

DISCUSSION PAPER SERIES

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The Loss and Gain of Startups in the U.S.
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ABSTRACT

A Tale of Two Startups: The Loss and Gain of Startups in the U.S. Economy in the Pandemic*

The COVID-19 pandemic delivered an unprecedented shock to business entry, with sharply contrasting effects on different types of startups. Using newly constructed administrative data from the Comprehensive Startup Panel covering the universe of U.S. startups, we provide the first official numbers of the pandemic's impact on employer and nonemployer startup dynamics. Nonemployer startup formation declined substantially in 2020, while employer startups unexpectedly increased. Survival outcomes also diverged: nonemployer startup survival dropped markedly, whereas employer startup survival remained largely stable. These findings reveal a pronounced compositional shift and underscore the importance of designing policies tailored to nonemployer startups in economic crises.

JEL Classification: L26, E32, M13

Keywords: entrepreneurship, startups, employers, nonemployers,
COVID-19, pandemic, survival, resilience

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1 Introduction

COVID-19 and the widescale policy response created the largest sudden disruption to health, work, education, and commerce possibly ever. Large losses to business activity, earnings, and sales have been documented in survey, industry, and state administrative data ([Bartik et al., 2020](#); [Bohn et al., 2020](#); [Desai and Looze, 2020](#); [Fairlie, 2020](#); [Farrell et al., 2020](#); [Kim et al., 2020](#); [Fairlie and Fossen, 2022](#)). Historically, macroeconomic crises have been associated with sharp declines in new business formation. These patterns raised concerns that the pandemic could lead to a collapse in business activity. Early evidence confirmed a sharp contraction. In April 2020, the number of active business owners in the U.S. dropped by 22 percent—the largest decline on record ([Fairlie, 2020](#)). At the same time, business applications for new firms fell substantially in March and April 2020 as lockdowns took effect ([Haltiwanger, 2022](#)).

The full implications for business creation and startup survival, however, are not well known. Most early indicators—such as business applications and surveys—captured intent and short-run activity, but not the realized creation and survival of startups across the entire economy. In particular, a gap remains in understanding how the pandemic affected different types of startups. New businesses can take the form of employer startups (businesses that hire employees) or nonemployer startups (businesses without employees). Nonemployer firms account for roughly 89 percent of all startups in the United States ([Fairlie et al., 2025](#)), yet published statistics using the Longitudinal Business Database (LBD) or Business Dynamics Statistics (BDS) focus only on employer businesses and ignore nonemployer startups. Moreover, for employer startups these statistics often misdate the true birth year because they do not account for a the possibility of a prior nonemployer phase. Many extremely successful businesses started with no employees.

Using newly created administrative panel data compiled from underlying U.S. Census Bureau business registry information, we provide the first official numbers on the impacts of COVID on startup formation and survival that include all business entities. The Comprehensive Startup Panel (CSP) covers the universe of startups in the U.S. economy and was only recently created to study startup job creation and survival from 1995 to 2018 ([Fairlie et al., 2023](#)), and it has now been extended through 2021. Statistics on startup numbers and survival that include the universe of business entities tracked by the U.S. Census Bureau are not published. Instead, we generated these statistics using the restricted-access version of the CSP at UC Berkeley’s Federal Statistical Research Data Center.

In this short descriptive note, we present the findings from the CSP on early impacts of COVID. During the pandemic, we find that the U.S. economy missed out on roughly 700,000 business startups without employees, and unexpectedly gained roughly 80,000 business startups with employees in the first year of the pandemic. We also examine survival and find that nonemployer startup survival rates dropped sharply whereas employer startup survival rates remained roughly constant.

2 Methods

We analyzed startup numbers and survival rates based on the universe of business entities tracked by the U.S. Census Bureau using the Comprehensive Startup Panel (CSP), a novel restricted-access administrative dataset, which was developed by [Fairlie et al. \(2023\)](#) and can be accessed at the Federal Statistical Research Data Centers. The CSP integrates two core U.S. Census Bureau sources: (i) the Longitudinal Business Database (LBD), which covers all non-farm employer establishments from 1976 onward, and (ii) the Integrated Longitudinal Business Database (ILBD), which covers nonemployer establishments (quinquennially from 1977–1992 and annually thereafter). The integration uses revenue activity to identify business births and provides harmonized measures of job creation and survival for all startups. A key innovation of the CSP is that it links the employer and nonemployer universes, allowing us to observe nonemployer startups and to capture the pre-employment years of employer startups. This linkage yields more accurate startup birth dating and enables each annual cohort to be followed longitudinally.

We report formation and survival for employer and nonemployer startups. The data on employer startups from the LBD refer to March of a given year, whereas the data on nonemployer startups from the ILBD are based on tax records for a given calendar year. Although cases of COVID in the U.S. date back to February 2020, the social distancing restrictions that shut down many businesses did not start until the end of March. Therefore, we refer to 2020 as before the pandemic for employers and as during the pandemic for nonemployers. Survival by cohort is measured as year-to-year survival rates from year $t-1$ to year t conditional on survival until year $t-1$.

Many nonemployer business entities are consulting, contracting or side-gig activities instead of more growth-oriented startups. To address the potential concern about overcounting the number of nonemployer startups, in additional analyses we follow [Fairlie et al. \(2023\)](#) and remove all nonemployers that do not have employer identification numbers (EINs) from the

nonemployer counts. Nonemployers with EINs typically plan to hire or incorporate in the future, so this attribute can serve as an indicator of more formal and potentially growth-orientated startups.

3 Results

COVID led to both a major bust and boom in business formation in the country depending on the type of startup (Fig. 1). Total startups initially contracted during the pandemic, but the aggregate downturn masked a divergence between nonemployer and employer startups. The number of nonemployer startups plummeted by 693,000 from 5,021,000 in 2019, the year before the pandemic, to 4,328,000 in 2020, the first year of the pandemic. Using average growth rates in prior years, the expected number of nonemployer startups lost off prior trends is even 855,000. However, the decline did not last. The U.S. economy experienced a major rebound in nonemployer startups the following year. In 2021, this number increased by 627,000, which nearly wiped out all of the losses in the first year of the pandemic.

Next, we distinguish between nonemployer startups with and without EINs. We find that nonemployer startups with EINs decreased by 265,000, while those without EINs decreased by 428,000 in the first year of the pandemic (Fig. 2). Thus, even after excluding less growth-oriented nonemployers without EINs, there remains a substantial decline in nonemployer startup activity, highlighting that the pandemic also severely affected more formal and potentially growth-oriented nonemployer startups. By 2021, both EIN and non-EIN nonemployers rebounded, with those without EINs driving much of the resurgence.

In contrast, startups with employees experienced a surprising boom during the first year of the pandemic. As shown in Fig. 1, the number of employer startups increased by 77,000 from prior to the pandemic to roughly one year after the pandemic, as there were 483,000 employer startups in March 2020 growing to 560,000 employer startups in March 2021, representing a 16 percent increase. The projected gain in the number of employer startups adjusting for pre-trends is 100,032. This surge is remarkable, as employer startup formation typically falls during severe economic contractions.

The pandemic also had a large impact on survival rates among new businesses started prior to the pandemic. Fig. 3 shows conditional year-to-year survival rates by cohort. The U.S. economy lost many new nonemployer businesses due to COVID. Survival rates dropped precipitously for every startup cohort. For the cohort of nonemployer startups that began in

2019, only about 45 percent survived into 2020. By comparison, roughly 55 percent of nonemployer startups survived one year in pre-pandemic cohorts. For the 2018 startup cohort the second-year conditional survival rate, which is through 2020, was 67 percent compared with an average second-year conditional survival rate of roughly 78 percent for previous cohorts before the pandemic. For all previous nonemployer startup cohorts there is a clear drop in conditional survival rates in 2020 from pre-pandemic levels.

This overall pattern remains consistent when we separate survival rates for nonemployer startups with and without EINs (Fig. 4). While both groups experienced sharp declines during the pandemic, the survival rate dropped more significantly for nonemployers with EINs. The conditional survival rate averaged over the six youngest cohorts fell for nonemployer startups without EINs from 82 percent in 2019 to 71 percent in 2020. In comparison, the survival rate for nonemployer startups with EINs declined from an average of 88 percent in 2019 to 73 percent in 2020. This result highlights that even more formalized nonemployer businesses were substantially affected by the pandemic.

Employer startups exhibited more resilient survival patterns through the pandemic. COVID only reduced survival rates for the cohort starting just prior to the beginning of the pandemic, it did not reduce conditional survival rates across all cohorts (Fig. 3). The 2020 employer startup cohort had a 90 percent survival rate to 2021. All previous employer startup cohorts had a higher first-year survival rate averaging roughly 95 percent. Conditional survival rates from 2020 to 2021 for previous startup cohorts are on par with similar follow-up year survival rates prior to the pandemic.

4 Discussion

The importance of startups for economic growth, knowledge spillovers and innovation is well documented ([Audretsch et al., 2006](#); [Baumol and Strom, 2007](#); [Reynolds, 2007](#); [Kerr and Robert-Nicoud, 2020](#)). We find that there was a “tale of two startups” in which nonemployer startups were hammered by COVID but employer startups were mostly unaffected. Although beyond the scope of this short descriptive report, one potential reason might be that aid towards small businesses was targeted to employer startups early in the pandemic when it mattered most. The Paycheck Protection Program (PPP), launched at the start of the pandemic, provided capital to retain employees. The first round of PPP funds was rushed out to small businesses with employees in April 2020, and funds were exhausted within two weeks ([Mills, 2024](#); [Rouse, 2024](#)). The PPP likely reduced closure rates among new businesses

with employees, but nonemployer startups did not qualify for PPP funds in the first year of the pandemic. By early 2021, changes were made to the PPP to include nonemployers. As a result, three times as many startups received PPP loans in 2021 in comparison to 2020. These changes likely contributed to the recovery in nonemployer startups observed in 2021 (U.S. Small Business Administration, 2025).

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Figures

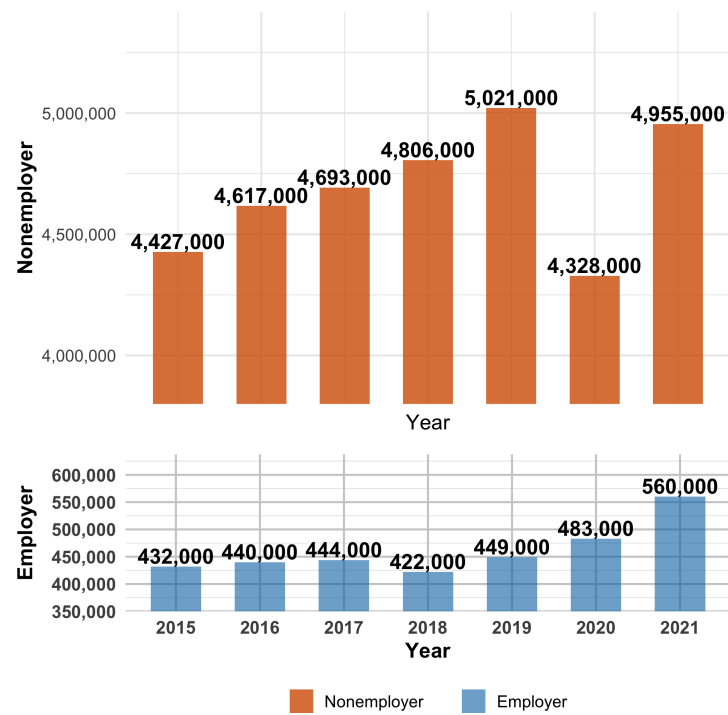


Figure 1: Number of Employer and Nonemployer Startups by Year

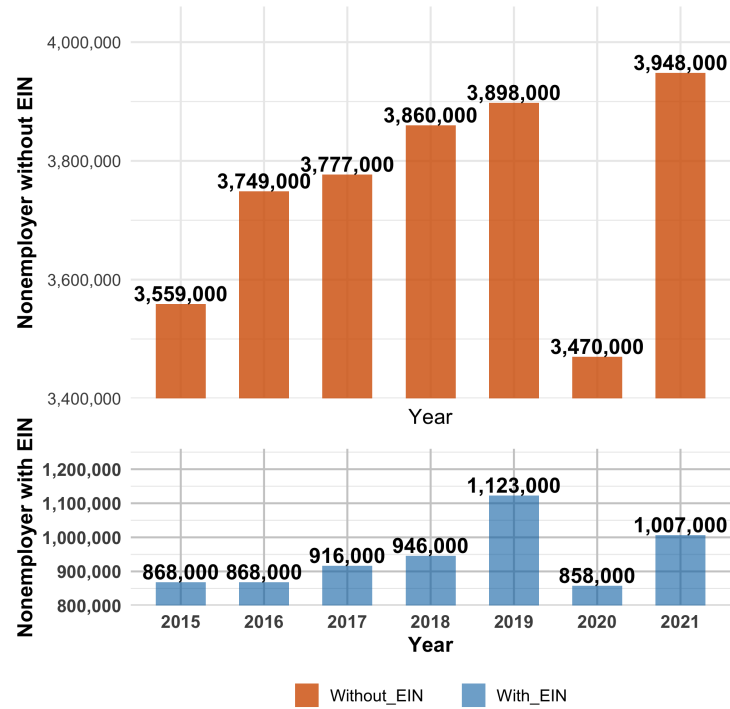


Figure 2: Number of Nonemployer Startups With and Without EINs by Year

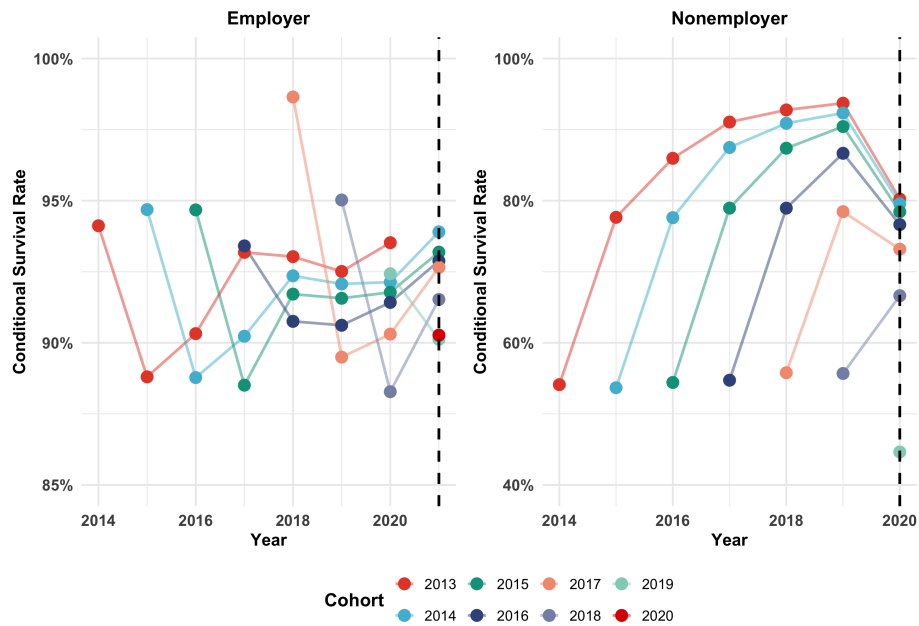


Figure 3: Annual Conditional Survival Rates by Follow-up Year and Startup Cohort: Employer and Nonemployer Startups

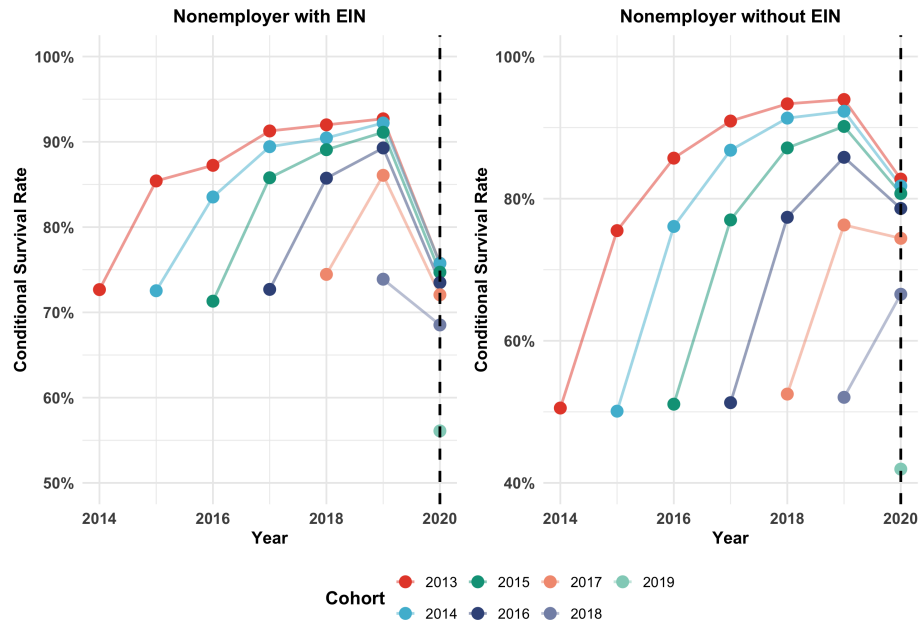


Figure 4: Annual Conditional Survival Rates by Follow-up Year and Startup Cohort: Nonemployer Startups (With vs. Without EINs)