Who Profited from the PPP? An analysis of business owners *

David Coyne† Adam Isen‡ Adam Looney§

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Abstract

This paper examines the Paycheck Protection Program's effect on business owners. Drawing on de-identified IRS tax records, we document how a large fraction of PPP disbursements flowed to owners and how these funds affected their firm's profitability. Although PPP may have limited layoffs during the COVID-19 crisis, about 20 percent of PPP disbursements appear to be potentially ineligible, totaling $100 billion from the 2020 PPP draw, with much of the records that identify these payments available ex-ante. Among legitimate beneficiaries, many exhibited increases in gross receipts from the prior year. PPP substantially boosted pre-tax and particularly after-tax profits, especially for high-income owners. Back-of-the-envelope bounding exercises suggest that most of the benefits of the program accrued to business owners. We conclude that PPP's design, which excluded forgiven funds from taxable income, contributed to a regressive distribution of program benefits. We also highlight important broader policy implications.

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†U.S. Treasury
‡Johns Hopkins University
§David Eccles School of Business, University of Utah, and The Brookings Institution

1 Introduction

The Paycheck Protection Program (PPP) was a large-scale intervention launched during the COVID-19 pandemic to prevent job losses and support businesses. Over its course, the program disbursed hundreds of billions of dollars to businesses across the United States, primarily through forgivable loans designed to cover payroll expenses and other essential operating costs. The economic literature has analyzed the program's efficacy in preserving jobs and estimated the cost per job saved. While this literature generally finds that the PPP preserved between 1 to 5 million jobs at its peak, the cost per job saved was high. However, while workers may have benefited from retained employment, the PPP's structure also provided substantial benefits to business owners, a topic that has received less attention in the economic literature.

Business owners benefited from the PPP because of several factors. First, by covering payroll and other operating expenses, the program reduced firms' out-of-pocket costs, allowing business owners to retain or increase their profits during the pandemic. Second, given the strong economic recovery following the early stages of the pandemic, revenues and economic profits remained strong—this meant pandemic impacts on profits were small relative to the PPP benefits. Finally, because forgiven PPP loans were explicitly excluded from taxable income, owners received an additional windfall by avoiding tax liabilities that would typically apply to such subsidies. As a result, it is plausible that a significant fraction of the program's benefits accrued to business owners. Moreover, because business ownership in the United States is disproportionately concentrated among higher-income individuals, these benefits likely contributed to a regressive distribution of government aid.

To understand the extent to which business owners benefitted from PPP, this paper links 2020 PPP disbursements to business owners using de-identified IRS tax records and describes the financial profiles and dynamics of the individuals and firms who applied for and received PPP funds.

The analysis includes four key steps. First, we use the data to identify how much of

PPP flowed to bonafide businesses that were eligible for PPP and whether the amounts they received followed the law, versus the amounts that were ineligible, namely, potentially attributable to fraud or otherwise improper overpayments. By matching PPP applications to the universe of business income and employment tax records, we find that about $100 billion of the $529 billion in PPP disbursements we observe (or almost 20 percent) were ineligible. Most of these records were in possession of the federal government before funds were disbursed. This includes about $31 billion (5.8 percent) that flowed to entities that either did not exist (in either 2019 or 2020 tax records), or which had no payroll expenses that entitled them to any PPP. An additional $18 billion (3.5 percent) flowed to businesses that were not in operation as of February 2020 (which were ineligible) or who were statutorily ineligible because their employment (and other financials) exceeded statutory thresholds. Those businesses should have been screened out by financial institutions. Another $46 billion (8.6 percent of the total) in ineligible PPP payments arise because the amounts disbursed exceeded the amounts of qualifying expenses allowed by law—these businesses were eligible for PPP, but received too much.

We observe the lender for each loan from PPP program data, and thus can measure the rates of these payments across institutions. While financial institutions were required to assess PPP eligibility prior to issuance, they were permitted to generally rely on borrower's certifications and documentation, likely creating substantial variation in due diligence. At most banks, rates of payments associated with PPP loans to fictitious or ineligible businesses were low. However, a large share of these likely fraudulent payments are concentrated at specific financial institutions, primarily doing business over the internet ("fintech"). However, payments arising because of ineligible PPP amounts (which may have been especially difficult for banks to corroborate) were more widely dispersed.

In the second step, we describe how much of the PPP funds that accrued to "real", qualifying firms, affected the profitability of the recipient firms. While the standard of an analysis of "who benefited" from a program like PPP is to measure the economic incidence—how did

profits and wages change as a result of the program, the design and implementation of PPP makes analysis of incidence difficult because it is not clear what counterfactual wages/profits would be in the absence of the program. On the one hand, because PPP receipt required firms to retain (some) employees they might otherwise have fired (increasing their costs), the pre-PPP net profits of firms were likely lower than they would have been. On the other hand, by 'saving jobs' and boosting aggregate income, PPP likely accelerated the economic recovery and boosted profits. Hence, we simply describe the changes in receipts, costs, and profitability of firms 2019 and 2020 (and, for a baseline comparison, between 2018 and 2019). First, we assume that pre-tax, pre-PPP profits are a lower bound on profits—in the absence of PPP, optimizing firms would have fired workers or closed firms rather than incurring those costs.

Our analysis suggests that PPP substantially boosted the profits of firms (and firm owners). In 2019 (the year prior to PPP receipt), corporations and partnerships that received PPP in 2020 earned about $336 billion in pre-tax profits, or about $206 billion after tax (assuming an effective tax rate of 26 percent on positive net profits). In 2020, these same firms earned $316 billion ($20 billion less). Assuming the same tax rate on positive net income, after tax-profits were likely about $177 billion ($29 billion lower; the reason for the apparent rise in taxes is that there was both an increase in profits among profitable firms and an increase in losses among loss-making firms). Note that these net profits are after (tax deductible) payments to employees.

These firms received $369 billion in PPP funds. As a result, the pre-tax, PPP-inclusive income of these businesses (and their owners) increased from $336 billion in 2019 to $685 billion in 2020 (a 104 percent increase). On an after-tax basis, however, the increase in profits was even steeper—a 165 percent increase (from $206 billion to $546 billion). A key reason why after-tax profits increased so steeply is because PPP funds were excluded from tax (even while expenses paid with PPP remained tax deductible and wages remained taxable to employees). This treatment provided a significant windfall to firms and their owners,

which we estimate at over $100 billion for 2020 PPP.

Having linked PPP disbursements to firms and firm owners, we then examine the distribution of PPP benefits across the income distribution of firm owners, shedding light on the extent to which the program disproportionately benefited high-income individuals. Ranking PPP recipient owners by either 2019 or 2020 total income (excluding PPP), about one third of PPP funds accrued to taxpayers in the top 1 percent, and about two thirds to taxpayers in the top 10 percent. However, if taxpayers are re-ranked including PPP income, about 62 percent accrued to taxpayers in top 1 percent. And 87 percent to the top 10 percent. Because PPP amounts were large and increased with taxpayer income, and because PPP was not subject to tax, it had a large effect on the after-tax, after-PPP disposable income of these households. For example, PPP boosted the top 1 percent after-tax income by about 28 percent among individuals who received PPP.

Finally, to make progress on understanding the incidence of the program on owners versus workers without being able to conclusively point identify the breakdown, we undertake a partial identification approach. We exploit key features of the program, including rules over how much must be spent on payroll and the income tax exclusion. Under a simple model of firm behavior combined with observable conditions of firms, we conclude that the large majority of the benefits likely accrued to owners.

2 Background

In 2020, as part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act, the federal government introduced the initial Paycheck Protection Program (PPP), which ultimately disbursed about $525 billion in forgivable loans to small businesses, certain nonprofits (primarily 501(c)(3) organizations), tribal businesses, and veterans' organizations that were operational on or before February 15, 2020. Generally, any entity with 500 or fewer employees—or that otherwise met the Small Business Administration's size standards—qualified,

including sole proprietors and self-employed individuals who certified that economic uncertainty made the loan necessary. The maximum loan amount equaled 2.5 times a borrower's average monthly payroll costs (capped at $10 million), with payroll expenses including salaries, wages, and commissions, subject to an annualized $100,000 limit per employee, along with payments for employer benefits. Under initial rules, at least 75 percent of the loan proceeds had to be used on payroll to qualify for full forgiveness, and the remaining 25 percent could cover mortgage interest, rent, and utilities during the "covered period," originally set at eight weeks. Given the amount of the PPP, the length of the covered period, and the 75 percent requirement, this amounted to retaining approximately 100 percent of firm payroll. Borrowers also initially needed to maintain compensation levels at 75 percent of Q1 2020 levels and to return to prior employment levels by the beginning of the Q3 2020 avoid proportional reductions in forgiveness. Finally, certain categories—such as businesses engaged in illegal activities or some lobbying organizations—were ineligible. However, Congress loosened the rules at the beginning of June 2020, effectively requiring that firms only retain an average of 27 percent of payroll over the new extended covered period and effectively providing a safe harbor for compensation or employment decreases. Few firms would have, absent PPP, been below the 27 percent threshold; thus, the effect of PPP on worker employment and earnings is likely greatest in April and May 2020.

The economic literature finds that the PPP played a role in stabilizing employment during the pandemic, though at a high cost per job saved. Autor et al. (2022) estimate that PPP eligibility increased employment by 2–5 percent at its peak, retaining 3.6 million jobs mid-2020, with effects fading to 1.4 million jobs by year-end. The cost per job-year saved ranged between $170,000 and $258,000, significantly exceeding the median worker's annual earnings, highlighting inefficiencies in targeting funds effectively. Similarly, Granja et al. (2023) find that PPP's employment effects were modest relative to its $800 billion cost, with implied costs per job saved surpassing $175,000 due to precautionary savings and non-payroll uses of funds.

While PPP did mitigate unemployment and supported firm survival, its benefits were unevenly distributed. Doniger and Kay (2021) show that delays in loan disbursements led to persistent employment losses, disproportionately affecting small and low-wage firms. Despite favoritism in loan allocation by banks (Bartik et al. (2020)), the speed of PPP disbursement was critical in preventing further economic damage, as delays would have exacerbated job losses. Together, these studies underscore the trade-off between program speed and targeting precision in emergency fiscal interventions.

3 Methods

To construct our data, we first merge loan-level microdata from the Small Business Administration for all PPP loans disbursed in 2020 including the Employer Identification Number (EIN) or Social Security Number (SSN) of the borrower to de-identified IRS tax records of the business entities that received those loans (including sole proprietors filing Schedule C with their individual returns; C- and S- Corporations filing forms 1120 and 1120s; and partnerships filing form 1065). Even if a PPP loan is not linked directly to a business income tax return, we also search for a Form 941 (Employer's Quarterly Federal Tax Return, or otherwise Form 943 or 944), which is filed by employers to report employee tax withholding, along with Form W-2. The 941 is filed by almost all U.S. employers, including nonprofit employers and employers in U.S. Territories, who do not file income tax returns. Note that Form 941 was the primary recommended documentation to supply to substantiate payroll, though the guidance was released several weeks after the program began.

Second, we link the information on recipient businesses to the owners of those businesses. For sole proprietorships, this link is direct, because these owners file their business returns with their individual returns. For pass-through business owners (S-corporation and partnership owners), we attribute ownership based on ownership shares (inputted for partnerships from distribution shares) on Schedule K-1 issued by businesses to their owners, and for C-

corporations we use the information of Schedule G, which lists ownership shares of major owners, along with distribution shares among those issuing Form 1099-DIV. Because the match rate of the merge between SBA data and tax records is central to the discussion of ineligible payments, we describe the sample characteristics below. Likewise, our analysis of the distribution of PPP payments across owners provides additional details on how we attribute PPP disbursements to owners.

4 Analysis

4.1 Matching PPP Disbursements to Qualifying Firms

We first estimate the share of PPP funds that did not accrue to qualifying firms based on the initial match of administrative SBA records to IRS business tax records. To estimate the magnitude of potentially ineligible payments, we decompose the total amount of recorded PPP loans in 2020 ($529 billion) into those amounts that did not appear to flow to actual businesses and, among the remainder, the amounts that flowed to businesses which were not eligible based on program parameters.

The first step in this analysis proceeds directly from the match between the universe of SBA records and the universe of business records. Using the EIN or SSN associated with each SBA record, we match each entity to their respective income tax return and employment tax return in 2019 and 2020 along with any EIN application (Form SS-4). In case a taxpayer identification number was misclassified, we also attempted to merge loan EINs to SSNs in the tax data and vice-versa.

As reflected in the second row of Table 1, about $16.4 billion of the $529 billion total PPP disbursed in 2020 (4 percent) flowed to individuals or entity that have no corresponding IRS record—firms that simply did not exist.

The next row in Table 1 shows that an additional $14,4 billion accrued to entities that do appear in IRS records, but have no payroll or qualifying expenses that would qualify them

for any PPP. This would be employee compensation from 2019 or early 2020 (from income tax or employment tax returns), 2019 net earnings subject to self-employment tax among general partners reported on Form 1065 K-1 (checked against Form 1040 Schedule SE), and 2019 positive self-employment income reported on Form 1040 Schedule C or F. In short, about 6 percent of PPP funds in 2020 seem to have accrued to fictitious businesses or those with no payroll expenses.

Of the remainder of PPP funds, a significant share appear to have been paid to actual businesses with active operations as of February 15, 2020, but which were ineligible to receive PPP based on the parameters described in PPP legislation.

In particular, about $9 billion was paid to businesses whose level of employment from employment tax returns (or for a small share of industries, revenue from income tax returns) exceeded the thresholds in the legislation and whose assets and net income exceeded the alternative eligibility computation. Another $10 billion was disbursed to businesses that were not in operation in February 2020 (as measured from Form SS-4 and conservatively from employment and income tax returns), and thus should have been ineligible. Thus, about 4 percent of PPP funds were paid to businesses that should not have received PPP funds.

In theory, such disbursements should have been prevented by lender due diligence. Under the CARES Act and related SBA guidance, lenders were subject to streamlined but mandatory due diligence obligations when approving PPP loans. They were required to verify, at a minimum, that the applicant business was legitimate, had been in operation on or before February 15, 2020, met SBA size criteria (e.g., not exceeding 500 employees unless otherwise permitted), and had verifiable payroll expenses aligning with the requested loan amount. This involved ensuring that payroll documentation provided by the borrower matched claimed figures and that no duplicate PPP loans were sought. Lenders also had to maintain compliance with the Bank Secrecy Act and standard "know your customer" protocols to confirm the borrower's identity and guard against fraud.

Because the SBA administrative data includes information on each lender, we are able to tabulate rates of likely ineligible payments arising from the circumstances above by lender. In appendix Table X, we provide this analysis for the 25 largest lenders (by number of PPP loans) and for the 25 lenders with the highest rates of the above types of likely ineligible payments (among lenders issuing more than 5,000 PPP loans. We find that these payments are were originated from a concentrated set of "fintech" financial institutions.

Another form of ineligible payments arises from applying for a PPP loan in excess of the amount specified by law or not using the PPP loan for qualifying expenses. We find that about $45 billion in PPP was paid out in amounts above the levels intended by law at those firms based on the definition of payroll expense specified by Treasury/SBA regulations, which we recreate for every firm in our sample./For firms where we observe employment tax returns but no income tax returns, we impute employee benefits. For firms where we observe income tax returns but not employment tax returns, we impute cash compensation in excess of $100,000, income excluded from Medicare wages, mainly employee health insurance premiums, and the potential benefit of using the most recent 12 months instead of 2019 as the payroll lookback period. When the figures do not agree between employment tax returns and income tax returns, we use the higher of the two The maximum PPP loan amount was primarily calculated by taking 2.5 times a borrower's average monthly payroll costs (typically based on 2019 figures or the trailing 12 months), subject to a cap of $10 million. "Payroll costs" included wages, salaries, tips, certain employee benefits, and state and local taxes assessed on compensation, but excluded annualized compensation over $100,000 for any individual employee. The $45 billion is the amount by which PPP disbursements exceeded those limits. Hence, the largest source of apparent non-compliance appears to be excessive PPP disbursements at otherwise eligible firms. Lenders were permitted to let potential recipients calculate this amount themselves and substantiate with documentation that they could self-certify to be accurate.

Finally, another important PPP requirement was that the PPP funds actually be used to

support spending on qualifying expenses, like payroll and certain other costs. In short, PPP recipients had to use PPP funds or retain their employees and support business operations. However, some firms received PPP and nevertheless fired their workers and/or stopped making qualifying payments. The last row in Table 1 suggests about $5 billion of PPP was disbursed to qualifying firms but is not eligible for forgiveness due to too little spending on employee payroll (as measured from Q2 and Q3 quarterly payroll).

In sum, Of the $529 billion in first round PPP, about $100 billion were ineligible payments, or about 19 percent of the total.

One final exercise we conduct is how the rate of ineligible payments varies with the timing of application. For payments to ineligible businesses, We find robust evidence that they started out low as the program commenced (around 5 percent) but crept up higher and higher such that close to the close of the application season upwards of 30 percent of payments were to ineligibles. This result holds even when including lender fixed effects. ineligible payments It suggests that those looking to potentially defraud the government learned about the program integrity vulnerabilities while legitimate demand for PPP dried up. Thus, while it was reported that financial institutions gave preference to preexisting clients in submitting application in the early period of PPP, one benefit is that they were more likely to be on behalf of legitimate businesses. It also suggests that shoring up the program integrity vulnerabilities was less time sensitive. This result, along with the fintech finding, is consistent with the indirect, statistical measures of fraud from Griffin, Kruger and Mahakan (2023). While we estimate a larger share of ineligible payments (which is possible because we can directly measure the many dimensions of ineligible payments), that paper finds that 2021 payments had even higher rates of suspect payments, suggesting that our estimates understate the magnitude of the problem across all draws of PPP, with over $150 billion ineligible payments made across the span of the program.

4.2 How Did PPP Affect Firm Profits?

To address this question, we start with a descriptive analysis of the revenues, expenses, and profits of firms over the period from 2019 to 2020. This analysis steps through the calculation of pre-tax, pre-PPP profits to post-tax, post-PPP profits in each of the years.

Table 2 describes the key elements of the aggregated revenue, cost, and profits of the business sector (corporations and partnerships) and sole proprietorships. The left panel of the table examines the 2.8 million businesses who received PPP in 2020 and their corresponding revenues, costs, income, and PPP amounts in both the 2019 and 2020 tax years.

In 2019, on average, these firms earned receipts of about $2.9 million, paid costs of about $2.7 million, of which about $577,000 was wages, and earned average net income of $120,000. On this income, in 2019, firms paid about $46,000 in federal income taxes, resulting in average after-tax income of about $73,000.

In 2020, total receipts declined modestly, by about 2.5 percent, but so did non-labor costs; hence net income declined to $113,000. Tax payments were roughly unchanged, hence after-tax, but pre-PPP income fell to $63,000 (a 14 percent decline).

However, in 2020, these firms received an average PPP amount of $132,000. PPP disbursements were excluded from income from tax purposes, even though payments to workers (or for other costs) remained tax deductible (and those payments remained taxable to workers). As a result, PPP recipients received an usual double tax benefit that is otherwise generally prohibited by IRC 265, which states that no deduction is allowed for expenses that are allocable to income that is wholly exempt from taxes.

This has two important consequences. First, because PPP funds were excluded from income, it is not recorded on income returns, which, from a measurement perspective, makes business receipts and net income appear artificially low in the affected tax years. Second, the after-tax, after-PPP income of businesses was much higher in 2020, and increased much more between 2019 and 2020, from $73,000, on average, to $195,000—-more than 2.5 times greater.

To illustrate how receipts and profits changed across the distribution of all PPP recipient firms, Figures 1 through 4 present log(business receipts), business receipts, the distribution of the change in receipts, and net income in 2019 and 2020. The effect of the pandemic is evident in the leftward shift in these distributions, however, the aggregate shift is modest. Indeed, Figure 3 suggests the typical change in business receipts between 2019 and 2020 was small and most firms experienced changes relatively close to zero (whether unweighted or weighted by 2019 receipts).

Appendix Table 2A dis-aggregating the data based on the characteristics of recipient firms in 2020 and how they changed between 2019. The table again presents the revenue, expenses, and profits of PPP recipient firms based on how their business activity changed between 2019 and 2020.

According to the table, about 40 percent of the 2.8 million firms that received PPP experienced an increase revenues between 2019 and 2020. These firms received about 41 percent of PPP dollars. Likewise, about 43 percent of PPP firms increased their employment; they received about 47 percent of PPP. Forty-one percent had profits rise, 60 percent earned positive profits, and almost 70 percent earned positive profits after PPP. In each case, these firms received almost exactly a proportionate share of PPP dollars.

For perspective, if we had applied the PPP eligibility criteria to firms in 2019 and examined how their revenues, employment, and profitability changed between 2018 and 2019, the impact of the pandemic is evident–a much larger share of PPP recipient firms experienced declines in revenues, employment, and profits in 2020 compared to in 2019.

This suggests PPP was not particularly targeted at firms experiencing declines in revenues, employment, or profits.

Similarly, we also assess business activity and PPP receipt by industry in Appendix Table 3. This analysis suggests that the impact of the pandemic on revenues, costs, and profits varied significantly across firms. However, PPP takeup rates and average PPP amounts were similar across industries.

Next, we compare the changes in business activity among firms that received PPP and firms that appear eligible for PPP but which did not takeup PPP. Presumably, firms who were eligible for PPP but did not receive it are likely to be different than those who did receive it. For example, it may be that those firms chose not to apply because they felt they did not need it. Indeed, Appendix Table A5 shows that compared to firms that received PPP, otherwise eligible firms appeared to have done better in the sense that the decline in total receipts was smaller (-1 percent versus -3 percent), as was the decline in expenses (-1 percent vs -2 percent), and profits (-1 percent versus -6 percent). However, including PPP, recipient firms' profits increased 104 percent.

Finally, we examine changes in business activity and PPP receipt by firm size. Appendix Table 5 presents data from 2019 and 2020 on PPP-eligible firms by size of employment, as well as the number of PPP recipients among those firms, the average PPP received, and the changes in revenues and profits between years. In general, larger firms received more PPP (largely because they had larger payrolls), but among these larger firms, the increase in after-PPP income was also greater, suggesting that the value of PPP more than compensated for reductions in receipts or net income.

In 2021, the second draw of PPP was intended to be more targeted to firms demonstrating a decline in receipts. Appendix Table 6 suggests that this round of PPP was more effective in targeting–on average corporations and partnerships that received the second draw experienced an average decline in receipts of 20 percent between 2019 and 2020. (By 2021, their receipts had recovered about to their 2019 levels). Notably, these firms experienced significant reductions in payroll employment in 2020, which accelerated in 2021 despite PPP receipt. Note also that gross of PPP, the profits of these firms were dramatically higher in 2020 than in 2019 (80 percent larger), and more than three times larger in 2021 when accounting for PPP.

4.3 The Distribution of PPP and after-tax PPP Among Business Owners

Finally, by matching the returns of individual business owners to the firms that received PPP, we can estimate the distribution of PPP income by income class. To produce this analysis, we match the PPP recipient businesses to the individual owners of these businesses. For Schedule C filers, whose business returns are attached to their individual tax returns, this matching is direct, and the PPP dollars are associated directly to the filer. Schedule C filers represent about 9 percent of PPP dollars in our sample.

For other businesses, we apportion PPP to owners based on the share of the business they own. About 15 percent of PPP flowed to C-corporations. For C-corporations, we use information from Schedule G which provides information on the ownership shares of major shareholders.

For owners of so-called passthrough businesses (partnerships and S-corporations), we use the Schedule K-1 information returns to link the recipient businesses to their owners, and thus allocate the PPP income among owners in proportion to their share of ownership. About 60 percent of PPP dollars accrued to such pass-through business.

We were unable to match about 16 percent of dollars. Among this 16 percent, 8 percent appeared to flow to entities that filed a Form 941 Employer's Quarterly Federal Tax Return, but whose business tax return could not be identified. About 2.5 percent appear to be nonprofit businesses, who have no shareholders. About 1.4 percent are partnerships and corporations whose owners could not be identified (perhaps because they were owned indirectly by other partnerships or by foreign owners). 1 percent are corporate subsidiaries that don't file on their own but could not be linked to their parent firm. The remaining 3.5 percent could not be identified.

Table 3 presents a standard distribution table that provides the information on pre-tax, pre-PPP income, after-tax pre-PPP income, and after-tax, after-PPP income, as well as PPP distributions for owners of PPP recipient firms. The left panel assigns firm owners to

income groups by their 2019 pre-tax income, the second panel by their 2020 pre-tax income, and the third panel by their 2020 income including their share of PPP distributions. The fourth panel (PPP) presents the amount of PPP income received by each group using the 2019, 2020, and 2020+PPP income levels of the recipients.

The table shows that PPP-recipient business owners are disproportionately concentrated at higher income levels. For example, about 13 percent PPP recipient owners are in the top 1 percent of the income distribution based on 2019 or 2020 income. When including PPP in income, 16 percent of PPP owners were in the top 1 percent. Likewise, about half of all PPP recipient owners were in the top 10 percent in 2019 and 2020. (Based on 2020 total IRS-reported income, individuals needed to earn about $151,000 to be in the top 10 percent, $556,000 to be in the top 1 percent, and $2.6 million to be in the top 0.1 percent.)

High-income business owners also earned a disproportionate share of all income earned by these businesses. In 2019 and 2020, the top 1 percent earned about 60 percent of all income of this group, and the top 10 percent about 90 percent.

Looking specifically at PPP amounts, based only on 2019 and 2020 pre-tax income, about one third of PPP funds accrued to owners in the top 1 percent and two thirds to owners in the top 10 percent. However, when PPP revenues are included in income, the concentration of PPP among high-income taxpayers is even greater, with about 60 percent accruing to taxpayers in the top 1 percent and 87 percent to the top 10 percent.

PPP clearly had a large effect on the disposable income and economic wellbeing of these business owners. In 2019 and 2020, in the aggregate, these owners reported total after-tax income (excluding PPP) of $1.3 trillion and $1.4 trillion, respectively. (And that is income after paying workers and incurring other business expenses.) But these owners received about $348 billion in untaxed PPP in 2020–boosting their take-home disposable income by about 25 percent. PPP funds increased after-tax income of the top 1 percent by about 28 percent. For comparison, the 2018 Tax Cuts and Jobs Act, widely derided by some for being "regressive" increased the after-tax income of top 1 percent households by about 2.9 percent.

Finally, we also assess how much the unusual tax treatment of PPP benefited individuals at different income levels. Because PPP was excluded from income, it avoided taxation at the individual income tax rate that would otherwise have applied to their business income. Hence the tax benefit is likely to be even more concentrated in high-income groups than PPP itself because of the progressive marginal tax structure, which applies higher rates to higher-earning individuals.

In Table 3 we assume that the relevant tax rate is 90 percent of the average tax rate actually paid on pre-tax income in 2020. (90 percent reflects a balance between the fact that the average tax rate is lower than the marginal tax rate in our progressive tax system and the fact that business income is typically taxed at lower rates than other income sources.)

According to this analysis, the beneficial tax treatment of PPP saved recipients almost $100 billion in taxes in 2020–almost a third of the $348 billion in PPP they received. Of the total tax savings, about 77 percent accrued to taxpayers in the top 1 percent and 96 percent to taxpayers in the top 10 percent.

4.4 Incidence

A key question in the evaluation of the PPP program is the extent to which the benefits of PPP accrued to firm owners or employees. This question of economic incidence asks how much of the PPP employment subsidy increased employee wages and how much increased firm profits. While the program designated that most of the funds be spent on employee payroll, it is unclear how much payroll firms would have retained absent PPP and what their profits would have been. While incidence is related to the number of "jobs saved"–a considerable focus of the econometric analysis of the PPP–measuring incidence is quite different, and even programs that are effective in saving jobs may still mostly benefit employers. A job subsidy can boost employment and yet end up mostly benefiting employers if, for example, workers' total wages are little changed and the subsidy primarily lowers the employer's total labor costs, or when the value of that labor (its marginal product) exceeds

the net-of-subsidy wage paid by the employer (which was zero under the PPP). In effect, the employer "captures" most of the subsidy, rather than passing it through to workers as higher wages.

While it was unclear how disruptive the pandemic would be at the time the PPP was enacted, looking back, the evidence above regarding the changes in firm revenues and profits suggests the impact was temporary and modest, and a large share of firms saw their business activity increase. For businesses that experienced little interruptions due to Covid, the marginal products of workers would have been unaffected and firms would have retained the workers in the absence of the PPP, making it a windfall to owners. Indeed, we saw in Section 4.2 evidence that there are substantial fractions of both firms that were negatively affected and those that were largely unaffected.

To make progress on this issue, we attempt to bound the incidence to owners from below through imposing some arguably reasonable assumptions. For the purpose of these exercises, we ignore general equilibrium effects and immediate liquidity effects and focus on the incentives introduced by the program to retain payroll. We also ignore that at many of these closely-held firms the owners are actively involved in the business such that their "labor" compensation (as a sole proprietor, general partner, or corporate employee-shareholder) counts as employee payroll and that beginning in early June the rules were substantially relaxed such that firms only had an incentive to retain 27 percent of their prior payroll level.

First, we note during the covered period (before rules were substantially relaxed) that only 75 percent of the funds needed to be allocated toward payroll. Hence, the remaining 25 percent likely accrued to owners.

Second, the exclusion of PPP proceeds from income tax also should have accrued to owners. Retaining payroll was fully subsidized (up to $100,000 in annualized wages and uncapped employee benefits) even if PPP forgiveness was not tax-free (or alternatively even if deductibility of PPP-funded expenses was not permitted). This is because if PPP forgiveness

was taxed but the funds were spent on workers, that expense could be deducted, which would offset the increase in income. Moreover, in practical terms, the exclusion from federal income tax was not legislated until the last week of December 2020, which mechanically could not have influenced decisions made earlier. Prior to then, the Treasury Department had stated that PPP funded expenses would not be tax deductible. As discussed earlier, we estimate that the exclusion saved approximately 25 percent, leading to 56.25 percent of potential benefits unallocated. From this point forward, we take a variety of approaches that all yield a similar conclusion.

One approach is to exclusively focus on firm's labor expenses during the quarter that overlaps with the covered period. Using reported payroll expenses to the IRS from Q2 2020 and how it compares to their average monthly expenses (either calculated from IRS records or inferred from their PPP amount), there are two conditions for which at least some incidence must be on owners. In one extreme, if the incidence was fully on workers, firms would have spent zero on labor expenses outside of the covered period but would have been induced to fully retain their workers during the covered period. In the scenario, the ratio of Q2 expenses (divided by 3) to their average monthly expense would be 0.61538. Thus, workers from any firm with a ratio below that figure could not have accrued all of the (remaining) benefits since mechanically not enough was spent on payroll. We can quantify the amount that necessarily could not have accrued to workers by multiplying ppp amounts at those firms by the computed ratio described above divided by 0.61538. In the other extreme, since labor expenses only up to prior payroll was subsidized, it would be unlikely for workers to bear any incidence at firms that had expanded their payroll (i.e. had a ratio greater than 1). In such a state of the world, it is likely that such firms would have retained all of payroll regardless of whether they received PPP. Thus we can quantify the total PPP awarded to those firms for which there is unlikely any incidence on workers. By combining these two totals with the prior figures, we estimate that at least 71 percent of PPP accrued to owners.

As an alternative approach, we can consider the share of PPP that went to firms that

experienced increases in their gross receipts between 2019 and 2020. Absent some shift in the technology of firm production, such firms would have been unlikely without PPP to have laid off any workers (whose marginal product likely did not go down to warrant that decision). Combining PPP at these firms with the tax and other expense rules, we estimate that at least 68 percent accrued to owners While allowing for the possibility that all payroll at other firms was retained but would have been zero absent PPP,

By combing both of the above approaches, namely, assuming PPP to firms with gross receipt increases was fully borne by owners and applying the bounds from the labor expense ratios for firms that experienced no or negative changes in gross receipts, we recover a lower bound of 0.78.

As a third approach, we consider the share of PPP dollars that increased after-tax profits in 2020 relative to 2019. By assuming profits would have weakly gone down absent PPP, we estimate a lower bound. This assumption seems reasonable given the economic disruption brought about by Covid (and before the subsequent period's increase in economic activity and inflation). From this exercise, we estimate a lower bound of 0.67.

As another back of the envelope exercise but one that recovers a point estimate on incidence, we take the revenue change and assume in the counterfactual labor expenses would have changed proportionally. We then compare the estimated change in labor expenses to the amount of PPP received, which yields an estimate of 0.91. Of course, this is a very suggestive exercise.

A final approach is that the entire decline in firm's pre-tax, pre-PPP profit occurred because firms retained workers they would have otherwise fired. Attributing this $7,000 decline in profits to workers, still leaves the remaining $125,000 in PPP (95 percent) accruing to business owners.

Econometric studies of the effects of PPP on employment suggest that the PPP reduced job loss by between 2 and 5 percent at the peak of the pandemic (but by less over the entirety of 2020) (Autor et al. (2022)). At the average firm, 5 percent of payroll is about $29,000

(about 22 percent of the average PPP amount), which still implies the vast majority of PPP benefits flowed to business owners, rather than workers. And this likely understates the incidence on business owners because retained workers presumably had a positive marginal product (i.e. whatever work they did increased revenues and profits, even if to a lesser extent than pre-pandemic) but imposed no marginal cost on the firm, because their compensation was entirely paid by PPP. That work paid for by PPP increased owners' profit and thus the incidence of PPP on owners.

In sum, with a variety of approaches we conclude that the benefits of PPP mostly accrued to firm owners. Even if no specific assumption is unassailable, the similarity in results across approaches suggest it is reasonable to assume that owners accrued most of the benefits of PPP even during the earlier period of PPP when spending rules were most stringent.

5 Conclusion

The Paycheck Protection Program (PPP) played an important role in stabilizing employment and supporting businesses at the onset of the pandemic, but its design and implementation revealed key areas for improvement. The analysis in this paper indicates a high rate of payments to ineligible firms or payments in excess amounts. Many of these payments could have been prevented with more robust screening mechanisms by leveraging readily available information available at the Treasury and IRS. Such measures would have minimally impacted the speed of legitimate disbursements while enhancing program integrity.

To improve efficiency and equity, alternative program designs, such as offering low-cost loans with partial (instead of complete) forgiveness contingent upon demonstrated financial hardship, could have achieved comparable outcomes at a reduced fiscal burden.

Additionally, including forgiven funds in taxable income could have mitigated the regressive distribution of benefits, directing more resources toward those in greater need and avoiding costly and inequitable windfalls while maintaining program efficacy.

References

Autor, David, David Cho, Leland D. Crane, Mita Goldar, Byron Lutz, Joshua Montes, William B. Peterman, David Ratner, Daniel Villar, and Ahu Yildirmaz. 2022. "An evaluation of the Paycheck Protection Program using administrative payroll microdata." *Journal of Public Economics*, 211: 104664.

Bartik, Alexander W., Marianne Bertrand, Zoë B. Cullen, Edward L. Glaeser, Michael Luca, and Christopher T. Stanton. 2020. "The Targeting and Impact of Paycheck Protection Program Loans to Small Businesses." *National Bureau of Economic Research Working Paper Series*, , (27623).

Doniger, Cynthia L., and Benjamin S. Kay. 2021. "Ten Days Late and Billions of Dollars Short: The Employment Effects of Delays in Paycheck Protection Program Financing." *Finance and Economics Discussion Series*, , (2021-006).

Granja, João, Christos Makridis, Constantine Yannelis, and Eric Zwick. 2023. "Did the Paycheck Protection Program Hit the Target?" *Journal of Financial Economics*, 148(3): 547–579.

Griffin, John M., Samuel Kruger, and Prateek Mahakan. 2023. "Did FinTech Lenders Facilitate PPP Fraud?" *The Journal of Finance*, 78(3): 1777–1827.

Figure 1: Log Business Receipts of PPP Recipient Businesses

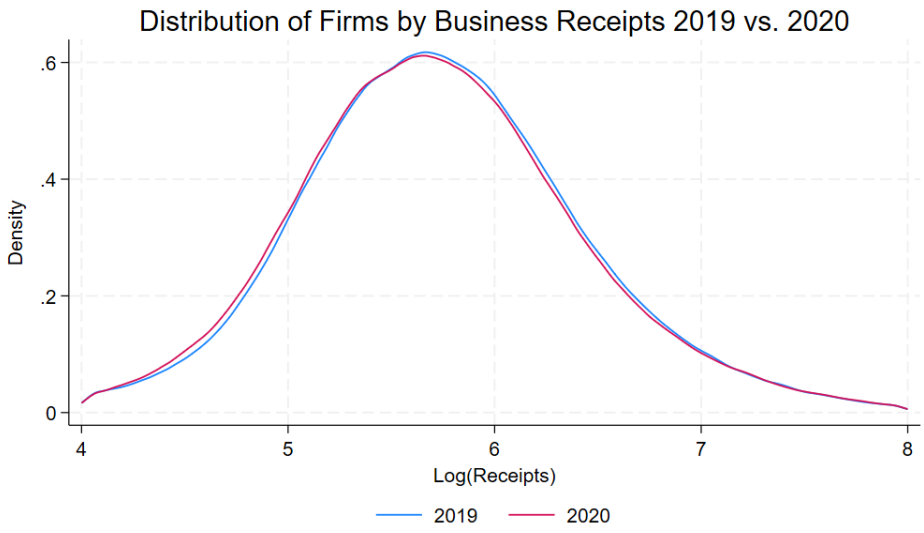


Figure 2: Business Receipts ($) of PPP Recipient Businesses

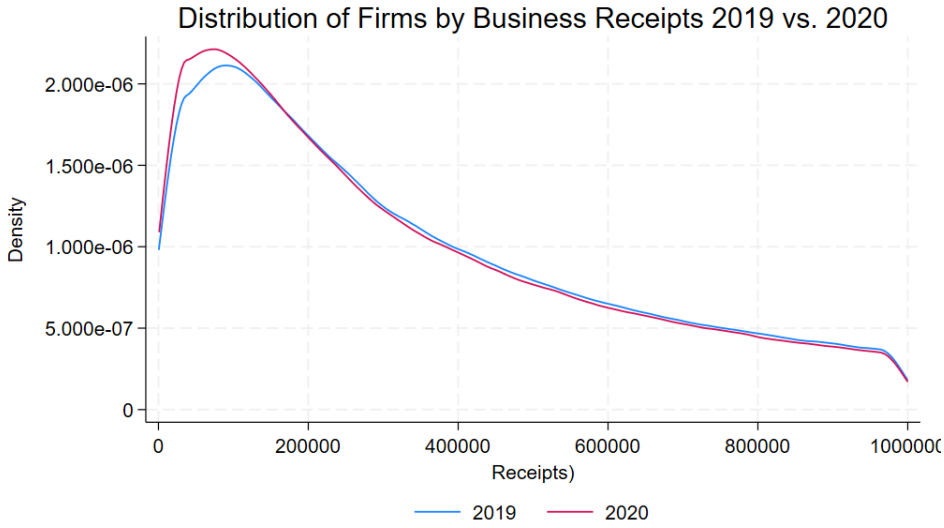


Figure 3: Change in Receipts of Recipient Businesses (Excluding PPP)

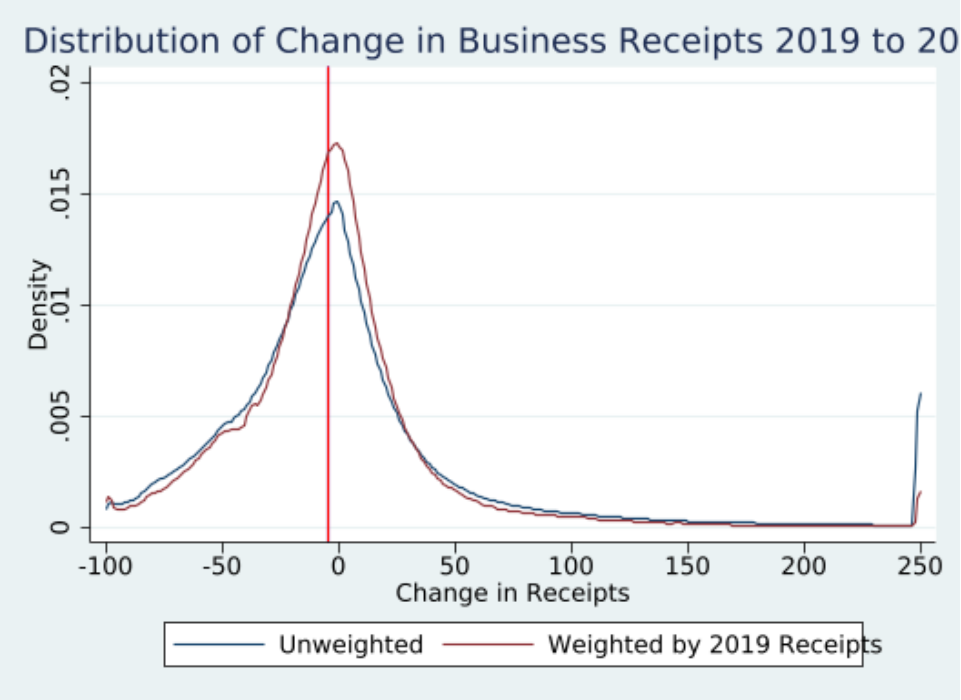


Figure 4: Net Income ($) of PPP Recipient Businesses (Excluding PPP)

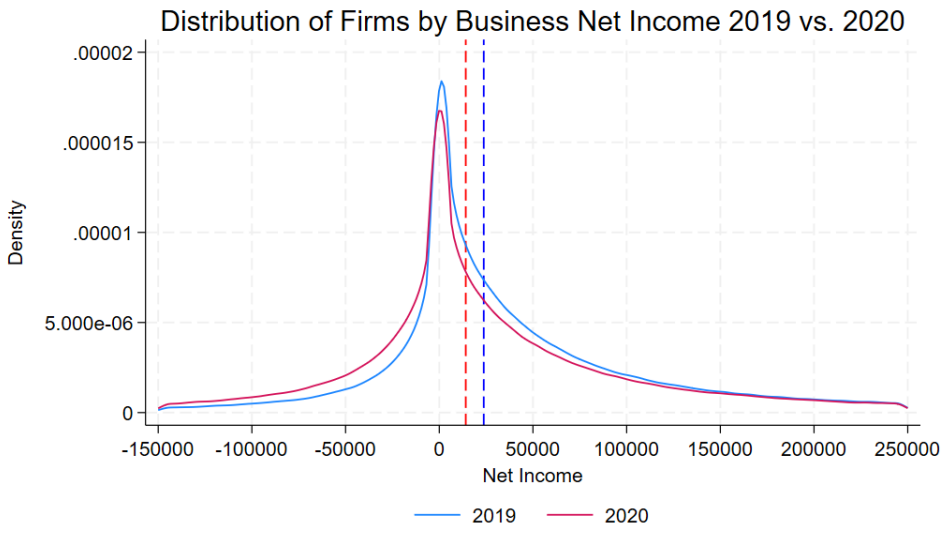


Table 1: PPP Disbursements by Eligibility Criteria

	2020
Total PPP Disbursments (2020)	528.9
Eligibility Classification	
Is Recipient a Business?	
Not a qualifying business entity	16.4
No payroll or qualifying expenses	14.4
Memo: Total non-business recipients	*30.8*
Does Business Meet PPP Eligiblity Rules?	
Employment Exceeds Qualifying Threshold	9.0
Not in operation in February 2020	9.4
Memo: Total non-qualifying payments	*18.4*
Was PPP Amount Disbursed Correct?	
PPP Payments In Excess of Qualifying Payroll	45.5
Were PPP Disbursements Used for Qualifying Expenses?	
Amount of PPP Disbursements Not Used for Qualifying Expenses	5.4
Total Ineligible PPP Amount Paid	100.1
As a % of total PPP payments	18.9%

Table 2: How Did PPP Affect Pre- and Post-Tax Profits of Businesses?

	Corporations and Partnerships			*Sole Proprietors*		
Income Item	2019	2020	% Change	2019	2020	% Change
	(1)	(2)	(3)	(4)	(5)	(6)
Receipts						
Business Receipts	2,915,961	2,828,504	-3.0%	343,379	330,792	-3.7%
Other Receipts	65,909	78,238	18.7%	3,211	4,227	31.7%
Total	2,981,870	2,906,742	-2.5%	346,590	335,020	-3.3%
Less						
Payroll and Compensation	576,756	573,386	-0.6%	41,290	42,309	2.5%
Other Expenses	2,285,235	2,220,569	-2.8%	254,744	247,878	-2.7%
Total	2,861,991	2,793,955	-2.4%	296,034	290,186	-2.0%
Equals						
Pre-tax, pre-PPP Income	119,879	112,787	-5.9%	50,556	44,833	-11.3%
Less						
Taxes	46,397	49,575	6.8%	15,939	14,511	-9.0%
Equals						
After-Tax, Pre-PPP Income	73,482	63,212	-14.0%	34,617	30,322	-12.4%
Plus						
PPP		131,608			44,264	
Equals						
Pre-Tax Net, plus PPP income	119,879	244,395	103.9%	50,556	89,097	76.2%
After-Tax, plus PPP Income	73,482	194,820	165.1%	34,617	74,586	115.5%
N	2,803,335	2,803,335		1,093,468	1,093,468	

Table 3: Who Profited from PPP?

Distribution of PPP Disbursements and Profit by Income

Income Group		2019		2020		2020 + PPP		PPP			Benefit of PPP Tax Treatment
	Income Threshold	Pre-tax Income	After-Tax Income	Pre-tax Income	After-Tax Income	Pre-tax Income	After-Tax Income	by 2019 income	by 2020 income	by 2020 income + PPP	
Average $											
Negative		*(668,323)*	*(673,508)*	*(538,254)*	*(543,976)*	*(686,718)*	*(694,406)*	*79,666*	*91,603*	*50,507*	*10,101*
0 to 10	-	*1,114*	*462*	*2,742*	*2,021*	*2,963*	*2,372*	*31,357*	*32,276*	*9,137*	*1,645*
10 to 20	*5,850*	*8,202*	*7,236*	*10,190*	*9,370*	*10,190*	*9,451*	*26,810*	*26,585*	*8,467*	*667*
20 to 30	*13,909*	*15,787*	*14,289*	*18,084*	*16,816*	*18,161*	*17,129*	*24,253*	*25,600*	*8,250*	*560*
30 to 40	*22,094*	*24,069*	*22,075*	*26,410*	*24,693*	*26,479*	*25,077*	*23,425*	*25,436*	*8,963*	*561*
40 to 50	*30,725*	*33,416*	*30,824*	*35,690*	*33,363*	*35,726*	*33,859*	*23,691*	*26,463*	*10,370*	*651*
50 to 60	*40,719*	*44,982*	*41,579*	*47,300*	*44,166*	*47,315*	*44,770*	*25,065*	*26,722*	*11,738*	*749*
60 to 70	*53,953*	*60,615*	*55,936*	*63,090*	*58,590*	*63,083*	*59,463*	*25,561*	*27,175*	*13,349*	*923*
70 to 80	*72,255*	*83,123*	*76,148*	*85,844*	*79,007*	*85,906*	*80,380*	*27,924*	*29,621*	*15,679*	*1,221*
80 to 90	*99,736*	*120,741*	*108,941*	*124,192*	*112,221*	*124,620*	*115,042*	*33,129*	*33,655*	*20,218*	*1,941*
90 to 95	*151,383*	*177,258*	*155,336*	*183,118*	*160,161*	*183,313*	*165,263*	*42,925*	*42,401*	*29,237*	*3,772*
95 to 99	*220,162*	*326,903*	*272,616*	*342,872*	*284,444*	*345,577*	*298,565*	*68,691*	*65,343*	*54,993*	*10,166*
99 to 99.9	*555,953*	*953,874*	*720,158*	*1,036,044*	*777,862*	*1,039,473*	*826,948*	*150,073*	*142,541*	*163,728*	*48,909*
Top .1	*2,601,757*	*7,148,110*	*5,323,721*	*8,632,523*	*6,408,588*	*8,061,608*	*6,149,884*	*381,404*	*384,479*	*646,037*	*201,771*
Total		*322,777*	*250,282*	*349,014*	*266,649*	*409,302*	*326,937*	*60,289*	*60,289*	*60,289*	*16,760*

Note: PPP recipients assigned to income groups based on 2019 income, 2020 income, and 2020 income including PPP in each respective panel.

Table 3 Continued: Who Profited from PPP?

Distribution of PPP Disbursements and Profit by Income

Income	2019			2020			2020 + PPP			PPP			Benefit of PPP Tax Treatment
	Number of Individual Recipients	Pre-tax Income	After-Tax Income	Number of Individual Recipients	Pre-tax Income	After-Tax Income	Number of Individual Recipients	Pre-tax Income	After-Tax Income	by 2019 income	by 2020 income	by 2020 income + PPP	
Percent Distribution													
Negative										*5%*	*9%*	*4%*	*3%*
0 to 10	*1%*	*0%*	*0%*	*1%*	*0%*	*0%*	*1%*	*0%*	*0%*	*0%*	*1%*	*0%*	*0%*
10 to 20	*2%*	*0%*	*0%*	*2%*	*0%*	*0%*	*2%*	*0%*	*0%*	*1%*	*1%*	*0%*	*0%*
20 to 30	*3%*	*0%*	*0%*	*3%*	*0%*	*0%*	*2%*	*0%*	*0%*	*1%*	*1%*	*0%*	*0%*
30 to 40	*3%*	*0%*	*0%*	*3%*	*0%*	*0%*	*3%*	*0%*	*0%*	*1%*	*1%*	*0%*	*0%*
40 to 50	*4%*	*0%*	*0%*	*4%*	*0%*	*0%*	*3%*	*0%*	*0%*	*1%*	*2%*	*1%*	*0%*
50 to 60	*5%*	*1%*	*1%*	*5%*	*1%*	*1%*	*4%*	*0%*	*1%*	*2%*	*2%*	*1%*	*0%*
60 to 70	*7%*	*1%*	*1%*	*7%*	*1%*	*1%*	*6%*	*1%*	*1%*	*3%*	*3%*	*1%*	*0%*
70 to 80	*10%*	*2%*	*3%*	*10%*	*2%*	*2%*	*9%*	*2%*	*2%*	*4%*	*4%*	*2%*	*1%*
80 to 90	*16%*	*5%*	*6%*	*15%*	*5%*	*5%*	*15%*	*4%*	*5%*	*8%*	*8%*	*5%*	*2%*
90 to 95	*14%*	*7%*	*8%*	*13%*	*6%*	*7%*	*14%*	*6%*	*6%*	*9%*	*9%*	*6%*	*3%*
95 to 99	*24%*	*22%*	*23%*	*23%*	*19%*	*20%*	*26%*	*20%*	*21%*	*26%*	*23%*	*23%*	*17%*
99 to 99.9	*12%*	*30%*	*29%*	*11%*	*29%*	*27%*	*14%*	*31%*	*30%*	*28%*	*25%*	*36%*	*45%*
Top .1	*2%*	*31%*	*30%*	*2%*	*37%*	*35%*	*2%*	*36%*	*34%*	*10%*	*10%*	*21%*	*28%*

Note: PPP recipients assigned to income groups based on 2019 income, 2020 income, and 2020 income including PPP in each respective panel.

A Appendix

Appendix Table 1: Inappropriate Disbursements by Lender

Largest Lenders

Type of Lender	PPP Loans	PPP $	Ineligible Firms ($)	Improper Amounts ($)	Share Ineligible	Share Improper	Total
National Bank	343,937	25.5	2.0	2.5	8%	10%	17%
National Bank	279,852	29.5	2.2	3.4	7%	11%	19%
Fintech Partner Bank	267,430	8.0	2.5	0.8	**31%**	11%	42%
National Bank	194,836	10.7	0.9	1.1	9%	10%	19%
Fintech	128,378	2.5	1.7	0.2	**69%**	8%	78%
Regional Bank	109,557	5.4	0.7	0.9	13%	17%	30%
National Bank	108,002	7.6	0.7	0.8	9%	10%	19%
National Bank	85,831	8.6	0.4	1.0	5%	12%	17%
National Bank	82,106	13.2	0.6	1.5	4%	11%	16%
Fintech	80,421	0.9	0.2	0.1	**25%**	9%	35%
Fintech Partner Bank	75,657	2.2	0.4	0.2	**20%**	10%	30%
National Bank	73,979	13.1	0.5	1.4	4%	11%	15%
Specialized/Fintech Partner Bank	67,591	3.2	1.0	0.5	**30%**	15%	45%
National/Regional Bank	51,031	5.0	0.3	0.7	5%	14%	19%
Regional Bank	47,705	7.0	0.4	0.6	6%	9%	14%
Regional Bank	47,220	4.8	0.5	0.5	11%	11%	22%
National/Regional Bank	43,320	8.3	0.4	0.9	5%	10%	15%
Regional Bank	40,003	5.4	0.3	0.6	6%	11%	17%
Regional Bank	38,494	6.6	0.4	0.7	6%	11%	17%
Regional Bank	34,653	6.8	0.3	0.6	4%	8%	13%
Regional Bank	32,716	4.2	0.2	0.3	6%	8%	13%
National Bank	30,924	3.4	0.3	0.4	8%	12%	20%
Regional Bank	27,556	1.2	0.2	0.1	13%	5%	17%
Fintech or Specialized Lender	23,605	0.6	0.4	0.1	**67%**	11%	78%
Regional Bank	23,360	3.2	0.1	0.2	3%	5%	9%

Source: Small Business Administration.

Appendix Table 1 Continued: Inappropriate Disbursements by Lender

Lenders with Highest Rates of Inappropriate Disbursements (among lenders with >5,000 loans)

Type of Lender	PPP Loans	PPP $	Ineligible Firms ($)	Improper Amounts ($)	Share Ineligible	Share Improper	Total
Fintech	128,378	2.5	1.7	0.2	69%	8%	78%
Fintech or Specialized Lender	23,605	0.6	0.4	0.1	67%	11%	78%
Fintech	13,972	0.3	0.2	0.0	45%	11%	56%
Fintech Partner Bank	267,430	8.0	2.5	0.8	31%	11%	42%
Specialized/Fintech Partner Bank	67,591	3.2	1.0	0.5	30%	15%	45%
Fintech	80,421	0.9	0.2	0.1	25%	9%	35%
Specialized/SBA Lender	8,812	0.9	0.2	0.1	23%	13%	36%
Digital/Online Bank	6,232	1.0	0.2	0.3	20%	29%	49%
Fintech Partner Bank	75,657	2.2	0.4	0.2	20%	10%	30%
Credit Union	6,700	0.2	0.0	0.0	16%	8%	23%
Regional Bank	6,048	0.4	0.1	0.0	15%	7%	22%
Regional Bank	109,557	5.4	0.7	0.9	13%	17%	30%
Digital Bank	19,405	0.7	0.1	0.1	13%	9%	22%
Community Bank	9,841	1.0	0.1	0.2	13%	16%	29%
Regional Bank	27,556	1.2	0.2	0.1	13%	5%	17%
Specialized/SBA Lender	5,329	1.3	0.1	0.2	12%	13%	24%
Regional Bank	47,220	4.8	0.5	0.5	11%	11%	22%
Regional Bank	7,433	1.8	0.2	0.2	11%	11%	22%
Specialized/SBA Lender	11,679	1.3	0.1	0.1	11%	11%	22%
Regional Bank	9,495	1.9	0.2	0.3	11%	14%	25%
Credit Union	7,124	0.3	0.0	0.0	10%	11%	21%
Community Bank	6,475	0.8	0.1	0.1	9%	17%	26%
National Bank	108,002	7.6	0.7	0.8	9%	10%	19%
Regional Bank	8,728	1.1	0.1	0.1	9%	8%	17%
National Bank	194,836	10.7	0.9	1.1	9%	10%	19%

Source: Small Business Administration.

Appendix Table 2: Distribution of PPP by Firm Characteristics

	All PPP Recipients	2020 Receipts > 2019 Receipts	2020 Employment > 2019 Employment	2020 Pre-PPP Profits > 2019 Pre-PPP Profits	2020 Pre-tax profits > 0	2020 After-Tax, PPP Profits > 2019
Number of Firms	2,803,335	1,116,870	1,212,271	1,138,321	1,676,294	1,943,465
Percent of PPP Recipient Firms	100%	40%	43%	41%	60%	69%
Average PPP	131,608	135,810	142,645	141,962	136,336	153,174
% of all $PPP	100%	41%	47%	44%	62%	81%

Baseline: Characteristics of all Eligible Firms	Number of Firms	CY Receipts> LY Receipts	CY Profit > LY Profit	CY Profit>0
Pre-pandemic: All 2019 eligible firms (2018 versus 2019)	4,588,180	2,825,661	2,956,806	3,218,205
Percent	100%	62%	64%	70%
Pandemic: All 2020 eligible firms (2019 versus 2020)	4,703,898	2,339,315	2,651,002	2,932,620
Percent	100%	50%	56%	62%
Pandemic: 2020 eligible firms that did not receive PPP (2019 versus 2020)	1,900,563	1,222,445	1,512,681	1,256,326
Percent	100%	64%	80%	66%

Appendix Table 3: Selected Income Statement Items of PPP Recipient Firms, by Industry, Tax Years 2019 and 2020

Panel A: Corporations and Partnerships

2019

Minor industry	Number of returns		Dollar Amounts						
	Total	With (positive) net income	Assets	Total Receipts	Business receipts	Expenses (used deductions from log file)	Wages	Net income	Positive Net Income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Agriculture, forestry, fishing and hunting (11)	141,156	89,941	1,916,162	1,674,097	1,424,504	1,629,671	131,879	44,426	203,829
Mining (21)	24,105	17,271	16,400,000	6,382,656	5,738,043	5,977,911	459,483	404,745	1,244,416
Utilities (22)	4,867	3,376	30,100,000	10,000,000	9,251,087	9,749,403	569,637	250,630	1,248,185
Construction (23)	491,633	375,658	1,175,124	3,011,323	2,988,510	2,871,261	212,233	140,061	223,173
Manufacturing (31)	196,137	130,375	6,351,258	8,100,802	7,912,277	7,777,227	669,273	323,575	800,221
Wholesale trade (42)	195,674	141,903	3,808,747	9,706,742	9,554,000	9,402,015	570,337	304,727	530,260
Retail trade (44)	489,921	343,630	1,320,124	4,102,853	4,010,626	4,022,640	309,511	80,213	163,934
Transportation and warehousing (48)	142,788	102,773	2,308,481	2,871,958	2,805,584	2,801,186	360,606	70,772	213,971
Information (51)	66,061	44,758	4,391,239	3,246,996	3,119,609	3,165,984	638,709	81,011	534,127
Finance and insurance (52)	125,631	102,412	28,900,000	2,308,961	1,730,355	1,988,613	512,100	320,347	493,075
Real estate and rental and leasing (53)	326,487	203,969	4,265,728	1,013,744	861,354	935,071	162,916	78,673	213,706
Professional, scientific, and technical services (54)	653,527	514,525	1,075,406	1,677,606	1,615,020	1,560,025	443,853	117,581	267,515
Management of companies (holding companies) (55)	23,913	16,048	210,000,000	30,500,000	24,100,000	27,900,000	3,664,555	2,650,340	5,248,173
Administrative and support and waste management and remediation services (56)	161,616	120,592	810,871	1,886,192	1,828,754	1,786,586	412,622	99,606	177,635
Educational services (61)	30,363	21,751	614,378	1,071,254	1,049,021	1,021,067	344,265	50,187	141,634
Health care and social assistance (62)	411,538	318,587	523,884	1,628,888	1,581,181	1,485,574	510,347	143,314	226,933
Arts, entertainment, and recreation (71)	91,409	63,771	1,307,372	1,406,758	1,318,271	1,317,126	265,378	89,631	231,215
Accommodation and food services (72)	333,700	219,673	1,244,621	1,685,455	1,626,317	1,622,592	346,756	62,863	172,603
Other services (81)	340,689	250,952	323,758	820,970	808,943	774,633	148,462	46,337	82,944

Appendix Table 3 Continued: Selected Income Statement Items of PPP Recipient Firms, by Industry, Tax Years 2019 and 2020

Panel A: Corporations and Partnerships

2020

Iindustry	Number of returns		Dollar Amounts											
	Total	With (positive) net income	Assets	Total Receipts	Business receipts	Expenses (used deductions from log file)	Wages	Net income	Positive Net Income	PPP	# ppp recipients	Takeup of PPP	Change in Total Receipts	Change in Net Income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)					
Agriculture, forestry, fishing and hunting (11)	141,156	84,868	2,009,146	1,721,138	1,464,701	1,674,943	192,582	46,195	218,479	94,706	60,400	43%	3%	4%
Mining (21)	24,105	14,898	18,300,000	6,405,856	5,776,050	6,184,780	846,019	221,076	1,152,341	230,466	9,262	38%	0%	-45%
Utilities (22)	4,867	3,283	30,300,000	9,981,213	9,289,884	9,770,165	900,656	211,048	1,242,683	196,987	1,973	41%	0%	-16%
Construction (23)	491,633	368,513	1,251,635	3,215,104	3,189,023	3,055,976	642,338	159,128	253,728	186,395	270,774	55%	7%	14%
Manufacturing (31)	196,137	126,784	6,885,005	8,385,767	8,190,137	8,107,949	1,416,302	277,818	839,275	219,750	21,411	11%	4%	-14%
Wholesale trade (42)	195,674	136,174	4,110,643	9,705,128	9,587,107	9,449,944	703,854	255,184	507,509	176,123	110,808	57%	0%	-16%
Retail trade (44)	489,921	334,984	1,349,935	4,223,287	4,121,841	4,140,202	375,126	83,085	180,928	116,393	218,117	45%	3%	4%
Transportation and warehousing (48)	142,788	98,825	2,453,690	2,991,533	2,918,101	2,918,576	555,757	72,957	230,866	150,287	63,401	44%	4%	3%
Information (51)	66,061	42,583	4,776,434	3,440,071	3,301,193	3,403,971	817,684	36,100	558,310	159,368	31,642	48%	6%	-55%
Finance and insurance (52)	125,631	100,225	31,300,000	2,535,558	1,894,700	2,216,308	608,651	319,249	539,985	91,907	65,106	52%	10%	0%
Real estate and rental and leasing (53)	326,487	184,310	4,493,566	1,057,803	900,475	991,069	200,237	66,735	234,215	88,778	116,142	36%	4%	-15%
Professional, scientific, and technical services (54)	653,527	500,641	1,193,036	1,808,009	1,738,193	1,696,300	596,507	111,709	292,297	142,843	353,484	54%	8%	-5%
Management of companies (holding companies) (55)	23,913	14,521	247,000,000	35,000,000	27,400,000	32,300,000	5,354,491	2,712,192	6,394,827	329,787	4,945	21%	15%	2%
Administrative and support and waste management and remediation services (56)	161,616	118,570	11,400,000	2,008,582	1,948,337	1,904,271	743,916	104,311	194,139	170,492	82,081	51%	6%	5%
Educational services (61)	30,363	21,002	738,109	1,150,960	1,120,234	1,095,892	414,045	55,069	167,194	105,680	17,459	58%	7%	10%
Health care and social assistance (62)	411,538	318,640	555,375	1,727,007	1,671,188	1,574,184	580,625	152,822	241,858	130,232	269,801	66%	6%	7%
Arts, entertainment, and recreation (71)	91,409	61,022	1,498,432	1,517,344	1,423,730	1,427,035	324,943	90,309	251,090	77,363	44,784	49%	8%	1%
Accommodation and food services (72)	333,700	216,501	1,306,134	1,768,047	1,708,183	1,713,750	457,124	54,298	169,481	119,113	231,214	69%	5%	-14%
Other services (81)	340,689	244,141	346,505	856,909	843,382	808,068	220,961	48,841	91,171	71,392	190,396	56%	4%	5%

Appendix Table 3 Continued: Selected Income Statement Items of PPP Recipient Firms, by Industry, Tax Years 2019 and 2020

Panel B: Sole Proprietors

2019

Minor industry	Number of returns		Dollar Amounts					
	Total	With (positive) net income	Total Receipts	Business receipts	Expenses	Wages	Net income	Positive Net Income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total returns of active corporations	3,126,199	3,077,203	63,722	63,310	49,545	1,092	14,177	15,655
Agriculture, forestry, fishing and hunting (11)	145,979	142,245	123,901	121,975	103,743	8,786	20,158	22,655
Mining (21)	47,228	46,348	133,049	128,845	102,208	8,346	30,841	33,954
Utilities (22)	9,258	9,112	73,150	72,479	53,755	4,140	19,395	20,359
Construction (23)	1,444,333	1,420,565	128,120	127,371	104,291	6,506	23,828	25,082
Manufacturing (31)	151,192	144,748	153,364	152,229	131,197	12,721	22,167	26,745
Wholesale trade (42)	160,768	156,034	256,734	254,877	223,081	9,336	33,653	36,595
Retail trade (44)	825,324	792,284	156,987	155,306	141,888	8,117	15,098	17,217
Transportation and warehousing (48)	1,110,498	1,099,844	79,210	78,449	63,869	2,604	15,341	16,004
Information (51)	170,547	168,425	52,308	51,581	30,762	2,816	21,545	22,723
Finance and insurance (52)	367,863	361,003	139,580	135,798	73,695	11,679	65,885	68,228
Real estate and rental and leasing (53)	783,103	773,398	86,753	85,249	46,601	2,900	40,152	41,479
Professional, scientific, and technical services (54)	1,985,050	1,962,688	77,992	76,765	37,515	5,950	40,477	41,444
Management of companies (holding companies) (55)	753	726	270,003	259,244	239,244	30,341	30,760	36,742
Administrative and support and waste management and remediation services (56)	1,101,733	1,087,450	41,770	41,315	26,975	4,052	14,795	15,314
Educational services (61)	401,979	398,211	19,378	19,142	8,528	1,472	10,851	11,151
Health care and social assistance (62)	1,111,662	1,093,114	81,962	80,914	44,605	12,127	37,357	38,569
Arts, entertainment, and recreation (71)	743,507	734,729	39,288	38,416	22,595	1,774	16,693	17,611
Accommodation and food services (72)	231,260	203,301	205,478	203,587	190,551	34,812	14,928	23,220
Other services (81)	2,219,135	2,189,100	44,557	44,140	29,753	3,058	14,804	15,299

Appendix Table 3 Continued: Selected Income Statement Items of PPP Recipient Firms, by Industry, Tax Years 2019 and 2020

Panel B: Sole Proprietors

Industry	2020												
	Number of returns		Dollar Amounts										
	Total	With (positive) net income	Total Receipts	Business receipts	Expenses	Wages	Net income	Positive Net Income	PPP	# ppp recipients	Takeup of PPP	Change in Total Receipts	Change in Net Income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)					
Total	3,126,199	3,077,203	65,794	65,348	52,206	1,064	13,588	17,075	66,800	127,217	4%	3%	-4%
Agriculture, forestry, fishing and hunting (11)	145,979	142,245	124,613	122,722	105,357	8,855	19,256	24,876	36,139	10,294	7%	1%	-4%
Mining (21)	47,228	46,348	124,222	120,859	100,256	8,842	23,966	33,759	83,879	2,879	6%	-7%	-22%
Utilities (22)	9,258	9,112	73,053	71,926	54,001	4,375	19,052	22,100	170,442	448	5%	0%	-2%
Construction (23)	1,444,333	1,420,565	136,580	135,804	112,241	7,030	24,339	27,405	46,125	89,013	6%	7%	2%
Manufacturing (31)	151,192	144,748	159,004	157,860	137,201	13,545	21,803	30,355	70,051	13,412	9%	4%	-2%
Wholesale trade (42)	160,768	156,034	258,157	256,337	226,111	9,887	32,046	40,193	49,256	14,904	9%	1%	-5%
Retail trade (44)	825,324	792,284	158,979	157,270	144,651	8,357	14,329	19,814	31,912	63,015	8%	1%	-5%
Transportation and warehousing (48)	1,110,498	1,099,844	80,714	79,978	66,175	2,741	14,539	17,379	40,720	63,685	6%	2%	-5%
Information (51)	170,547	168,425	55,121	54,254	34,113	2,990	21,008	25,848	61,959	9,323	5%	5%	-2%
Finance and insurance (52)	367,863	361,003	141,323	137,521	75,870	11,687	65,453	74,116	31,895	45,399	12%	1%	-1%
Real estate and rental and leasing (53)	783,103	773,398	88,410	87,001	49,412	3,037	38,998	47,205	27,400	74,977	10%	2%	-3%
Professional, scientific, and technical services (54)	1,985,050	1,962,688	82,254	81,020	42,302	6,197	39,951	45,280	41,939	154,509	8%	5%	-1%
Management of companies (holding companies) (55)	753	726	242,118	224,451	202,811	38,968	39,307	52,950	131,339	58	8%	-10%	28%
Administrative and support and waste management and remediation services (56)	1,101,733	1,087,450	46,532	46,003	31,685	4,446	14,847	16,465	68,014	42,882	4%	11%	0%
Educational services (61)	401,979	398,211	22,327	22,071	11,407	1,624	10,920	12,175	100,656	12,860	3%	15%	1%
Health care and social assistance (62)	1,111,662	1,093,114	87,264	86,159	49,795	12,723	37,470	41,290	56,201	95,971	9%	6%	0%
Arts, entertainment, and recreation (71)	743,507	734,729	41,397	40,522	25,313	1,807	16,084	19,768	42,083	29,491	4%	5%	-4%
Accommodation and food services (72)	231,260	203,301	214,349	212,417	198,795	36,728	15,554	25,749	46,917	41,325	18%	4%	4%
Other services (81)	2,219,135	2,189,100	48,171	47,722	33,200	3,152	14,971	16,586	27,077	150,451	7%	8%	1%

Appendix Table 5: Selected Income Statement Items by Size of Employment

Sector and item	2019 Number of Returns	2019 Mean	2019 Total	2020 Number of Returns	2020 Mean	2020 Total	Change
Group 0							
Total assets	15,025,247	-	-	15,025,247	-	-	
Total receipts	15,025,247	67,639	1,016	15,025,247	65,306	981	-3%
Business receipts	15,025,247	66,856	1,005	15,025,247	64,459	969	-4%
Total deductions	15,025,247	45,187	679	15,025,247	44,354	666	-2%
Compensation	15,025,247	1,317	20	15,025,247	2,338	35	78%
Total receipts less total deductions	15,025,247	22,453	337	15,025,247	20,952	315	-7%
Net income (less deficit)	15,025,247	22,453	337	15,025,247	20,952	315	-7%
Positive Net Income	14,918,821	22,817	340	13,035,362	24,681	322	-5%
$ PPP			-	700,262	15,078	11	
Net Income Including PPP			337	15,025,247	21,655	325	-4%
Positive Net Income Including PPP			340	13,103,847	25,326	332	-3%
Group 1							
Total assets	1,066,857	1,181,443	1,260	1,066,857	1,033,431	1,103	-13%
Total receipts	1,292,850	492,280	636	1,292,850	497,577	643	1%
Business receipts	1,292,850	450,984	583	1,292,850	456,442	590	1%
Total deductions	1,292,850	426,098	551	1,292,850	439,408	568	3%
Compensation	1,292,850	44,520	58	1,292,850	48,831	63	10%
Total receipts less total deductions	1,292,850	66,182	86	1,292,850	58,169	75	-12%
Net income (less deficit)	1,292,850	66,182	86	1,292,850	58,169	75	-12%
Positive Net Income	965,753	108,799	105	876,466	119,595	105	0%
$ PPP				436,432	18,779	8	
Net Income Including PPP				1,292,850	64,509	83	-3%
Positive Net Income Including PPP				928,405	119,539	111	6%
Group 2							
Total assets	1,328,772	1,340,902	1,782	1,328,772	1,410,761	1,875	5%
Total receipts	1,594,528	756,962	1,207	1,594,528	749,455	1,195	-1%
Business receipts	1,594,528	705,119	1,124	1,594,528	695,364	1,109	-1%
Total deductions	1,594,528	685,086	1,092	1,594,528	680,191	1,085	-1%
Compensation	1,594,528	91,131	145	1,594,528	94,324	150	4%
Total receipts less total deductions	1,594,528	71,876	115	1,594,528	69,264	110	-4%
Net income (less deficit)	1,594,528	71,876	115	1,594,528	69,264	110	-4%
Positive Net Income	1,190,825	121,855	145	1,041,020	148,338	154	6%
$ PPP				832,969	30,026	25	
Net Income Including PPP				1,594,528	84,949	135	18%
Positive Net Income Including PPP				1,177,678	146,703	173	19%
Group 3							
Total assets	758,983	1,722,235	1,307	758,983	1,924,307	1,461	12%
Total receipts	881,801	1,534,383	1,353	881,801	1,494,067	1,317	-3%
Business receipts	881,801	1,446,162	1,275	881,801	1,425,326	1,257	-1%
Total deductions	881,801	1,417,514	1,250	881,801	1,418,112	1,250	0%
Compensation	881,801	246,259	217	881,801	246,487	217	0%
Total receipts less total deductions	881,801	116,869	103	881,801	75,955	67	-35%
Net income (less deficit)	881,801	116,869	103	881,801	75,956	67	-35%
Positive Net Income	642,741	209,917	135	545,436	221,307	121	-11%
$ PPP				656,026	59,890	39	
Net Income Including PPP				881,801	120,512	106	3%
Positive Net Income Including PPP				682,912	219,278	150	11%

Appendix Table 5 Continued: Selected Income Statement Items by Size of Employment

Group 4							
Total assets	502,864	4,356,084	2,191	502,864	5,563,958	2,798	28%
Total receipts	557,371	2,877,326	1,604	557,371	2,781,245	1,550	-3%
Business receipts	557,371	2,718,598	1,515	557,371	2,621,379	1,461	-4%
Total deductions	557,371	2,722,652	1,518	557,371	2,642,577	1,473	-3%
Compensation	557,371	542,003	302	557,371	534,020	298	-1%
Total receipts less total deductions	557,371	154,674	86	557,371	138,668	77	-10%
Net income (less deficit)	557,371	154,674	86	557,371	138,668	77	-10%
Positive Net Income	405,494	299,480	121	333,645	375,428	125	3%
$ PPP				455,701	119,479	54	
Net Income Including PPP				557,371	236,353	132	53%
Positive Net Income Including PPP				444,217	374,221	166	37%
Group 5							
Total assets	335,107	5,574,749	1,868	335,107	5,917,034	1,983	6%
Total receipts	335,122	6,684,735	2,240	335,122	6,470,687	2,168	-3%
Business receipts	335,122	6,457,855	2,164	335,122	6,230,925	2,088	-4%
Total deductions	335,122	6,408,880	2,148	335,122	6,206,021	2,080	-3%
Compensation	335,122	1,313,290	440	335,122	1,283,081	430	-2%
Total receipts less total deductions	335,122	275,855	92	335,122	264,666	89	-4%
Net income (less deficit)	335,122	275,855	92	335,122	264,666	89	-4%
Positive Net Income	244,362	566,219	138	195,117	763,320	149	8%
$ PPP				286,109	268,669	77	
Net Income Including PPP				335,122	494,040	166	79%
Positive Net Income Including PPP				272,725	760,124	207	50%
Group 6							
Total assets	98,207	16,100,000	1,581	98,207	16,500,000	1,620	2%
Total receipts	107,323	16,600,000	1,782	107,323	15,800,000	1,696	-5%
Business receipts	107,323	16,100,000	1,728	107,323	15,300,000	1,642	-5%
Total deductions	107,323	16,100,000	1,728	107,323	15,300,000	1,642	-5%
Compensation	107,323	3,078,072	330	107,323	2,998,720	322	-3%
Total receipts less total deductions	107,323	500,000	54	107,323	500,000	54	0%
Net income (less deficit)	107,323	496,424	53	107,323	513,001	55	3%
Positive Net Income	79,604	1,133,688	90	67,140	1,508,182	101	12%
$ PPP				88,508	646,524	57	
Net Income Including PPP				107,323	1,046,181	112	111%
Positive Net Income Including PPP				90,833	1,622,113	147	63%
Group 7							
Total assets	52,252	147,000,000	7,681	52,252	112,000,000	5,852	-24%
Total receipts	60,846	277,000,000	16,854	60,846	161,000,000	9,796	-42%
Business receipts	60,846	272,000,000	16,550	60,846	157,000,000	9,553	-42%
Total deductions	60,846	275,000,000	16,733	60,846	159,000,000	9,675	-42%
Compensation	60,846	8,556,042	521	60,846	8,327,606	507	-3%
Total receipts less total deductions	60,846	2,000,000	122	60,846	2,000,000	122	0%
Net income (less deficit)	60,846	2,051,291	125	60,846	1,696,058	103	-17%
Positive Net Income	45,260	3,898,183	176	40,563	4,141,226	168	-5%
$ PPP				45,357	1,551,168	70	
Net Income Including PPP				60,846	2,852,360	174	39%
Positive Net Income Including PPP				51,953	4,370,796	227	29%
Group 8							
Total assets	7,775	403,000,000	3,133	7,775	189,000,000	1,469	-53%
Total receipts	10,481	93,100,000	976	10,481	86,000,000	901	-8%
Business receipts	10,481	88,200,000	924	10,481	81,600,000	855	-7%
Total deductions	10,481	89,100,000	934	10,481	83,300,000	873	-7%
Compensation	10,481	17,200,000	180	10,481	17,300,000	181	1%
Total receipts less total deductions	10,481	4,000,000	42	10,481	2,700,000	28	-33%
Net income (less deficit)	10,481	4,027,142	42	10,481	2,684,526	28	-33%
Positive Net Income	7,807	7,958,419	62	7,241	8,367,688	61	-2%
$ PPP				6,342	3,313,072	21	
Net Income Including PPP				10,481	4,689,249	49	16%
Positive Net Income Including PPP				8,793	8,956,630	79	27%
Group 9							
Total assets	4,858	62,100,000	302	4,858	104,000,000	505	67%
Total receipts	13,401	26,200,000	351	13,401	30,900,000	414	18%
Business receipts	13,401	24,500,000	328	13,401	27,800,000	373	13%
Total deductions	13,401	25,500,000	342	13,401	30,000,000	402	18%
Compensation	13,401	7,921,987	106	13,401	8,390,390	112	6%
Total receipts less total deductions	13,401	700,000	9	13,401	900,000	12	29%
Net income (less deficit)	13,401	768,211	10	13,401	954,302	13	24%
Positive Net Income	9,543	1,450,669	14	8,875	2,061,423	18	32%
$ PPP				4,031	2,512,493	10	
Net Income Including PPP				13,401	1,710,056	23	123%
Positive Net Income Including PPP				9,966	2,734,003	27	97%

Appendix Table 6: How Did the 2021 Second Draw PPP Affect Pre- and Post-Tax Profits of Businesses?

Corporations and Partnerships

Income Item	2019	2020	2021	% Change 2019-2020	% Change 2019-2021
	(1)	(2)	(3)	(4)	(5)
Receipts					
Business Receipts	2,382,904	1,897,284	2,360,009	-20.4%	-1.0%
Other Receipts	40,331	42,599	57,149	5.6%	41.7%
Total	2,423,235	1,939,883	2,417,158	-19.9%	-0.3%
Less					
Payroll and Compensation	482,267	420,909	319,387	-12.7%	-33.8%
Other Expenses	1,845,365	1,508,283	1,995,414	-18.3%	8.1%
Total	2,327,632	1,929,192	2,314,801	-17.1%	-0.6%
Equals					
Pre-tax, pre-PPP Income	95,604	10,691	102,357	-88.8%	7.1%
Less					
Taxes	38,849	25,906	43,693	-33.3%	12.5%
Equals					
After-Tax, Pre-PPP Income	56,755	(15,215)	58,664	-126.8%	3.4%
Plus					
PPP		117,128	117,149		
Equals					
Pre-Tax Net, plus PPP income	95,604	127,819	219,506	33.7%	129.6%
After-Tax, plus PPP Income	56,755	101,913	175,813	79.6%	209.8%
N	994,858	994,858	994,858		