. Moreover, some of the insurance value described above

¹² Hombert et al. (2020) find that the French program increased firm creation in the wake of a recession without decreasing the quality of new entrants.

remains relevant. For example, less-wealthy small-business owners who suffer considerable losses may benefit from prolonged access to social insurance programs.

We are less sanguine about the value of traditional fiscal policy levers targeting firms, such as investment or payroll tax credits. First, these policies often require firms to be operating with positive taxable income to benefit from them immediately. Such requirements result in less vulnerable firms receiving a disproportionate share of dollars spent. Second, the fundamental problem facing firms during the crisis is a fall in output demand, which makes supply-side policies less likely to be effective. Social insurance targeting firms in need is the better medicine.

We are also skeptical of proactive policy that uses a heavy hand to encourage reallocation, such as by selecting particular industries to subsidize. In general, it is unclear how much reallocation the economy needs and what form that reallocation should take. Commentators and policymakers have a tendency to underestimate mean reversion in economic systems, thus risk encouraging the wrong behavior while creating programs that may invite abuse.

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