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**Working Paper**

## The Impact of COVID-19 on Small Business Owners: Evidence of Early-Stage Losses from the April 2020 Current Population Survey

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**Robert Fairlie**

*University of California, Santa Cruz, Stanford University, NBER and IZA*

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## ABSTRACT

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# The Impact of COVID-19 on Small Business Owners: Evidence of Early-Stage Losses from the April 2020 Current Population Survey

Social distancing restrictions and demand shifts from COVID-19 are expected to shutter many small businesses, but there is very little early evidence on impacts. This paper provides the first analysis of impacts of the pandemic on the number of active small businesses in the United States using nationally representative data from the April 2020 CPS – the first month fully capturing early effects from the pandemic. The number of active business owners in the United States plummeted by 3.3 million or 22 percent over the crucial two-month window from February to April 2020. The drop in business owners was the largest on record, and losses were felt across nearly all industries and even for incorporated businesses. African-American businesses were hit especially hard experiencing a 41 percent drop. Latinx business owners fell by 32 percent, and Asian business owners dropped by 26 percent. Simulations indicate that industry compositions partly placed these groups at a higher risk of losses. Immigrant business owners experienced substantial losses of 36 percent. Female-owned businesses were also disproportionately hit by 25 percent. These findings of early-stage losses to small businesses have important policy implications and may portend longer-term ramifications for job losses and economic inequality.

**JEL Classification:** J15, J16, L26

**Keywords:** small business, entrepreneurship, self-employment, COVID-19, coronavirus, shelter in place, social distancing

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# 1. Introduction

The widespread closing of stores and businesses in the United States and around the world due to the coronavirus is unprecedented. Stores, factories and many other businesses have closed by policy mandate or downward demand shifts. Many of these closures may be permanent because of the inability to pay ongoing expenses and survive the shutdown. The impact on small businesses around the world is likely to be severe.

Although the effects of COVID-19 on the economy showed up quickly in the stock market, the real estate market and unemployment claims, the effects on small business are not well known because of the lack of timely business-level data released by the government. This paper addresses this limitation by creating estimates of the number of business owners from monthly Current Population Survey (CPS) microdata files. Using these timely data, I examine how COVID-19 impacted small business owners in mid-April 2020 – the first month to capture the wide-spread shelter-in-place restrictions in the United States. The CPS data are used by the Bureau of Labor Statistics (BLS) to track unemployment rates, and have been used in previous research to study determinants of business ownership (e.g. recently, Levine and Rubenstein 2017, Wang 2019, Fairlie and Fossen 2019). The data allow for an analysis of recent trends in the number of business owners by business characteristics such as corporation status and industry, and demographic characteristics such as gender, race, and immigrant status.

This study provides the first estimates of the early-stage effects of COVID-19 on small business owners from April 2020 CPS microdata. I find that the number of working business owners plummeted from 15.0 million in February 2020 to 11.7 million in April 2020 because of COVID-19 mandates and demand shifts. The loss of 3.3 million business owners (or 22 percent) was the largest drop on record. When conditioning on working roughly two days per week or four days a week, the losses are even larger (28 percent and 31 percent, respectively). Although incorporated businesses are more growth-oriented and stable, they experienced a drop of 20 percent from February to April 2020.

Patterns across gender, race and immigrant status reveal interesting findings. African-Americans experienced the largest losses, eliminating 41 percent of business owners. Latinx also experienced major losses with 32 percent of business owners disappearing between February and April 2020. Immigrant business owners suffered a large drop of 36 percent, and female business owners suffered a disproportionate drop of 25 percent.

Most major industries faced large drops in the number of business owners with the only exception being agriculture. Construction, restaurants, hotels and transportation all faced large declines in the number of business owners due to COVID-19. Simulations reveal that the concentrations of female, black, Latinx and Asian businesses in industries hit hard by the pandemic contributed to why losses were higher for these groups than the national average loss. Overall, these first estimates of impacts of COVID-19 on small businesses from the April 2020 CPS indicate that losses were spread across demographic groups and types of business – no group was immune to negative impacts of social distancing policy mandates and demand shifts.

These results build on the findings from a few previous studies of the early effects of the coronavirus on small businesses. Employer business applications as measured by the U.S. Census weekly Business Formation Statistics fell in the five weeks from mid-March to mid-April by over 27 percent relative to the previous year (Wilmoth 2020). Estimates from the U.S. Census Small Business Pulse Survey indicate that roughly 50 percent of businesses report having a large negative effect from the COVID-19 pandemic and that only 15-20 percent of businesses have enough cash on hand to cover 3 months of operations (U.S. Census Bureau 2020; Bohn, Mejia and Lafortune 2020). Bartik et al. (2020) conducted a survey in late March of nearly 6,000 small businesses that were members of the Alignable business network. They find that 43 percent of businesses are temporarily closed, large reductions in employees, and the majority of businesses have less than one month of cash on hand. The Stanford Latino Entrepreneurship Initiative (2020) surveyed 224 high-revenue Latinx-owned businesses and found that 86% of respondents reported immediate negative effects such as delayed projects and closure from the pandemic. This paper is the first to use CPS data covering the early effects of COVID-19 mandates and demand shifts on small businesses, and the first to explore differential effects for female, minority and immigrant business owners, which is potentially important for targeting government aid to preserve small businesses and the jobs they create.<sup>1</sup>

## 2. Data

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<sup>1</sup> Large literatures explore the causes and consequences of disparities in ownership and success of minority-, female-, and immigrant-owned businesses. For broader discussions and reviews of these literature, see, for example, Davila and Mora (2013); Fairlie and Robb (2008); Jennings and Brush (2013); Kerr and Kerr. (2020); Parker (2018).

## **2.1 Current Population Survey (CPS)**

Although research on small businesses and entrepreneurship is growing rapidly, there are very few national datasets that provide information on ownership with additional information on demographic characteristics of the owners. Using microdata from the Current Population Surveys (CPS), I measure self-employed business ownership at the individual owner level. The underlying datasets are the basic monthly files to the Current Population Survey (CPS). These surveys, conducted monthly by the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics, are representative of the entire U.S. population and contain observations for more than 130,000 people.

Measures of the number and rate of business ownership are available from only a handful of other large, nationally representative government datasets, such as the Survey of Business Owners (SBO), Census PUMS files, and the American Community Survey (ACS). Measures of business ownership based on these cross-sectional data, however, cannot capture recent patterns because there is often a 1 to 2 year delay in release. The CPS is ideal in that it release microdata within a month of the survey week.

The measure of business ownership in the CPS captures all business owners including those who own incorporated or unincorporated businesses, and those who are employers or non-employers. Although some business owners own large businesses the predominate form are small businesses. I interpret the data as predominately covering small business owners.

To estimate business ownership in the CPS data, I identify all individuals who own a business as their main job in the survey month (based on the class of worker question and monthly labor force recode). The business ownership rate is thus defined as the percentage of the labor force that owns and is actively employed in a business. The main job is defined as the one with the most hours worked during the survey week. Thus, individuals who start side businesses will not be counted if they are working more hours on a wage and salary job. In addition to providing information on business ownership, the CPS data include information on detailed demographic information including gender, race, and immigrant status of the owner. The data also include information on the industry and incorporation status of the business.

*Survey Timing and Shelter-in-Place Restrictions*

The CPS survey reference period is generally the calendar week that contains the 12th day of the month. For April, the week was Sunday, April 12th through Saturday, April 18<sup>th</sup>. The March survey reference week was March 8th through March 14th. Given that shelter-in-place restrictions started after this reference week, the April 2020 is the first CPS survey fully covering the early-stage impacts of COVID-19. On March 16, 2020 San Francisco Bay Area imposed shelter-in-place restrictions followed by the State of California on March 19. New York State followed the next day. By early April all state imposed social distancing restrictions. The analysis below mostly relies on comparisons between February 2020 (prior to social distancing policy mandates) and April 2020 (the first month after policy mandates).<sup>2</sup>

### **3. Results**

#### **3.1 Number of Business Owners**

I first examine small business ownership patterns over time to determine the impacts of COVID-19. Long-term trends in the number of business owners are displayed in Figure 1 (and recent months in Table 1). The number of business owners working any amount and working at least 15 hours in the survey week are reported. The choice of 15 hours is made to approximate two days a week and accommodate lumpy hours reporting (i.e. often 10, 15, 20, etc...). Over the past two decades, the number of business owners in the United States has shown relatively smooth patterns over time with a slight upward trend. What is clear, however, is the dramatic drop in the number of business owners in April 2020. The number of working business owners dropped from 15.0 million in February 2020 to 11.7 million in April 2020 because of COVID-19. March 2020 only shows a small drop in business owners because of the limited effect from shelter-in-place restrictions.

The loss of 3.3 million business owners (or 22 percent) from February to April 2020 was the largest drop on record. When conditioning on working roughly two days per week, the losses are even larger. There were 13.6 million business owners working 15+ hours in February 2020 and only 9.8 million in April 2020. The drop of 3.8 million business owners or 28 percent was

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<sup>2</sup> In most analyses March 2020 is not included because of partial effects. On March 11, the World Health Organization (WHO) declared COVID-19 a pandemic which might have resulted in early demand shifts over health concerns predating shelter-in-place restriction policies.



unprecedented. Conditioning on 30 or more hours worked results in losses of 3.4 million or 31 percent (see Table 1).

Separating the number of business owners into unincorporated and incorporated status indicates large drops for both groups (see Table 1). Incorporated businesses are viewed as more growth- oriented, committed, pro-cyclical and entrepreneurial (e.g. Fairlie, Miranda and Zolas 2020; Levine and Rubinstein 2016, 2018). The number of unincorporated business owners dropped precipitously from 7.8 million to 5.1 million (34 percent). But, incorporated business owners were not immune to the COVID-19 impacts. The number of incorporated business owners in the United States dropped from 5.8 million to 4.7 million (20 percent).

### *Demographic Patterns*

The CPS data provide detailed information on gender, race and immigrant status. Figure 3 (Table 2) displays the number of female and male business owners in February and April 2020. Female businesses were especially hit hard by COVID-19. The number of female business owners dropped from 5.4 million to 4.0 million in the crucial two-month window. The decline of one-fourth of female business owners is unprecedented. Male business owners also suffered major losses with a reduction of 2 million representing 20 percent of previous levels.

Turning to racial patterns, Figure 4 (Table 2) displays business ownership by major racial groups. The findings are alarming. The number of African-American business owners plummeted from 1.1 million in February 2020 to 640,000 in April. The loss of 440,000 black business owners representing 41 percent of the previous level is disconcerting.

Latinx business owners also suffered major losses. The number of Latinx business owners dropped from 2.1 million to 1.4 million (32 percent) from February to March. Asian business owners suffered losses of 230,000 representing 26 percent of February levels. The losses for whites were also large at 1.8 million business owners, but smaller as a percentage of starting levels (17 percent).

Focusing on immigrants, the number of business owners dropped from 3.1 million to 2.0 million (Figure 5 and Table 2). The loss of over 1 million immigrant business owners is alarming. It represents a drop of 36 percent from February levels. For U.S. born, the number of business owners dropped by 2.2 million representing 18 percent of February levels.

Comparing back to April 2019 levels, the conclusions do not differ. For all of the demographic groups, the number of business owners dropped precipitously from April 2019 to April 2020. In general, the number of self-employed business owners for each group does not change substantially over time especially during stable economic conditions, and thus February 2020 accurately captures previous levels. April 2020 is clearly an unprecedented shock to business owners that hit all groups hard throwing business totals off relatively stable longer-term levels.

### *Industry Patterns*

Table 3 reports estimates by major industry groupings. Almost every industry experienced sizeable drops in the number of business owners. The only exception was Agriculture where the number of business owners increased since February 2020. Construction which in some cases is considered essential experienced a major decline of nearly 670,000 business owners in the United States. Although construction businesses experience a lot of swings in demand, it is not clear how many of these business owners will be able to come back.

Store fronts across the country have been closed due to COVID-19 mandated restrictions. Retail trade showed a decline of 108,000 business owners representing 10 percent of February 2020 levels. Restaurants experienced a decline of 22 percent even though many of those remaining open turned to take-out or delivery services. The broad sector of arts, leisure and accommodations was hit especially hard losing 35 percent of business owners.

Both high-skilled and less-skilled services were hit hard by COVID-19. Transportation services which includes taxi and some uber drivers dropped by 22 percent. Higher-skilled services such as financial activities and professional and business services lost 12 percent and 18 percent, respectively. Even health services experienced a drop of 16 percent.

Although there is some variation across industries COVID-19 had large impacts on all of them with the exception of agriculture.

It is also possible to categorize industries into essential vs non-essential according to state or local government guidelines, although there is a lot of variation across these guidelines in terms of specific industries. Delaware State provides the most detailed and comprehensive list of essential businesses at the 4-digit industry level and follows the same 4-digit industry codes as

the CPS (North American Industry Classification System, NAICS).<sup>3</sup> The classification is likely to be imperfect, however, because definitions, enforcement, business owner compliance and consumer reactions vary across the country. Using this categorization, “essential” industries comprise 76 percent of business owners. Losses in the number of business owners are lower for essential industries at 17 percent compared with 38 percent among non-essential industries (as expected).

### *Importance of Industry Distributions*

Did the industry distribution of businesses owned by different demographic groups place them at a higher or lower risk of COVID related shutdowns? To explore this question I simulate the total number of business owners for each demographic group by switching their industry distribution for the U.S. national industry distribution. The industry distributions are both measured in February 2020. Table 2 reports estimates from the simulations.

The number of female business owners declined by 25 percent from February to March 2020. The industry distribution of female business owners was partly responsible for relatively high business losses from February to April. When switching to the U.S. national industry distribution the decline in business owners is lower at 19 percent. Thus, the female industry distribution was “unfavorable” in terms of placing them at risk of business losses in April 2020. The opposite is true for male business owners. Their industry distribution partly protected them from larger losses due to COVID-19. Switching industry distributions to the national distribution results in a higher predicted drop in business owners of 23 percent. For both female and male business owners the differences between actual and predicted declines due to COVID-19 are not that different, however.

The industry distribution of black business owners placed them at a higher risk of losses due to COVID-19. The percent change in black business owners becomes considerably smaller when simulations are run with the national industry distribution. The change is from a loss of 41 percent to a loss of 35 percent.

A similar pattern is found for Latinx although to a lesser extent. When switching the Latinx industry distribution to the U.S. national industry distribution the predicted number of

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<sup>3</sup> Delaware’s list can be accessed at “List of Delaware Business Categories that are Essential and Non-Essential (March 22, 2020)”, <https://coronavirus.delaware.gov/resources-for-businesses/>.

Latinx business owners drops from 32 percent to 28 percent. Latinx business owners had an “unfavorable” industry distribution partly placing them at higher risk of business losses. Asian business owners show a similar pattern. I also find that they were more concentrated in industries placing them at a higher risk of losses. White business owners experienced the same level of losses when switching to the national industry distribution as expected given their large representation of the total.

Interestingly, the large loss in the number of immigrant business owners is not due to a less favorable industry distribution. The loss of 1.1 million immigrant business owners (or 36 percent) remains essentially unchanged when switching to the national industry distribution. U.S. born (“native”) business owners also have an industry distribution that is similar to the national distribution consistent with the size of the group.

Another way to estimate industry impacts is to examine the percentage of each demographic group that is in “essential” industries. As noted above the classification is not perfect and other factors such as differences in customer demand, enforcement and compliance by businesses also influence whether they are open. The percentage of black business owners in essential industries is 66 percent which is lower than the national percentage of 76 percent, and consistent with the less “favorable” industry distribution placing them at higher risk of losses due to COVID-19. Similarly, female-owned businesses are less concentrated in essential businesses at 61 percent. On the other hand, using the Delaware codes, Latinx and immigrant business owners are slightly more likely to be concentrated in essential industries (79-80 percent), and Asian business owners have the same concentration in essential industries as the national average (76 percent). The classification is likely to be imperfect and does not line up entirely well with patterns of group-specific losses.

## **4. Conclusions**

The first estimates of the effects of COVID-19 on the number of business owners from nationally representative April 2020 CPS data indicate dramatic early-stage reductions in small business activity. The number of active business owners in the United States plunged from 15.0 million to 11.7 million over the crucial two-month window from February to April 2020. No other one-, two- or even 12-month window of time has ever shown such a large change in business activity. For comparison, from the start to end of the Great Recession the number of

business owners decreased by 730,000 representing only a 5 percent reduction. In general, business ownership is relatively steady over the business cycle (Fairlie 2013; Parker 2018). The loss of 3.3 million business owners (or 22 percent) was comprised of large drops in important subgroups such as owners working roughly two days per week (28 percent), owners working four days a week (31 percent), and incorporated businesses (20 percent).

African-American businesses were hit the hardest by COVID-19. The first estimates from April 2020 for black business owners in the United States indicate a massive drop of 41 percent. Simulations indicate that the industry distribution of blacks was partly responsible placing black business owners at greater risk of losses due to the pandemic. Latinx businesses were also hit hard by COVID-19 losing 32 percent of business owners. Asian business owners experienced a 26 percent decline over the critical two-month window. Simulation estimates also point to unfavorable industry distributions for these two groups. Immigrant businesses were also devastated with losses of 36 percent. The negative early-stage impacts on minority- and immigrant-owned businesses, if prolonged, may be problematic for broader racial inequality because of the importance of minority businesses for local job creation (disproportionately for other minorities), economic advancement, and longer-term wealth inequality (Boston 1999, 2006; Bradford 2003, 2014; Fairlie and Robb 2008).

The first estimates of early stage impacts on female-owned businesses are also worrisome. Female business ownership is substantially lower than male business ownership and female-owned businesses have lower revenues, employees and profits on average (U.S. Census Bureau 2016). The disproportionate losses in April 2020 to the number of female business owners will only further increase gender inequality in business ownership and perhaps broader economic inequality.

The next important question is whether the shutdowns of small businesses are temporary or longer term. The government has been responding to concerns over longer-term effects on small businesses through several programs. The largest directed program is the Paycheck Protection Program (PPP) which has thus far provided \$669 billion to small businesses (although with some controversy when businesses such as Ruth's Chris Steak House, Potbelly Sandwich Shops, and the Lakers received approval for funds). Another program that is less directed but also could be important are stimulus checks already totaling \$200 billion. Foundations are also starting to contribute to relief efforts with a notable recent example being a \$100 million

commitment to minority- and female-owned businesses left out of the PPP program by Magic Johnson Enterprises. Can these programs help small businesses survive the setbacks and shutdowns due to the coronavirus pandemic, or will more assistance be needed? More permanent mass closures of small businesses in the United States are likely to have a dramatic effect on employee job losses, further income inequality, and contributing to a prolonged recession.

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Table 1: Number of Business Owners in the United States before and after COVID-19

|                      | Worked in<br>Survey<br>Week | Worked 15+<br>Hours | Worked 30+<br>Hours | Unincorporated | Incorporated |
|----------------------|-----------------------------|---------------------|---------------------|----------------|--------------|
| April 2020           | 11,710,360                  | 9,821,255           | 7,684,501           | 5,140,050      | 4,681,205    |
| March 2020           | 14,475,704                  | 12,803,107          | 10,392,909          | 7,297,898      | 5,505,209    |
| February 2020        | 15,012,692                  | 13,582,876          | 11,086,054          | 7,765,488      | 5,817,387    |
| January 2020         | 14,832,717                  | 13,293,991          | 11,093,877          | 7,519,945      | 5,774,046    |
| April 2019           | 14,662,821                  | 13,279,008          | 11,171,800          | 7,775,450      | 5,503,559    |
| Changes              |                             |                     |                     |                |              |
| Feb 2020 to Apr 2020 | -3302331                    | -3761621            | -3401554            | -2625439       | -1136182     |
| Apr 2019 to Apr 2020 | -2952461                    | -3457754            | -3487299            | -2635400       | -822354      |
| Change (Percent)     |                             |                     |                     |                |              |
| Feb 2020 to Apr 2020 | -22%                        | -28%                | -31%                | -34%           | -20%         |
| Apr 2019 to Apr 2020 | -20%                        | -26%                | -31%                | -34%           | -15%         |

Notes: Estimates from CPS Microdata. Monthly sample sizes are roughly 55,000 for the labor force and 5,000 for business owners.

Table 2: Demographic Group Losses and Simulations of Business Losses from Switching Industry Distributions

| Group     | Business Losses (Feb. to April 2020) |                    |               |          | Predicted using U.S. Industry Distribution |          |
|-----------|--------------------------------------|--------------------|---------------|----------|--|----------|
|           | Feb. 2020<br>Number                  | Apr 2020<br>Number | Actual Losses |          | Number                                     | % Change |
|           |                                      |                    | Number        | % Change |  |          |
| Total     | 15,012,692                           | 11,710,360         | -3,302,331    | -22%     | -3,302,331                                 | -22%     |
| Female    | 5,389,399                            | 4,048,205          | -1,341,194    | -25%     | -1,029,305                                 | -19%     |
| Male      | 9,623,293                            | 7,662,156          | -1,961,137    | -20%     | -2,184,231                                 | -23%     |
| Black     | 1,079,116                            | 637,769            | -441,347      | -41%     | -379,452                                   | -35%     |
| Latinx    | 2,070,896                            | 1,412,925          | -657,971      | -32%     | -583,009                                   | -28%     |
| Asian     | 888,528                              | 657,896            | -230,632      | -26%     | -195,041                                   | -22%     |
| White     | 10,553,415                           | 8,761,531          | -1,791,884    | -17%     | -1,928,907                                 | -18%     |
| Immigrant | 3,120,275                            | 2,009,597          | -1,110,677    | -36%     | -1,095,536                                 | -35%     |
| Native    | 11,892,417                           | 9,700,763          | -2,191,654    | -18%     | -2,256,417                                 | -19%     |

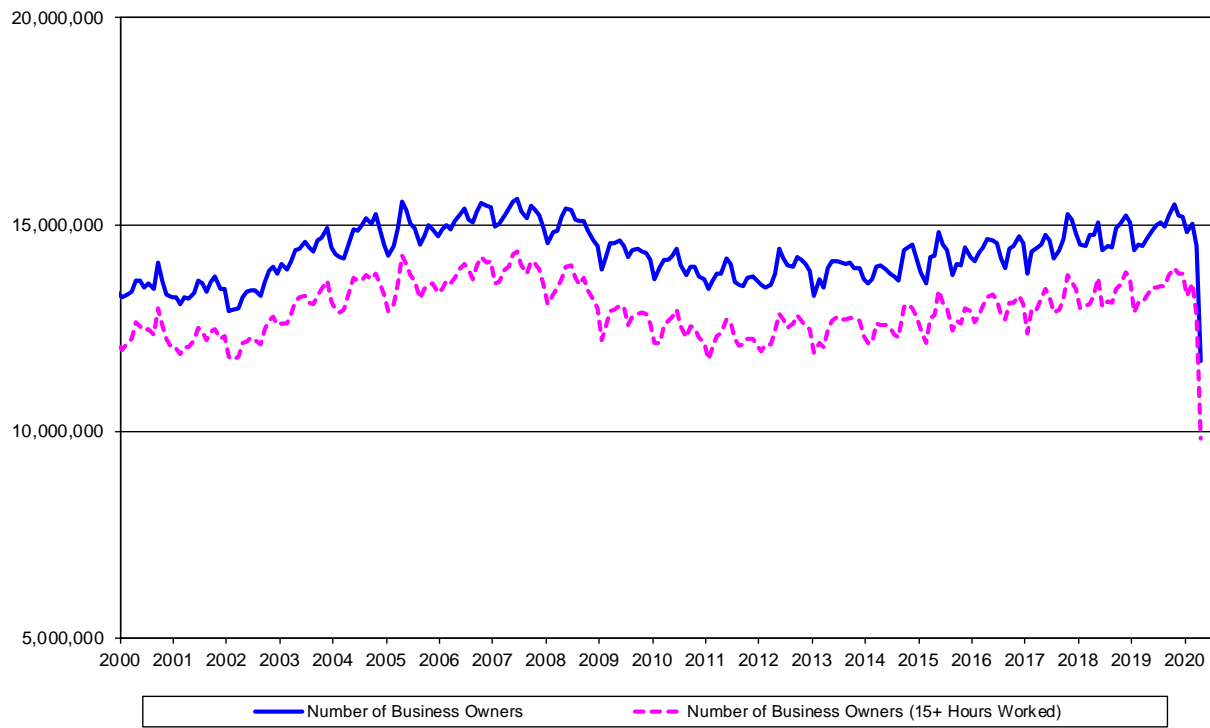
Notes: Estimates are from CPS microdata. Predicted changes switch the group's industry distribution for the U.S. industry distribution but continue to use the group's rate of change from February to April 2020.

Table 3: Business Losses by Selected Industries from COVID-19

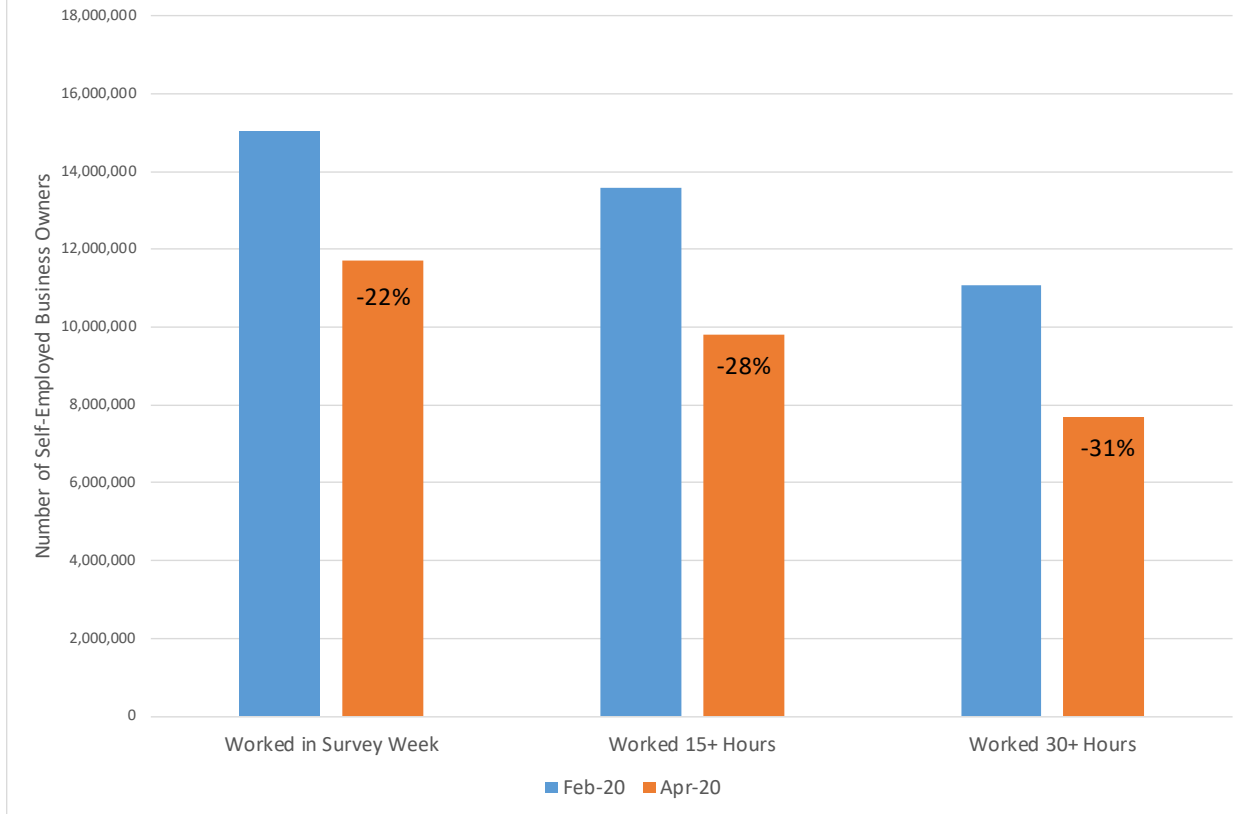
| Industry                | April 2020 | Change from<br>Feb. 2020 | Percent<br>Change | February 2020 | Percent in<br>Feb. 2020 |
|-------------------------|------------|--------------------------|-------------------|---------------|-------------------------|
| Agriculture             | 928,156    | 58494                    | 7%                | 869,661       | 6%                      |
| Construction            | 1,768,875  | -667182                  | -27%              | 2,436,057     | 16%                     |
| Manufacturing           | 506,019    | -60174                   | -11%              | 566,192       | 4%                      |
| Retail Trade            | 960,872    | -107612                  | -10%              | 1,068,484     | 7%                      |
| Transportation          | 624,498    | -173827                  | -22%              | 798,325       | 5%                      |
| Financial activities    | 1,149,105  | -152665                  | -12%              | 1,301,769     | 9%                      |
| Professional and bus.   | 2,695,136  | -600739                  | -18%              | 3,295,875     | 22%                     |
| Health services         | 1,034,240  | -204094                  | -16%              | 1,238,335     | 8%                      |
| Arts, leisure, hotels   | 442,964    | -242045                  | -35%              | 685,009       | 5%                      |
| Restaurants             | 319,194    | -90411                   | -22%              | 409,605       | 3%                      |
| Repair and maintenance  | 385,400    | -127003                  | -25%              | 512,403       | 3%                      |
| All other industries    | 895,901    | -935074                  | -51%              | 1,830,976     | 12%                     |
| "Nonessential" industry | 2,292,949  | -1382990                 | -38%              | 3,675,939     | 24%                     |
| "Essential" Industry    | 9,417,411  | -1919342                 | -17%              | 11,336,752    | 76%                     |

Notes: Estimates from CPS microdata. Essential industries are defined using the classification provided by Delaware State for essential and nonessential businesses.

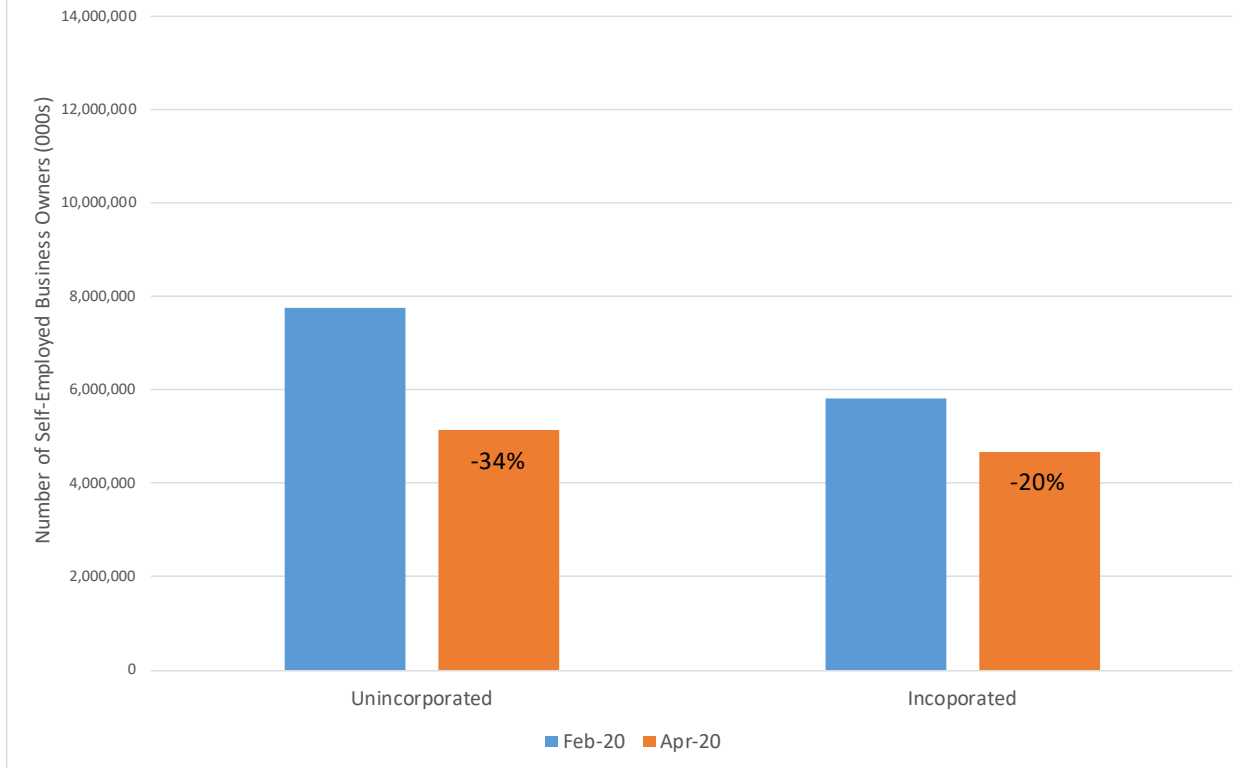
**Figure 1**  
**Number of Business Owners in the United States (January 2000 - April 2020)**



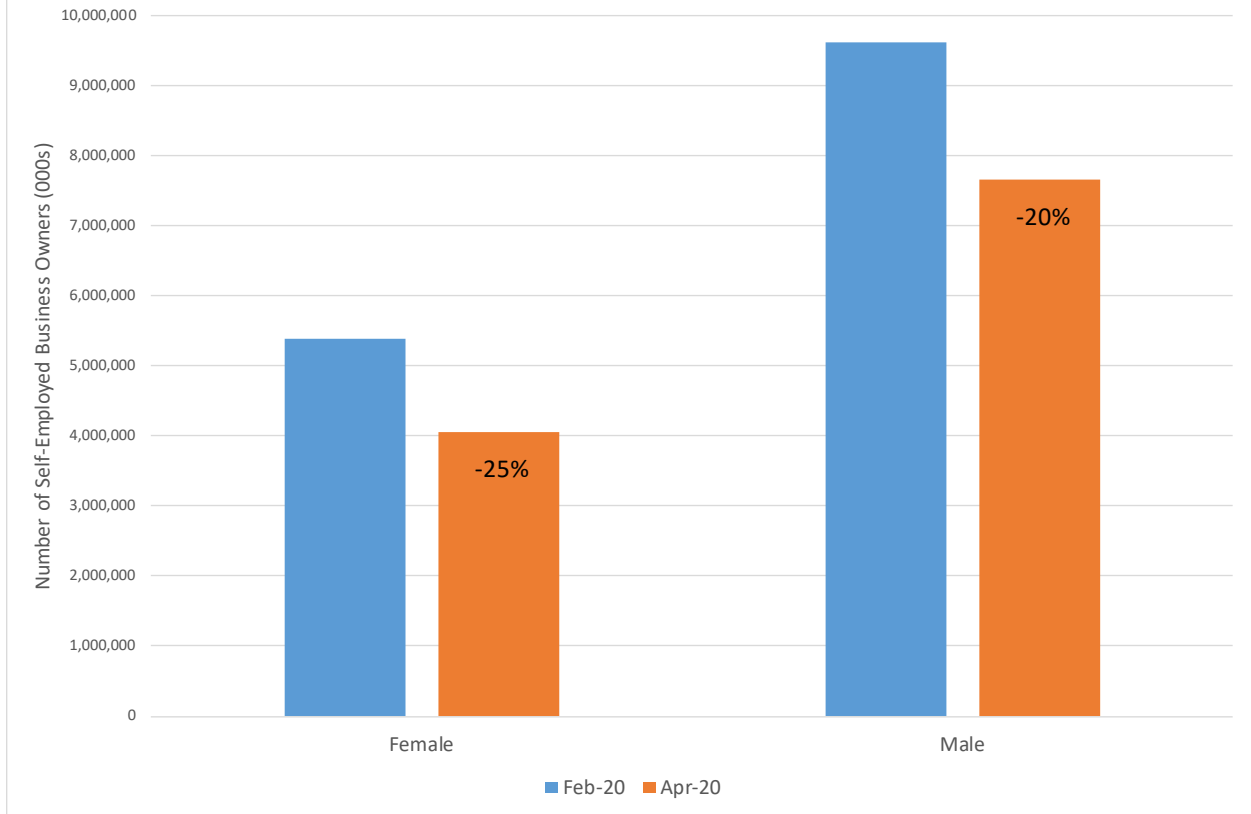
**Figure 2: Number of Self-Employed Business Owners before and after COVID-19**



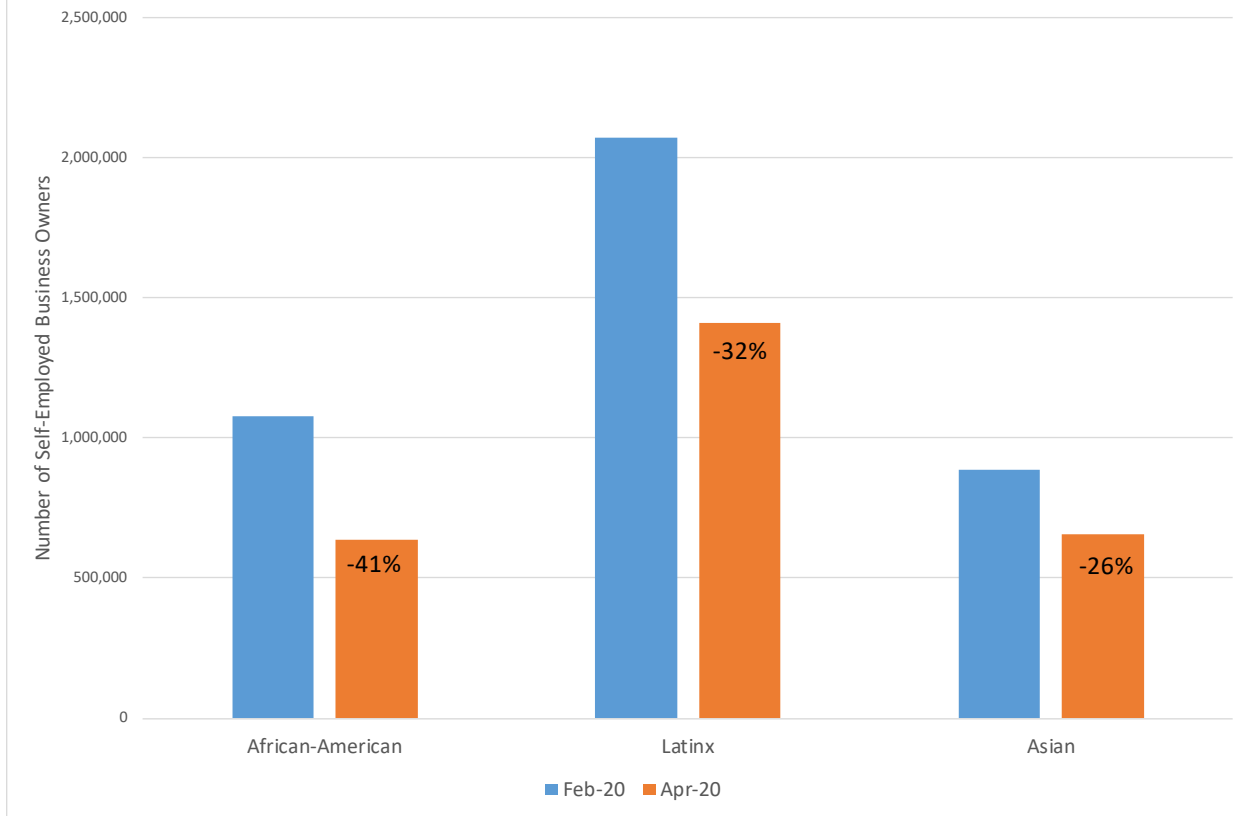
**Figure 3: Number of Self-Employed Business Owners before and after COVID-19 (Corporation Status)**



**Figure 4: Number of Self-Employed Business Owners before and after COVID-19 (Gender)**



**Figure 5: Number of Self-Employed Business Owners before and after COVID-19 (Racial Minority Groups)**





**Figure 6: Number of Self-Employed Business Owners before and after COVID-19 (Immigrant Status)**

