Business owners and the self-employed: thirty-three million (and counting!)*

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Abstract

This paper documents efforts at the U.S. Census Bureau to develop a comprehensive, longitudinally linked database of self-employment jobs and associated business entities to create measures of change over time in business and job activities. We use these linkages to produce three new sets of statistics specifically about nonemployer business activity, meaning self-employment work involving only the business owner and no paid employees. First, we show how many people transition to and from self-employment and wage and salary jobs, and how much simultaneous job holding happens during these transitions. Second, we describe what types of nonemployer entities enter and exit each year and as well as how many nonemployer businesses transition from one type of legal form of organization to another. Finally, we link people to nonemployer businesses and examine how many jobs start and end each year by characteristics of both the owners and their businesses.

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1 Introduction

The number of U.S. nonemployer business entities has surged in recent decades. Such businesses include self-employment by independent contract workers, gig workers, freelancers, and business owners without employees—in other words, work that is not part of employment in a wage and salary job (Abraham et al., 2019, 2021). Nonemployers are a unique type of economic activity because of their dual nature. They are both a type of job and a type of business, albeit sometimes a very loosely defined one. While tens of millions of people in the U.S. receive income from this type of work, they are often missing from statistics on the U.S. workforce, especially ones that describe labor market and business dynamics.

This gap represents a growing blind spot in our capacity to monitor the health and vitality of the labor market and the ability of the economy to support the formation of new businesses. With current public statistics, it is not possible to know, for example, what share of these informal jobs are held by workers who persistently operate outside of conventional wage and salary work, nor how this share changes over time. Similarly, current statistics do not reveal across-time flows of workers between wage and salary work and self-employment, between non-working and self-employment, and they do not shed light on across-time changes in the pool of wage and salary workers moonlighting as gig workers. Research conducted using restricted-access microdata at Census suggests that these dynamics are quite large with nearly half of self-employment beginning or ending in each year (Hyatt et al., 2021).

This paper documents efforts at the U.S. Census Bureau to develop a comprehensive, longitudinally linked database of self-employment jobs and associated business entities (first outlined in Goetz et al., 2017) to create measures of change over time in business and job activities. These dynamics are unique because they involve decisions by individuals to change their employment arrangements in a way that also changes the composition of operating businesses. Our linkages enable us to produce three new sets of statistics. First, statistics describing person dynamics highlight how many people transition to and from self-employment and wage and salary jobs and how much simultaneous job holding happens during these transitions. Second, statistics on business dynamics describe what types of nonemployer entities enter and exit each year and as well as how many nonemployer businesses transition from one type of legal form of organization to another. Finally, statistics on job level dynamics link people to nonemployer businesses and examine how many jobs start and end each year

by characteristics of both the workers and the business.

To achieve these goals, we build upon decades-long efforts at the Census Bureau to use administrative records to produce detailed statistics characterizing workforce and business dynamics including the Quarterly Workforce Indicators (QWI) and the Business Dynamics Statistics (BDS). We begin with rich administrative data originating from nonemployer business tax filings by sole proprietors, partnerships, S corporations, and C corporations. These business entities use either the owner's tax identifier (PIK) or the business's tax identifier (EIN) and can in principle switch between the two. This creates the need for careful longitudinal linking that allows for changes in legal form of organization over time. We refine a nonemployer firm identifier established in the Integrated Longitudinal Business Database (ILBD) by Davis et al. (2009) to create longitudinal linkages of nonemployer businesses over time and to create an improved nonemployer database called the Longitudinal Business Database for Nonemployers (LBD-NE).

At the same time, we create a database of self-employment jobs which matches people to the nonemployer entities that they own. These people-business links come from IRS filings: 1040 Schedule C filings for sole proprietors, and Schedule K-1 filings which report the income of owners of partnerships and S corporations. The individuals in this database are then matched to a newly developed infrastructure on wage and salary jobs derived from both Unemployment Insurance (UI) wage and W-2 records, allowing us to see the full labor market participation of people who are self-employed.[1] The final database is called the Self-Employment Job Frame (SEJ).

Both the LBD-NE and SEJ are part of a broader Census initiative to capture the full universe of people, businesses, and jobs in a manner that facilitates linkages between them. In this case, combining the LBD-NE and the SEJ produces uniquely rich data with characteristics of individuals, businesses, and jobs. The longitudinal business identifier allows us to measure the number of nonemployer businesses starting and ending in a year. It is also essential for defining when self-employment jobs start and end, which may be concurrent with the beginning or ending of business operations, but can also be separate as partners enter or leave on-going businesses. The unique person identifier allows us to attach summary information about a person's other labor market activities beyond self-employment to statistics on self-employment jobs.

[1] UI wage records are collected for all private sector wage and salary workers as well as UI-covered employees of state and local governments in order to assess payroll taxes for state UI programs. W-2 records are annual records of wage and salary payments, which employers report to the IRS.

This paper provides a description of how we create the LBD-NE and the SEJ and provides a first set of statistics on person, business, and job flows. At the person level, we find 33 million people with some type of self-employment reported on tax forms in 2019. Dual self-employment - wage and salary workers have grown between 2014 and 2019 as a share of the overall workforce, while the share of wage and salary only and self-employment only have fallen. By 2019, 9.5% of workers had both types of employment compared to 7.8% who had just self-employment. However this differs substantially by age. Workers under age 35 were less likely to have any self-employment compared to older workers but among those who were self-employed, they were more likely to be dual job holders. Workers age 55 and older had the highest shares of self-employment and were the most likely to be only self-employed. Among those not working in 2018 but who found employment in 2019, approximately 15% were self-employed only and another 3% were dual-employed, showing this to be an important path to labor market entry. But self-employment by itself is not as stable as wage and salary employment. Among those who only had self-employment in 2018, more than a quarter changed their status in 2019, with the majority of self-employment exiting workers transitioning back to not working. In contrast, for wage and salary only workers in 2018, 90% of them were still in this type of job in 2019.

On the business side, we find that nonemployer businesses are much more dynamic than employer businesses. Well over one third of sole proprietors active in a given year will exit at the end of the year. At the same time, among these active sole props, a third of them will be new entrants operating for the first time. These rates are lower for other types of nonemployer businesses. The most stable group, partnerships, has entry and exit rates in the 12-15% range. Still among employer businesses, entry and exit rates did not exceed 8-9% during the 2014-2019 time period. Much of the dynamics of businesses entering and exiting seems to happen on the nonemployer margin.

Our statistics on self-employment jobs highlight that this type of work that requires a person to be both a worker and a business owner is often not the person's only economic activity. When considering only the self-employed, over 50% of owners have a wage and salary job in a year when they are also running a nonemployer business. In particular, owners of entering or exiting sole proprietorships without EINs are especially likely to also have wage and salary employment. Many business owners also have multiple self-employment jobs; however, these are particularly concentrated among those who operate partnerships or S corporations, where 62% of owners have other forms of self-employment activity in the same year. We find that sole proprietors are much more likely to leave

other self-employment than they are to add additional self-employment, while owners of partnerships and S corporations are slightly more likely to add—rather than leave—additional self-employment.

Our efforts draw on findings from a number of recent studies that utilize administrative records on business income. Several of these papers provide descriptive evidence using administrative records on business income, including Goldschlag et al. (2017); Collins et al. (2019); Lim et al. (2019); Garin et al. (2020, 2022, 2023, 2024); and Hyatt et al. (2021). Abraham et al. (2021, 2019, 2021, 2024) and Eggleston et al. (2022) utilize linked survey and administrative records data to measure self-employment, and compare survey responses to administrative records from those same respondents.

Our findings demonstrate the benefits of enhancing published statistics on nonemployer businesses by providing information on their dynamics.[2] The central role of reallocation among productivity-enhancing economic growth has been established by among many others—Foster et al. (2001); Haltiwanger et al. (2013); and Decker et al. (2014)—but these authors have only been able to consider employer businesses. Our paper, building on the earlier efforts of Davis et al. (2009); Goetz et al. (2017); and Hyatt et al. (2021), provides the most comprehensive evidence to date on the dynamics of reallocation across nonemployer businesses.

This paper proceeds as follows: Section 2 explains how we assemble the LBD-NE and SEJ data; Section 3 provides proto-type self-employment dynamic statistics and a summary of findings; Section 4 concludes with further development plans for this infrastructure project.

2 Data

2.1 Creating a Longitudinal Business Database for Nonemployers (LBD-NE)

While there are already many public statistical products concerning the universe of employer businesses, less attention is paid to the more than 30 million business entities that have no paid employment in a given year. These include sole proprietorships (including single-owner LLCs), partnerships, S corporations, and C corporations. While they do not hire employees, these firms can generate significant levels of revenue and other economic activity. Additionally, they usually represent a "job"

[2]The Nonemployer Statistics (NES) from the Census Bureau tabulate the number of businesses without any employees and can be used to demonstrate the strong growth in nonemployer businesses. In this paper, we utilize the underlying microdata to measure underlying flows, transitions, and reallocation, which are not currently available in the published NES.

for the owner(s) who provide their labor to the business for its management and day-to-day operation. The level to which this is the case may vary by legal form of organization. While the owner of a C corporation might be more likely to engage in a passive ownership relationship, the nonemployer sole proprietor is nearly by definition the only person who is engaged in working for the business. Therefore, the tracking of these businesses is very closely related to the measurement of self-employment jobs, a topic we will also explore later in this chapter.

In order to track these business entities over time, we aim to create a longitudinally linked universe of all nonemployer businesses in the U.S. economy. Our primary goal is to create a nonemployer firm identifier which distinguishes between unique nonemployer firms across the entire time series. This effort results in a product that we call the Longitudinal Business Database for Nonemployers (LBD-NE), with the eventual objective of creating a publicly released data product reporting statistics derived from this database. It also creates an infrastructure onto which additional information about business owners can be readily attached.

The efforts we describe here are not the first attempt to measure the nonemployer universe, either cross-sectionally or longitudinally. The Census Bureau currently publishes the Nonemployer Statistics (NES), reporting annual counts and revenue levels of nonemployer businesses by geography and industry. The related Nonemployer Statistics by Demographics (NES-D) product also assigns owner characteristics to the firms and reports statistics based on demographic categories. The statistics are cross-sectional in nature, however, and do not attempt to measure the dynamics of the nonemployer firms.[3]

The Integrated Longitudinal Business Database (ILBD), originally developed in 2007 and based on the same source data as the NES, was the Census Bureau's first attempt to track nonemployers longitudinally and has been available for use by researchers at Federal Statistical Research Data Centers (FSRDCs) (Davis et al., 2009; Goetz and Kroff, 2021). The firm-level linking in the ILBD relies primarily on Social Security Numbers (SSNs)—which are replaced by a Protected Identification Key (PIK)—for sole proprietorships, and Employer Identification Numbers (EINs) for all other legal forms. These same identifiers were also used to link the universe of nonemployers to the Longitudinal Business Database of employer businesses, which researchers have used to track the life cycle of businesses from nonemployer startup to mature employer business (Fairlie et al., 2023).

[3]The NES and NES-D data can be found on the official U.S. Census website: **https://www.census.gov/programs-surveys/nonemployer-statistics.html.**

The LBD-NE builds upon the ILBD in order to address some of its limitations. While a useful starting point, the ILBD represents an incomplete view of the dynamics in the nonemployer universe because it suffers from several limitations in its linking methods. First, it is known that business identifiers change for many reasons. Ownership of a sole proprietorship may change hands between individuals, including between spouses who were once on the same tax form. Moreover, many sole proprietors own multiple businesses concurrently, which the ILBD was unable to distinguish between. For EIN-based businesses such as partnerships and S corporations, EINs may change due to changes in legal form, changes of ownership, and several other administrative reasons related to federal or state laws. A business might acquire or change an EIN as they hire their first employee, which makes it particularly difficult to detect the transition of the business from the nonemployer to employer spheres. Such transitions are often accompanied by a change in the legal name of the business, further complicating any attempt to link the business over time.

The goal of the LBD-NE can thus be described as linking the nonemployer universe in a more comprehensive and systematic way than ever before, both by employing more sophisticated data matching algorithms and by incorporating new data sources. Our efforts result in many improvements over previous iterations, which will afford us the data integrity to eventually create a public-use data product—rather than a research data set behind a confidential firewall. First, we implement fuzzy matching algorithms using name and geographic information to detect businesses that remain in operation but change their numerical identifier (like PIK or EIN) between years. Secondly, we incorporate new data sources that were not available in prior versions of the ILBD. Crucially, we have acquired detailed information from the IRS Form K-1, which links the individual owners of a partnership or S corporation to their business. This allows us to track transitions of a sole proprietorship that may have only been identified with its PIK in preceding years but then acquires an EIN as it reorganizes into a partnership or S corporation (or vice versa).

The LBD-NE not only represents an improvement to the previous ILBD and creates an infrastructure on which publicly releasable data can be produced, it also represents a piece of a larger Census-wide effort to create a unified "frame" for all data products. As described by the Census Bureau, the Frames Program is based on creating a single version of infrastructure datasets that form the basis for all surveys and programs.[4] Each "enterprise frame" is organized around one of four founda-

[4]For more details, see https://www.census.gov/about/what/transformation/maximizing-operational-efficiency/data-centric-business-ecosystem/frames-overview/frames.html.

tional units of observation: addresses, businesses, jobs, and people. The LBD-NE fits into this context by allowing this large set of businesses to not only be longitudinally linkable but also integrated with the complete employer universe. Additionally, beyond the business frame the LBD-NE also provides a natural link to the jobs frame for the set of self-employed business owners of nonemployer businesses. Having a product that enhances the internal consistency of the larger census infrastructure is a key benefit of this effort.

Next, we describe in detail our creation of the LBD-NE infrastructure. As mentioned, the source data we use come directly from the Nonemployer Statistics program. The original raw data come from the Census Business Register, primarily based on IRS tax filings that are routinely shared with the Census Bureau. The large majority of records represent sole proprietors and are sourced from IRS Schedule C, which is filed annually with an individual's 1040 return. These cases include individuals, married couples, and single-owner LLCs (who are considered to be sole proprietorships for federal tax purposes). These records are identified by the PIK of the primary business owner (*PIK_owner*) and may also include an EIN if it is included on the Schedule C. Businesses falling into other forms of legal organization, namely partnerships and corporations, are identified directly by their EIN. These data come from 1065 and 1120 business tax filings like other employer businesses but have been deemed to have no paid employees in the given year. Some of these records have been cleaned and edited by Nonemployer Statistics Program, mostly to fill in incomplete information regarding geography and industry classification. Additionally, the nonemployer data include cases that were and were not tabulated for the official NES statistics. Specifically, NES does not tabulate cases where the net receipts of the business either total less than $1000, or exceed a certain dollar threshold which varies by industry. For the purposes of the LBD-NE, however, we retain all nonemployer business tax filings–including those not tabulated in the NES. Even though many have low revenue receipts, these business entities still represent a meaningful level of economic activity which required a tax filing. Additionally, any revenues they did generate represent a source of income for a self-employed business owner.

The next task is to attempt to link each nonemployer firm in consecutive years. First, for sole proprietorships we attempt to link from year to year based on the PIK of the primary business owner (or tax filer when owner information is unavailable). In the case of a unique PIK in year t and year t+1 this is straightforward, but there are many complicating factors. Firstly, many owners file multiple Schedule Cs in the same year, each representing a distinct sole proprietorship. In this case we select

between the multiple potential matches by the level of agreement in reported industry (expressed in 6-digit NAICS code), whether associated EINs (if any) match, and absolute difference in revenue (in that order of priority). We only retain a link across years if it matches on both PIK and 2-digit NAICS code. A second complication is due to the fact that when business owner information is unavailable (meaning we must rely on filer information), the filing individual may switch between the business owner and their spouse from one year to the next (when filing jointly). Therefore, if a link is not identified using the filer's PIK and reported industry, we match filer PIK to spouse PIK (and vice versa) across years.[5] We choose links based on the same order of priority as the previous step (i.e., industry, EIN, and revenue). For businesses primarily identified by their EINs—namely partnerships, S Corporations, and C corporations—linking on main business identifier is relatively straightforward. Since EINs for these businesses are unique in a given year, links are made by simply matching by EIN across adjacent years.

Some businesses may transition—or "reorganize"—from (to) a sole proprietorship to (from) an EIN-based business (i.e., partnerships, S corporation, and C corporation). For sole proprietorships, this necessarily means a change in main business identifier, since partnerships and corporations are identified by EIN. In order to track these more complex changes, we employ the use of EINs reported on Schedule C forms, as well as IRS Form K-1 information, which is filed to report the share of profits earned by each owner of a partnership or S corporation. Both of these pieces of information essentially provide links between the EINs of businesses and the PIKs of their business owners.[6] In the case of an EIN reported for a sole proprietorship whose PIK does not appear in the following year, we match the sole proprietor's EIN to the EINs of newly entering partnerships and corporations (and vice versa for exiting partnerships/corporations and newly entering sole proprietorships). Similarly, we also match the sole proprietor's PIK to the business owner PIKs found on the K-1 forms of newly entering partnerships and corporations (and vice versa for exiting partnerships/corporations and newly entering sole proprietorships). In both cases, we retain only the links that also match at the two-digit NAICS level. We perform both kinds of matches across adjacent years, as well as within a single year (note that a firm might reorganize in the middle of a tax year and have to make two separate tax filings). For the links found within a single year, we collapse the two businesses into one unique

[5]Note that it is also possible for both a filer and their spouse to each own a business (or businesses).

[6]A sole proprietor might have an EIN because they had employees in the past or because they needed one due to various licensing or business registration requirements according to federal or state law (such as forming an LLC).

record that can then be used for subsequent linking to adjacent years.

Finally, for records that are not linked in any of the previous steps, we employ a fuzzy matching algorithm using name and address information. This matching allows us to capture instances of typos or other errors in the PIK or EIN fields.[7] This is especially important for cases in which a Schedule C filer's typo in entering their SSN prevented a link across years. While comparing actual SSN values (as reported) might allow for the identification of minor typos across years without additional information, the fact that each year would be assigned completely independent PIKs means that additional information is required to make these links.

With a set of two-year business links in place, we next create a longitudinal history of each nonemployer business in order to assign it a unique business identifier. The resulting "wide file" shows the years that each firm is active, and the primary identifier used in the given year. Firms that reorganized in the middle of the year can have up to two different IDs for that year. Because our linking process described above only attempts to match firms between consecutive years, a firm that appears in one year but not the previous one may be either a true firm birth or else a reactivation of a previously existing business. To see whether it existed before, we look back in time up to seven years to see if the firm's primary identifier existed previously. If it does, we deem it to be the same business and place it in the same longitudinal record.[8] Once all of a firm's history is recorded on one row of observation, we can assign that business a unique longitudinal ID for each firm. This new identifier is referred to as the *LBDNENUM* and is unique for the business across all years of the database.

The final output file for the LBD-NE is an annual file called the LBDNE_[*YYYY*], listing all nonemployer businesses that are active in the given year. The *LBDNENUM* is included for linkage to any other annual file. The annual file contains a set of business-level characteristics that can be used for tabulation and research. While we do not report any particular business characteristics other than LFO in this chapter, future versions can include numerous data fields that are available from the tax data—including industry, geography, and revenue. The annual LBDNE_[*YYYY*] are the final infrastructure files from which we can tabulate our statistics, as reported later in this chapter. Further work will also be done to integrate this infrastructure with the employer universe, so that the LBD-NE can eventually be used in tandem with the Longitudinal Business Database (LBD). Many of the

[7] Similar to previous steps, we only retain links that also match at the 2-digit NAICS level.

[8] For a sole proprietorship, whose main identifier is a PIK, we make the additional requirement that it belong to the same NAICS 2-digit sector, in order to ensure it is a sufficiently similar business endeavor.

methods described in this section can also be used for linking between the two universes, and efforts are already underway to implement this process Luque and Novik (2024).

2.2 Combining the SEJ and LBD-NE

The SEJ is one component of a larger frame of jobs assembled at the U.S. Census Bureau from administrative records on both wage and salary and self-employment jobs. As noted, the SEJ covers work that takes place outside of formal employer-employee relationships, such as contract or 1099 work, gig jobs, or jobs associated with ownership of businesses. The SEJ itself includes all self-employment jobs that arise from ownership of sole proprietorships, partnerships or S corporations with or without paid employees and the LBD-NE is a key input into the SEJ that allows across-time linkage not just of owners but also of the businesses they own, when those businesses do not have paid workers. Because each unique combination of an owner and an owned business represents a "job" in the SEJ, the person ID of the owner and the longitudinal business ID from the LBD-NE uniquely identify each job in each year and make it possible to link these jobs across time.

To maintain consistency across business, worker, and job tabulations, the analysis presented in this paper includes only those self-employment jobs that are associated with ownership of businesses without paid employees. Thus, the LBD-NE and the portion of the SEJ used in our analysis are derived largely from the same administrative sources, though the two data products differ in their unit of observation (businesses vs. jobs) and their content (business traits and receipts vs owner traits and owner earnings).

We present product prototypes that group workers according to the types of work they do (wage and salary work, self-employment, or both) each year. Thus, to put self-employed workers and the jobs they hold in the context of the workforce more broadly, we include in our worker-level analysis all workers who have positive revenue from either nonemployer self-employment or from wage and salary work. We also present products that show job-level transitions and we use these same worker classifications to paint a richer picture of the workforce choices and dynamics of owners that underlie and are influenced by business entry and exit and transitions from one legal form of organization to another.

2.2.1 Data Sources

Wage and salary workers are identified each year as those receiving a W-2 from an employer or as having a job covered by a state Unemployment Insurance system (private sector and both local and state government) as well as some federal government jobs accessed through the Office of Personnel Management (OPM). These records are integrated in the U. S. Census Bureau's annual wage and salary Job Frame (Tucker et al., 2024).

Just as a job in the wage and salary Job Frame corresponds to one unique W-2 and/or UI record associating a person and a business in each year, each job record in the SEJ is derived from a business tax filing (such as a Schedule C) or from an information return such as a Form K-1.

2.2.2 Scope

The scope of the full SEJ corresponds to active sole proprietorships, partnerships, or S corporations from either the Longitudinal Business Database (for employer businesses) or from the LBD-NE (for nonemployer businesses). From this set, we limit included businesses to those for which at least one owner can be identified from among concurrent Schedule C or Form K-1 filings (or, in the case of employer sole proprietorships, from form SS-4 applications for an EIN) for any given year. For this paper, our discussion and results are limited to the set of self-employment jobs that are associated with businesses *without paid employees*—i.e., nonemployer self-employment.

2.2.3 Unit of observation

Each job record in the SEJ corresponds to one unique matching between an owner and an owned business. For example, a person driving for a rideshare service may report associated business receipts and expenses on a 1040 Schedule C. This filing represents one job. This same person may also operate as an independent lawn care business jointly with their spouse and, in theory, should report this activity on a second Schedule C. This reporting represents a second self-employment job for one owner and a separate self-employment job for their spouse.[9] Thus, each self-employed worker can (and many do) have multiple self-employment jobs in the SEJ. Similarly, many businesses may be associated with

[9]In this example where a couple is jointly operating a business, technically each spouse would be an owner of their own separate sole proprietorship for tax purposes—i.e., between the couple they would own two businesses, not one (unless they jointly owned the business under a single EIN, in which case they would not be reporting this activity on their individual Schedule Cs).

multiple ownership jobs—one for each owner in each year. For partnerships, each separate K-1 filed on behalf of each stake-holding owner represents a unique self-employment job.

2.2.4 Record Content and Linking to Other Sources

Each record (unique job) contains an owner PIK and a longitudinally consistent business identifier (LBDNENUM) for linking owners and jobs across time. The final file also contains ownership earnings and some basic business detail (though this information is not utilized in our analysis). The PIK makes it possible not only to link workers and jobs across time but also to add worker demographic characteristics. For example, we link by PIK to obtain worker date of birth derived in part from the Numident. These data in turn originate from applications for SSNs. Worker date of birth is used to assign workers to broad age groupings.

3 Results

3.1 Workforce Composition Dynamics

These administrative records on wage and salary and self-employment earnings receipt offer insight into the composition of the workforce in each year. For this reason, we have developed a prototype set of statistics where the unit of observation is a worker and the scope covers all workers engaged in either wage and salary or non-wage-and-salary (in this version nonemployer) work. Basic unknowns such as the share of the workforce engaged in non-wage-and salary-work each year, overall and for different groups of workers (here, we focus on age groupings), are easily answered. Because the underlying data permit workers to be linked across time, these same statistics group workers according to the types of work they do in each of two consecutive years. In this way, these statistics enable users to track across-time flows of workers in and out of the workforce and across different types of work. These dynamic groupings permit an accounting for observed changes in workforce composition. For example, they provide ready answers to questions like: what fraction of young workforce entrants use non-wage/salary work as a pathway into the labor market as opposed to wage and salaried work, what fraction of workers persistently combine earnings from both wage and non-wage work, and what fraction of older workers move from formal wage and salary work into less structured self-employment.

Table 1: 2018/2019 Worker Earnings Source Transition Matrix

	Not Working	Self-employed only	Have Wage and Salary Jobs Only	Have earnings from both Wage and Salary and Self-employment Jobs	Total
(a) Total transitions (millions)					
Not Working		2.14	11.56	0.41	14.11
Self-employed Only	2.42	10.78	0.51	0.95	14.67
Have Wage and Salary Jobs Only	9.50	0.59	139.47	5.46	155.02
Have Both Wage and Salary and Self-employment Jobs	0.39	1.23	5.21	11.08	17.92
Total	12.32	14.74	156.75	17.90	
(b) Transition rates (percent of origin total)					
Not Working		15.14%	81.92%	2.94%	100.00%
Self-employed Only	16.53%	73.51%	3.48%	6.48%	100.00%
Have Wage and Salary Jobs Only	6.13%	0.38%	89.97%	3.52%	100.00%
Have Both Wage and Salary and Self-employment Jobs	2.20%	6.89%	29.09%	61.82%	100.00%

Notes: The top panel shows count in millions of workers. The bottom panel transforms these into row percents.

3.1.1 A Sample Table

A worker may be observed as one of three types: those receiving wage and salary earnings (W workers), those receiving self-employment earnings (S) derived from a working as a sole-proprietor, a partner, or the owner of an S corporation without other paid employees, and those with both types of earnings ($BOTH$). These data also enable us to follow workers across time. Using these linkages, we further characterize workers based on type transitions between the two consecutive years. In each year, a worker may be one of the three types (W, S, or $BOTH$). A worker not working in year $t-1$ but observed in one of these three categories in year t is identified in year $t-1$ as "Not Working" and represents a labor market entrant. Similarly, those with an observed earnings category in year $t-1$

Table 2: Workforce Composition in 2014 and 2019

	2014		2019	
Workforce Composition	Count	Percent	Count	Percent
Self-employed Only	14.1	7.94%	14.7	7.78%
Have Wage and Salary Jobs Only	148	83.18%	156.7	82.76%
Have Both Wage and Salary and Self-employment Jobs	15.8	8.88%	17.9	9.45%
Total	177.9	100.00%	189.4	100.00%

Notes: Counts are shown in millions of workers. All numbers are derived from the top panel of Table 1.

but not in t are identified as "Not Working" in year t and represent labor market exiters between $t-1$ and t. Table 1 serves as a prototype for annually produced statistics and can be produced separately for each pair of years. Panel (a) of Table 1 shows counts of workers in each combination of 2018 and 2019 workforce categories. For example, 9.5 million workers are observed to have a wage and salary job only in 2018 but are not observed working in 2019. Table 1(b) gives this count as a percent of the 2018 category. The 9.5 million workers who stop working by 2019 are over 6.1 percent of all W workers.

3.1.2 Workforce Composition

Table 2 is derived in part from panel (a) of Table 1 (the numbers for 2014 are sourced from a similar table produced for 2014/2015). Table 2 shows the composition of this administrative-records-derived workforce in 2014 and 2019, the beginning and end years for our time series. In each year, workers with only wage and salary earnings (W workers) account for the vast majority of all workers (roughly 83 percent). Workers who derive all their earnings from self-employment (S) account for slightly less than eight percent of all workers, and those receiving BOTH account for roughly nine percent.

A comparison of the count of S workers and BOTH workers reveals that more than half of workers with any self-employment earnings in each year also receive wage and salary earnings. As a fraction of the much larger wage and salary workforce, BOTH workers account for a substantial subgroup - roughly 11 percent of wage and salary workers each year also have self-employment earnings.

Comparing 2014 and 2019 workforce composition totals, though the count of W workers grows

Table 3: Workforce Composition By Age

Age Composition	Workers Under 35	Workers 35 to 54	Workers 55 and older	total
(a) Shares over time				
2014	36.1%	40.5%	23.4%	100.0%
2018	35.5%	39.2%	25.3%	100.0%
(b) 2014 workforce composition				
Self-employed Only	3.0%	6.5%	11.8%	
Have Wage and Salary Jobs Only	90.5%	83.0%	77.6%	
Have Both Wage and Salary and Self-employment Jobs	6.5%	10.5%	10.6%	
Total	100.0%	100.0%	100.0%	
(c) 2018 workforce composition				
Self-employed Only	2.7%	6.3%	12.0%	
Have Wage and Salary Jobs Only	89.9%	82.3%	77.4%	
Have Both Wage and Salary and Self-employment Jobs	7.3%	11.4%	10.6%	
Total	100.0%	100.0%	100.0%	

Notes: All numbers are derived from tables resembling Table 1 constructed separately for each age group.

by nearly ten million, the share of these workers as a proportion of the overall workforce actually falls by over 0.4 pp during this time period. The share of workers with only S earnings declines slightly also. In contrast, the count of BOTH workers grows by more than 13 percent between 2014 and 2019. As a share of the overall workforce, this group grows by nearly 0.6 pp.

We next group workers by broad age groups. In each year, a worker is either under age 35, age 35-54, or age 55 or above. Though not shown in this paper, we have produced panel (a) or Table 1 separately for each pair of years from 2014–2019 and for each of these 3 age groups. Panel (a) of Table 3 shows the age composition of the workforce in 2014 and 2018. For each age group, panel (b) of Table 3 shows workforce composition.

Table 3 shows a 2014 workforce composed largely of young and prime aged workers but a marked

Table 4: 2018-2019 Entry and Exit Rates, Overall and By Age (%)

	All Ages		Workers Under 35		Workers 35 to 54		Workers 55 and up	
	Entry	Exit	Entry	Exit	Entry	Exit	Entry	Exit
Any Work	7.5	6.5	11.4	5.3	4.6	4.4	4.9	10.3
Wage and Salary	8.0	7.0	11.9	5.9	5.0	4.8	4.9	10.5
W and Salary Only	11.0	10.0	15.1	9.4	8.5	8.4	7.8	13.0
Self-employment	26.0	26.0	44.2	35.4	26.1	25.5	16.8	22.8
Self-employment Only	27.0	26.0	50.0	39.1	29.5	27.7	20.9	24.6
Both	38.0	38.0	54.6	46.6	35.6	35.7	25.1	33.8

Notes: All numbers are derived from tables resembling Table 1 constructed separately for each age group.

(near 2 pp) growth in the percent 55 and older by 2018. Prime aged workers in 2014 are over twice as likely (6.5 percent) as young workers (3 percent) to derive all their 2014 earnings from self-employment and older workers are nearly twice as likely again (11.8 percent) as prime aged workers to be in this workforce category. This pattern holds up over time. Similarly, the likelihood that a worker derives all their earnings from wage and salary work is high for all age groups but declines notably with age, with a 13 percentage point gap in this share among older and younger workers. Finally, workers 35 and older are far more likely to have earnings in the same year from both wage and salary work and from self-employment. Comparing the workforce composition for each age group between 2014 and 2018, the most notable shift occurs in the percentage of workers with both wage and salary and self-employment. This number grows by nearly a full percentage point among young and prime aged workers.

3.1.3 Entry, Exit, and Persistence

Returning to the transition numbers from Table 1 (panels a and b). we find several noteworthy patterns. First, the most likely outcome for any 2018 worker is that they will remain in their current work type group. Nine out of ten workers with only wage and salary earnings in 2018 continue on as W workers in 2019. Three-fourths of self-employed workers remain self-employed, and among those with both wage and salary and self-employment earnings in 2018, over 60 percent continue combining *W* and *S* earnings the next year (roughly 30 percent shed self-employment work). The likelihood that a worker will exit to or enter from not working varies markedly across groups. The exit rate to not working is greatest by over ten percentage points among those with only self-employment earnings (16.5 percent compared to 6.1 and 2.2 for W and BOTH, respectively). Although most labor market entrants

find work as wage and salary workers only, more than one in seven enter through self-employment suggesting that self-employment may offer an important pathway into the labor market for many.

Information from panel (a) of Table 1 may be used to construct entry and exit rates to and from: the workforce overall, self-employment overall, *S* and BOTH workers separately, wage and salary work (*W* plus *Both*) and *W* separately. Table 4 summarizes these transition rates.

Across all workers, roughly one worker in 15 enters or exits the workforce each year. Among workers under 35, one worker in nine is a new entrant but only one in 20 stops working. Prime aged workers (those 35 to 54) are the most attached with fewer than one in 20 entering or leaving. Among workers 55 and older, the rate of entry to work is similar to the rate for prime aged workers but one in ten stops working between 2018 and 2019.

Figure 1 shows this same information graphically for each of the three age groups. The most stable work categories (wage and salary work) are shown on the left and the least stable (S and BOTH) are shown toward the right within each figure. Across all work groups, entry among workers under 35 is substantially greater than exit whereas entry and exit rates are comparable among prime aged workers. Among older workers (55 and up), exit rates from all work categories are considerably greater than entry rates.

3.2 Findings from the LBD-NE

With the LBD-NE infrastructure in place, including the longitudinally consistent *LBDNENUM*, we can now describe how we will use the database to generate statistics. In this section we will calculate measures of business transitions within and across different legal forms of organization. We will also focus on entry and exit rates, a dynamic element of the nonemployer data that has not been readily available in public statistics. These tables serve as prototypes for the type of statistical products that we aim to make publicly available in the future.

Table 5 shows the total number of active firms in each year of nonemployer data, broken down by legal form of organization (LFO). The information on legal form comes from the original tax data, and include sole proprietorships, partnerships, and corporations. We include both S and C corporations in these business tabulations, even though we cannot attach C corps to their owners and therefore omit them from person and job level tables.[10] Also, because sole proprietors are a large group of hetero-

[10]Unlike an S corp, a C corp is taxed as a separate entity and therefore does not file a K-1 that allows us to link the firm to its owners.

Table 5: Active Firms in the LBD-NE

(a) 2014

LFO	Firms (millions)	Share (%)
Soleprop_noein	19.5	70.8
Soleprop_ein	4.1	14.9
Partnership	2.2	8.0
S-Corp	1.2	4.5
C-Corp	0.5	1.7
ALL	27.5	100.0

(b) 2019

LFO	Firms (millions)	Share (%)
Soleprop_noein	21.5	68.4
Soleprop_ein	5.3	16.8
Partnership	2.6	8.2
S-Corp	1.5	4.8
C-Corp	0.6	1.8
ALL	31.5	100.0

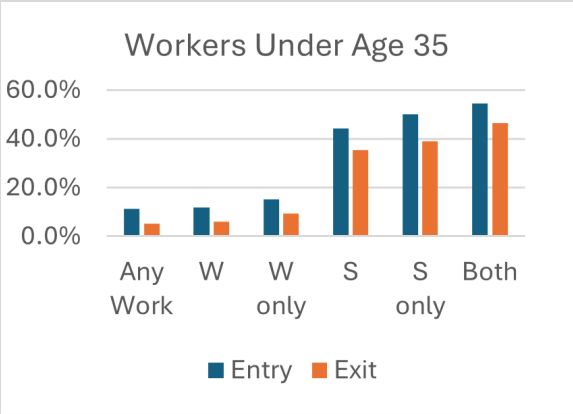
Note: This table reports the number of nonemployer firms in the LBD-NE for 2014 and 2019, by LFO category. Active firms are defined as businesses that report any positive net receipts during the tax year. The left-hand column reports counts of active firms expressed in millions, rounded to the nearest tenth. The right-hand column reports the share of all active firms in the given year belonging to each LFO category, as a percentage.

geneous business owners with arguably different intentions, we make a further distinction between sole proprietorships that include an EIN on their Schedule C filing, and those that do not (denoted as *Soleprop_ein* and *Soleprop_noein*, respectively). Panel (a) shows the counts of firms by these LFO categories for 2014, and Panel (b) does the same for 2019. We see that the total number of active nonemployer firms has crossed the 30 million threshold during this interval, with a growth in all categories of legal form.[11] The large majority of these are the approximately 20 million sole proprietors without EINs, representing over two-thirds of all nonemployer firms. Additionally, another 4–5 million sole proprietors report using an EIN in a given year. The remaining LFOs are those primarily identified by their EINs—partnerships, S corporations, and C corporations—representing 4–5 million businesses or nearly 15 percent of the nonemployer population. Overall, including the sole propri-

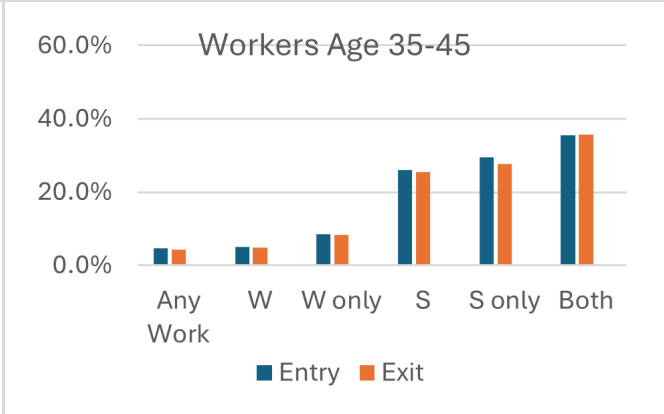
[11]For reference, this figure compares to the approximately 5.3 million employer firms and 7.2 million establishments that are observed in the employer universe. (Data points for "Firms" and "Establishments" in 2019 come from BDS Explorer: https://bds.explorer.ces.census.gov).

Figure 1: Entry and exit rates, by age

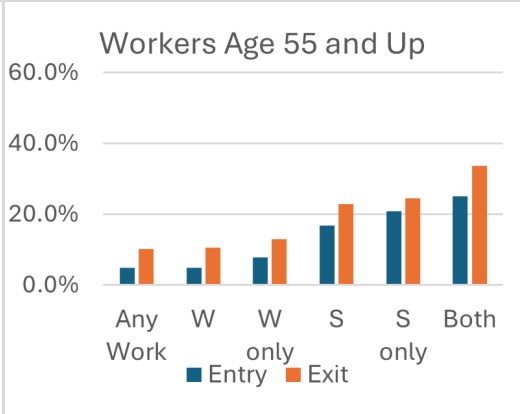
(a) Workers Under Age 35



(b) Worker Age 35-54



(c) Workers Age 55 and Up



Notes: See text for details.

Table 6: LBD-NE Transition Matrix 2018-2019

(a) Firms (thousands)

	LFO_2019						
LFO_2018	Soleprop_noein	Soleprop_ein	Partnership	S-Corp	C-Corp	Nonactive	ALL
Soleprop_noein	13,220	463	16	24	0	7,854	21,577
Soleprop_ein	28	3,413	5	8	0	1,219	4,673
Partnership	14	4	2,146	3	1	311	2,479
S-Corp	10	3	0	1,122	1	290	1,426
C-Corp	0	0	0	6	377	117	500
Nonactive	8,266	1,391	418	352	176	-	10,603
ALL	21,538	5,274	2,585	1,515	555	9,791	41,258

(b) Row Percentage (%)

	LFO_2019						
LFO_2018	Soleprop_noein	Soleprop_ein	Partnership	S-Corp	C-Corp	Nonactive	ALL
Soleprop_noein	61.3	2.1	0.1	0.1	0.0	36.4	100.0
Soleprop_ein	0.6	73.0	0.1	0.2	0.0	26.1	100.0
Partnership	0.6	0.2	86.6	0.1	0.0	12.5	100.0
S-Corp	0.7	0.2	0.0	78.7	0.1	20.3	100.0
C-Corp	0.0	0.0	0.0	1.2	75.4	23.4	100.0
Nonactive	78.0	13.1	3.9	3.3	1.7	-	100.0

Note: This table shows transition matrices for all nonemployer firms active across the 2018-2019 year pair. The rows refer to which LFO category a firm belonged to in 2018, while the columns represent a firm's LFO status in 2019. Panel (a) reports the number of firms belonging to each cell defined by a 2018/2019 LFO-pair, expressed in rounded thousands. Panel (b) expresses each cell as a row percentage, or as a share of firms belonging to the initial 2018 LFO state. The *Nonactive* category signifies that a firm was not in operation during the relevant year. Because firms must be active in at least one of the two years to be included in this sample, the 2018 Nonactive/2019 Nonactive cell is undefined. Due to rounding, note that a 0 in any given cell does not necessarily represent a true 0.

etors with EINs, the share of all firms reporting an EIN has increased from 29.1% in 2014 to 31.6% in 2019.

Next, we demonstrate how the LBD-NE can be used to explore firm dynamics across years, a novel feature of this data infrastructure. Due to the creation of the *LBDNENUM*, discussed above, we can readily link a unique nonemployer business between two years to determine whether it was active and whether it remained in the same legal form. To explore such year-to-year flows, Table 6 shows a transition matrix for the years 2018 to 2019. The rows are denoted by a firm's LFO status in 2018, and the columns denote its status in 2019. Each cell thus contains the firms that flowed from

one given state to another across the two years. Note that an additional category for "Nonactive" is included, as both a row and a column, to record a firm that was inactive in the respective year.[12] A firm transitioning from "Nonactive" status in 2018 to an active LFO category in 2019 is therefore an entrant in 2019. Conversely, a firm moving from an active LFO status in 2018 to "Nonactive" in 2019 is a firm exit. Because the table includes these entering and exiting firms, the sample represents the union of all nonemployer firms that are active in at least one of the two years. Note also that since our infrastructure currently only comprises nonemployer firms, a transition to or from employer status will simply be captured in the relevant year's "Nonactive" category, since we cannot currently observe the link. Once further work to integrate the nonemployer and employer universes has been completed, we will be able to make distinctions between such types of transitions.

Panel (a) of Table 6 reports the number of firms that make each type of potential transition between LFO states, expressed in thousands. Panel (b) reports the same information but instead expressed as a row percentage, or the conditional probability of making a particular transition in 2019 given its status in 2018. It is apparent from both these panels that the diagonal elements of the matrices dominate, demonstrating that a nonemployer firm in one year tends to remain in the same LFO state for the following year as well. However, year-to-year persistence is nowhere near universal, only ranging from about 61% among sole proprietors without EINs, to 87% among partnerships. When a firm does not continue in the same LFO state as in the prior year, it is highly likely to exit. Given an active LFO status in 2018, the propensity of a sole proprietor without an EIN to exit in 2019 was over one third, at 36.4%. Sole proprietorships with an EIN in 2018 were somewhat less likely to exit in 2019 at 26.1%, suggesting that the presence of an EIN may signal some sort of intent or ability to maintain the business. The exit propensity of the other LFO types is even lower, ranging from 12.5% for partnerships to just over 20% for the two types of corporations. The other off-diagonal elements of the matrices are small, but generally populated. For example, while 463 thousand sole proprietorships without EINs in 2018 acquired an EIN in 2019, this only represents about 2.1% of such firms. Approximately 50 thousand sole proprietorships in 2018 (with and without EINs) transitioned into partnerships and S corporations in 2019, although the propensity to do so was only around 0.2–0.3%. Sole proprietors with EINs were relatively more likely to become S corporations than those without EINs, at 0.2% versus 0.1%. The opposite direction of flows is rare but non-negligible, with

[12] A firm is classified as nonactive if it did not file a tax return in the year and therefore has no record in the Business Register, or if it filed a return reporting 0 net receipts of revenue.

13 thousand S corporations and 18 thousand partnerships transitioning into sole proprietorships in 2019. Each of the various types of flows between partnerships, S corporations, and C corporations numbered around 1 to 6 thousand firms between 2018-2019, although these represent a very small share of such firms.

As noted, while the above table shows that all types of transitions occur, the two most frequent and arguably important transitions are firm entry and exit. Figure 2 reports these rates for all nonemployers by LFO over 2014–2019, with panel (a) depicting entry rates and panel (b) showing exit rates. To calculate these rates in a way that reflects a common baseline, we use a denominator based on the average number of active firms in the two relevant years. This follows the convention developed by the official Business Dynamics Statistics which calculate entry and exit rates for employer businesses in the Longitudinal Business Database. For both entry and exit, that means the denominator used in this figure is the average number of firms (of a given LFO) active in 2018 and 2019. The numerator is either the number of entrants (nonactive in 2018 and active in 2019) in the top panel or exits (active in 2018 and nonactive in 2019) in the bottom panel.

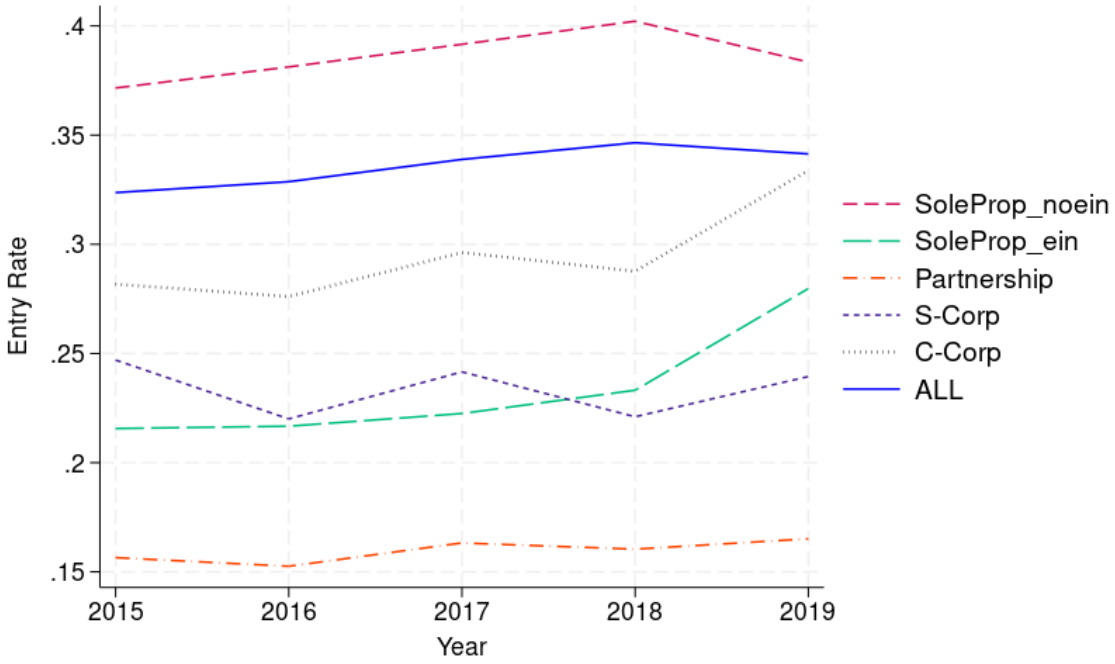
The top lines in the two panels of Figure 2 reveal that sole proprietorships without EINs have the highest rates of entry and exit, each in the 30-40% range. That means that over a third of the population of sole proprietorships without EINs is operating for the first time in any given year, although entry somewhat exceeds exit. At the other end of the spectrum are partnerships, which have entry and exit rates hovering around only 12–15% during the time series. For context, note that the entry and exit rates among employer firms in the BDS have remained around 8–10% during the same time frame.[13] While there has been a slight overall upward time trend in both nonemployer entry and exit rates during the 2014–2019 period, some variation is apparent both over time and across LFO type. For example, the entry and exit rates of sole proprietors without EINS appear to diverge from the other LFO groups in the final year of 2019. While their entry rate fell by a couple percentage points from 40% to 38% in the end year, their exit rate continued to rise in opposition to the four other LFO groups.[14] Entry and exit among sole proprietorships with EINs, partnerships, and C corporations has demonstrated a bit more volatility from year to year but remained generally within the 20–30% range. However, the entry rate of C corporations increased sharply to 33% in

[13]See data series for "Establishment Entry Rate" and "Establishment Exit Rate" in 2014–2019 from the BDS: https://bds.explorer.ces.census.gov.

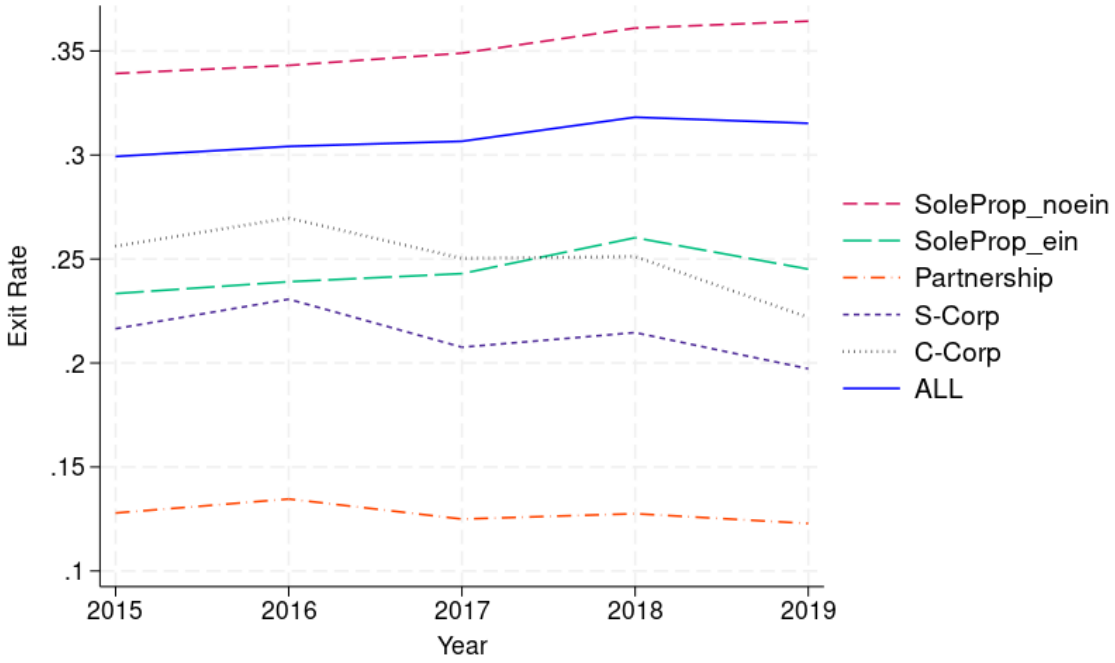
[14]This finding is consistent with Table 5 which shows that the share of sole proprietors without EINs has fallen from 2014 to 2019.

Figure 2: LBD-NE Firm Entry and Exit Rates by LFO

(a) Entry Rates



(b) Exit Rates



Note: Firm entry in year t is defined as being active year t but nonactive in year $t-1$. Conversely, firm exit is defined as being active in year $t-1$ but nonactive in year t. The denominator in the calculation of both entry and exit rates is the average number of active firms in $t-1$ and t, for the given LFO type.

Table 7: Ownership Jobs by NE Business Type, Wage and Salary Status

(a) Owner has no wage and salary employment

LFO	Jobs (millions) (1)	Share (%) (2)
Soleprop_noein	8.9	46.1
Soleprop_ein	2.4	12.7
Partnership/S-Corp	7.9	41.2
ALL	19.2	100.0

(b) Owner also has wage and salary employment

LFO	Jobs (millions) (1)	Share (%) (2)
Soleprop_noein	12.0	55.5
Soleprop_ein	2.1	9.6
Partnership/S-Corp	7.5	34.9
ALL	21.6	100.0

Notes: This table reports the average number of ownership jobs associated with nonemployer firms in the LBD-NE from 2014 to 2018, by LFO category. Active firms are defined as businesses that report any positive net receipts during the tax year. Column 1 reports counts of jobs expressed in millions, rounded to the nearest tenth. Column 2 reports the share of all ownership jobs in 2014–2018 belonging to each LFO category, as a percentage.

2019 while its exit rate declined to 22%, reflecting the largest net growth rate of any LFO type. The entry and exit rates of partnerships, by contrast, have remained low and relatively stable in terms of yearly volatility, remaining within an approximately 1 percentage point range across the entire period. Nonetheless, overall the nonemployer universe reflects a high level of dynamism and churn, especially in comparison to more familiar statistics about employer firm dynamics.

3.3 Findings from Combining the SEJ and LBD-NE

With owner identifiers attached to the LBD-NE, we are able to observe for the first time the intersection of nonemployer business characteristics and the worker characteristics of the self-employed individuals that own the nonemployer businesses. We are thus not only observing nonemployer business or self-employed worker characteristics, but self-employed *job* characteristics—the combination of a self-employed worker and a business they own.

Table 8: Business Owners with Wage and Salary Work (%)

	All NE Firms	NE Firm Entrants		NE Firm Exits	
	Concurr. Yr	Prior Yr	Concurr. Yr	Concurr. Yr	Post Yr
LFO	(1)	(2)	(3)	(4)	(5)
Soleprop_noein	57.5	71.8	70.3	68.7	69.9
Soleprop_ein	45.9	67.3	64.2	58.6	59.9
Partnership/S-Corp	48.8	54.9	51.9	47.8	48.9
ALL	55.9	64.9	63.0	60.9	61.7

Notes: This table reports the average share of nonemployer owners from 2014 to 2018 that also had wage and salary employment. Active firms are defined as businesses that report any positive net receipts during the tax year. Column 1 reports the average share of all owners of active nonemployer businesses in 2014–2018 that also had wage and salary employment. Column 2 reports the average share of owners of newly entering nonemployer businesses in 2015–2019 that had wage and salary employment the year prior to entry. Column 3 reports the average share of owners of newly entering nonemployer businesses in 2015–2019 that had wage and salary employment the same year as entry. Column 4 reports the average share of owners of exiting nonemployer businesses in 2014–2018 that had wage and salary employment the last year prior to exit. Column 5 reports the average share of owners of exiting nonemployer businesses in 2014–2018 that had wage and salary employment the first year after exit.

3.3.1 Wage and Salary Employment

We begin by observing nonemployer businesses and the wage and salary status of their owners. Table 7 shows the distribution of jobs across nonemployer business LFO by whether the business owner also had wage and salary employment. Distributions across LFOs are fairly similar for both nonemployer business owners with and without wage and salary employment. For both groups of business owners, sole proprietorships without an EIN are the most common legal form of organization, followed by partnerships and S corporations, with sole proprietorships with an EIN being by far the least common job for nonemployer business owners.[15] Owners who also have wage and salary employment are somewhat more likely to own sole proprietorships without EINs than owners who do not have wage and salary employment (55.5% vs 46.1%), and they are less likely to own partnerships or S corporations (34.9% vs 41.2%).

Table 8 shows the propensity to also have wage and salary employment for owners of various nonemployer firms—i.e., of a given set of nonemployer businesses, the share of owners that also have wage and salary employment. The first column shows a similar propensity to have wage and salary

[15]Note the difference from the distribution of *businesses* in Table 5. When considering business owners, partnerships and S corporations have a relatively higher share of jobs because partnerships and S corporations can both have multiple owners. Sole proprietorships, on the other hand, necessarily only have a single owner.

Table 9: Ownership Jobs by NE Business Type, Other Self-Employment Status

(a) Owner has no other self-employment

LFO	Jobs (millions) (1)	Share (%) (2)
Soleprop_noein	17.5	64.4
Soleprop_ein	3.8	13.9
Partnership/S-Corp	5.9	21.7
ALL	27.2	100.0

(b) Owner also has other self-employment

LFO	Jobs (millions) (1)	Share (%) (2)
Soleprop_noein	3.4	24.5
Soleprop_ein	0.8	5.6
Partnership/S-Corp	9.6	69.9
ALL	13.7	100.0

Notes: This table reports the average number of ownership jobs associated with nonemployer firms in the LBD-NE from 2014 to 2018, by LFO category. Active firms are defined as businesses that report any positive net receipts during the tax year. Column 1 reports counts of jobs expressed in millions, rounded to the nearest tenth. Column 2 reports the share of all ownership jobs in 2014–2018 belonging to each LFO category, as a percentage.

employment across owners of all three business types, with owners of sole proprietorships without EINs having the highest share at 57.5%. Columns 2–5 report similar shares for owners of entering and exiting nonemployer businesses. With the exception of owners of exiting partnerships and S corporations, we find that owners of entering and exiting nonemployer businesses are relatively more likely to also have wage and salary employment than owners of continuing nonemployer businesses. For these entering and exiting nonemployer businesses, we also find an increase in the *range* of propensity between business types. For example, for all nonemployer businesses the difference between the highest and lowest shares is 11.6%, while the same difference for entering and exiting businesses ranges from 16.9% to 21.0%. This increase in variation is mostly driven by the increased propensity of owners of entering and exiting sole proprietorships without EINs to also have wage and salary employment. In all cases, owners of entering nonemployers are more likely than owners of exiting nonemployers to also have wage and salary employment; however, this difference is largest for owners of nonemployer businesses with an EIN (i.e., partnerships, S corporations, and EIN-holding sole proprietorships). In

Table 10: Business Owners with Other Self-Employment (%)

LFO	All NE Firms Concurr. Yr (1)	NE Firm Entrants Concurr. Yr (2)	NE Firm Exits Concurr. Yr (3)
Soleprop_noein	16.1	17.7	17.0
Soleprop_ein	16.8	16.2	17.0
Partnership/S-Corp	61.8	61.1	60.0
ALL	29.6	31.2	30.6

Notes: This table reports the average share of nonemployer owners from 2014 to 2018 that also had other self-employment. Active firms are defined as businesses that report any positive net receipts during the tax year. Column 1 reports the average share of all owners of active nonemployer businesses in 2014–2018 that also had other self-employment. Column 2 reports the average share of owners of newly entering nonemployer businesses that also had other self-employment the year of entry. Column 3 reports the average share of owners of exiting nonemployer businesses that also had other self-employment the last year before exit.

other words, owners of nonemployer businesses with EINs are more likely to enter *from* wage and salary employment than to exit *to* wage and salary employment. This is consistent with findings from Fairlie et al. (2023) that nonemployer startups with EINs are more likely to migrate to employer status. Because here we only consider the universe of nonemployer businesses, it could be that many of the exiting nonemployer businesses with EINs are actually entering the employer universe, meaning that their owners retain their self-employment jobs rather than entering wage and salary employment.

3.3.2 Other Self-Employment

We next consider whether owners of nonemployer businesses also have other self-employment. Table 9 shows the distribution of jobs across nonemployer business LFO by whether the business owner also had other self-employment. Unlike the same table for wage and salary employment, there are large distributional differences between nonemployer business owners with and without other self-employment—not to mention the distributions themselves have higher variation. We find that owners *without* other self-employment are much more likely to be sole proprietors without EINs, while owners *with* other self-employment are much more likely to own partnerships or S corporations. In addition, while owners with and without wage and salary employment represented roughly the same number of total jobs, nonemployer business owners with other self-employment represent only half as many jobs as those without other self-employment.

Table 11: Nonemployer Jobs Transition Matrix, Wage and Salary Employment

(a) Jobs (thousands)

	LFO (Yr2)	Soleprop_noein		Soleprop_ein		Part./S corp		Nonactive		
LFO (Yr1)	W & S	No	Yes	No	Yes	No	Yes	No	Yes	ALL
Soleprop_noein	No	5769	617	145	18	23	3	1787	500	8862
	Yes	751	6037	28	144	6	26	410	4602	12003
Soleprop_ein	No	18	2	1808	149	8	1	382	80	2447
	Yes	3	16	180	1219	2	7	66	588	2080
Part./S corp	No	17	3	4	1	6603	269	940	93	7930
	Yes	3	19	1	4	416	6159	72	875	7548
Nonactive	No	1796	461	297	53	930	52	-	-	3589
	Yes	588	5171	85	634	118	1079	-	-	7676
ALL		8944	12327	2548	2222	8106	7596	3657	6737	52135

(b) Row Percentage (%)

	LFO (Yr2)	Soleprop_noein		Soleprop_ein		Part./S corp		Nonactive		
LFO (Yr1)	W & S	No	Yes	No	Yes	No	Yes	No	Yes	ALL
Soleprop_noein	No	65.1	7.0	1.6	0.2	0.3	0.0	20.2	5.6	100.0
	Yes	6.3	50.3	0.2	1.2	0.0	0.2	3.4	38.3	100.0
Soleprop_ein	No	0.7	0.1	73.9	6.1	0.3	0.0	15.6	3.3	100.0
	Yes	0.1	0.8	8.6	58.6	0.1	0.3	3.2	28.2	100.0
Part./S corp	No	0.2	0.0	0.1	0.0	83.3	3.4	11.9	1.2	100.0
	Yes	0.0	0.3	0.0	0.1	5.5	81.6	1.0	11.6	100.0
Nonactive	No	50.0	12.8	8.3	1.5	25.9	1.4	-	-	100.0
	Yes	7.7	67.4	1.1	8.3	1.5	14.1	-	-	100.0

Notes: This table reports transition counts and shares of owner–business combinations (i.e., jobs) by wage and salary status (W&S) of the owner and legal form of organization (LFO) of the business across two years. Active firms are defined as businesses that report any positive net receipts during the tax year. Rows represent the W&S and LFO categories in the first year of the year pair, and columns represent the same for the second year. Numbers reported are averages across the five year pairs in 2014–2019.

Table 10 shows the propensity of owners of different nonemployer businesses to also have other self-employment. Column (1) shows that on average roughly 30% of all nonemployer jobs also had other self-employment in 2014–2018. However, when considering only owners of partnerships and S corporations, the share increases significantly to 62%. The share of entering and exiting nonemployers that have other self-employment increases slightly for sole proprietorships without EINs and decreases slightly for partnerships and S corporations; however, the propensity to have other self-employment appears relatively similar between continuing and entering/exiting nonemployer busi-

Table 12: Nonemployer Jobs Transition Matrix, Other Self-Employment

(a) Jobs (thousands)

	LFO (Yr2)	Soleprop_noein		Soleprop_ein		Part./S corp		Nonactive		
LFO (Yr1)	Oth. SE	No	Yes	No	Yes	No	Yes	No	Yes	ALL
Soleprop_noein	No	10645	502	242	14	37	8	6002	57	17507
	Yes	461	1566	25	54	3	10	1008	232	3358
Soleprop_ein	No	23	6	2661	139	12	3	913	12	3768
	Yes	2	8	125	432	1	3	149	41	760
Part./S corp	No	25	2	6	0	4309	779	778	15	5913
	Yes	7	8	2	2	844	7515	495	693	9564
Nonactive	No	6553	1188	885	132	815	524	-	-	10097
	Yes	43	232	11	42	32	808	-	-	1168
ALL		17759	3512	3955	814	6052	9650	9344	1050	52135

(b) Row Percentage (%)

	LFO (Yr2)	Soleprop_noein		Soleprop_ein		Part./S corp		Nonactive		
LFO (Yr1)	Oth. SE	No	Yes	No	Yes	No	Yes	No	Yes	ALL
Soleprop_noein	No	60.8	2.9	1.4	0.1	0.2	0	34.3	0.3	100.0
	Yes	13.7	46.6	0.7	1.6	0.1	0.3	30	6.9	100.0
Soleprop_ein	No	0.6	0.2	70.6	3.7	0.3	0.1	24.2	0.3	100.0
	Yes	0.3	1.0	16.4	56.8	0.1	0.4	19.6	5.4	100.0
Part./S corp	No	0.4	0.0	0.1	0.0	72.9	13.2	13.2	0.2	100.0
	Yes	0.1	0.1	0.0	0.0	8.8	78.6	5.2	7.2	100.0
Nonactive	No	64.9	11.8	8.8	1.3	8.1	5.2	-	-	100.0
	Yes	3.7	19.9	0.9	3.6	2.7	69.2	-	-	100.0

Notes: This table reports transition counts and shares of owner–business combinations (i.e., jobs) by other self-employment status (Oth. SE) of the owner and legal form of organization (LFO) of the business across two years. Active firms are defined as businesses that report any positive net receipts during the tax year. Rows represent the Oth. SE and LFO categories in the first year of the year pair, and columns represent the same for the second year. Numbers reported are averages across the five year pairs in 2014–2019.

nesses. This suggests that nonemployer business owners with other self-employment are less likely to be entering from or exiting to another sequential self-employment job, such as those entering (exiting) from (to) wage and salary work in Table 8.[16] Rather, the fact that continuers are just about as likely as entering and exiting nonemployer businesses to have other self-employment suggests that these business owners are more likely to be "parallel" entrepreneurs—those who start and run multiple businesses concurrently.[17]

[16]Note that for Table 8 we are able to observe directly whether owners had wage and salary employment the year prior

Table 13: Nonemployer Jobs Transition Matrix, Continuing Partnerships and S Corps

(a) Jobs (thousands)

		W & S (Yr2)		No			Yes		
		Self-Emp. (Yr2)	No	Yes	Yes	No	Yes	Yes	
W & S (Yr1)	Self-Emp. (Yr1)	Oth. SE	No	No	Yes	No	No	Yes	ALL
	No	No	-	139	91	-	8	4	242
No	Yes	No	208	1721	234	8	69	14	2254
	Yes	Yes	114	296	3800	5	21	140	4375
	No	No	-	10	7	-	188	105	311
Yes	Yes	No	15	100	28	192	1650	295	2280
	Yes	Yes	9	25	221	84	291	3354	3984
ALL			346	2292	4381	289	2226	3913	13446

(b) Row Percentage (%)

		W & S (Yr2)		No			Yes		
		Self-Emp. (Yr2)	No	Yes	Yes	No	Yes	Yes	
W & S (Yr1)	Self-Emp. (Yr1)	Oth. SE	No	No	Yes	No	No	Yes	ALL
	No	No	-	57.4	37.5	-	3.2	1.8	100.0
No	Yes	No	9.2	76.4	10.4	0.4	3.0	0.6	100.0
	Yes	Yes	2.6	6.8	86.9	0.1	0.5	3.2	100.0
	No	No	-	3.3	2.3	-	60.6	33.8	100.0
Yes	Yes	No	0.6	4.4	1.2	8.4	72.4	12.9	100.0
	Yes	Yes	0.2	0.6	5.5	2.1	7.3	84.2	100.0

Notes: This table reports transition counts and shares of owner–business combinations (i.e., jobs) by wage and salary status (W&S), any self-employment status (Self-Emp.), and other/additional self-employment status (Oth. SE) of the owner across two years. Each business in this table has a legal form of organization (LFO) of either partnership or S corporation and is active in both years. Active firms are defined as businesses that report any positive net receipts during the tax year. Rows represent the W&S, Self-Emp., and Oth. SE categories in the first year of the year pair, and columns represent the same for the second year. Numbers reported are averages across the five year pairs in 2014–2019.

3.3.3 Nonemployer Jobs Dynamics

Lastly we consider dynamic transitions of business type and owner work characteristics. For simplicity, we look at the average pairwise transitions across the five year pairs in 2014–2019. Table 11 shows

to entry or the year after exit. Because of the way we currently identify workers with a second self-employment job, we are unable to identify which owners enter from or exit to a *single* other self-employment job. However, one might plausibly assume that if an individual owns both an entering business and another nonemployer business, the other business is likely a continuer rather than another entrant. A similar assumption could be made about exits. In future work we plan to directly identify whether owners of entering and exiting businesses actually come from or go to other self-employment jobs.

[17]This is opposed to "serial" entrepreneurs, who often grow and sell one business before starting another.

transitions of jobs by whether the owner also had wage and salary employment. Panel (a) reports job counts in thousands, while panel (b) reports row percentages (i.e., percentages conditional on the year 1 job state). Conditional on a given business type, we find stronger state persistence for business owners without wage and salary employment—especially for sole proprietors. In other words, owners without additional wage and salary employment are more likely to remain in the same business without wage and salary work than owners with wage and salary employment are to remain in their same business with continual wage and salary work. For example, 65.1% of sole proprietors who don't have an EIN or wage and salary employment remain in the same state; however, only 50.3% of the same business owners who have wage and salary employment remain in their same state. A similar difference holds for EIN-holding sole proprietors. This is largely driven by the different probabilities of exit between sole proprietors with and without wage and salary employment. As discussed in section 3.3.1, exiting nonemployer sole proprietorships are significantly more likely to have owners with wage and salary employment, which is consistent with the relatively higher probability of transitioning to "Nonactive" for sole proprietors with wage and salary employment in panel (b) of Table 11. The relatively low probability of exit contributes strongly to the state persistence of partnerships and S corporations; however, owners of these businesses are also less likely to add or leave wage and salary work compared to sole proprietors.

Table 12 similarly reports job transitions by whether the owner also had other self-employment. Like in Table 11, this table contains two panels—one with job transition counts in thousands, and the other with row percentages. We find that sole proprietors without other self-employment exhibit stronger state persistence than sole proprietors with other self-employment. However, unlike the similar pattern seen for wage and salary employment, this does *not* appear to be driven by different propensities to exit. Rather, we find an asymmetric propensity for sole proprietors to add or leave other self-employment. For both EIN-holding and other sole proprietors, there is a much higher propensity to leave—rather than add—other self-employment. For example, 16.4% of EIN-holding sole proprietors with other self-employment transition to no other self-employment, while only 3.7% of those with no other self-employment transition to having other self-employment in the next year. This pattern differs for owners of partnerships and S corporations, who show sizable shares of both leaving *and* adding other self-employment—in fact, the propensity to add other self-employment is actually *larger* than to leave other self-employment. Among all business types, owners of partnerships and S corporations are, by a significant margin, the most likely to either continue with multiple self-

employment jobs or enter into additional self-employment (for those who don't already have other self-employment).

Finally, in Table 13 we report job transitions across *three* worker states: wage and salary employment, any self-employment, and other/additional self-employment. Rather than reporting all business types, for this table we report only continuing partnerships and S corporations (i.e., no sole proprietorships, and no entering or exiting businesses). We find that, regardless of wage and salary employment status, owners with other self-employment are the most likely to remain in the same state across years (84%–87%). However, conditional on switching states, owners are generally most likely to transition to another state within their same wage and salary employment status.[18]

While all nonemployer *businesses* in Table 13 are continuers, it is possible for the *owners* to join or leave businesses.[19] This means that an owner may have no self-employment in one of the two neighboring years, but not both (see the four empty cells in both panels). About 4% of the total ownership jobs are new owners to a continuing partnership or S corp, and roughly 5% are owners leaving their businesses. In both cases, around half of these jobs are coming (leaving) from (to) wage and salary employment, with the other half coming (leaving) from (to) outside the observed workforce.[20]

4 Conclusion

The prototype statistics presented in this chapter and the microdata they summarize represent important contributions to national statistics. They capture tens of millions of additional workers, businesses and jobs and associated transitions and make it possible to make a fuller accounting of workforce composition, entry, and exit. For example, these tabulations show that show that 11 percent of wage and salary workers each year also have self-employment earnings. Comparing 2014 and 2019 workforce composition totals, though the count of wage only workers grows by nearly ten million, the share of these workers as a proportion of the overall workforce actually falls by over 0.4 pp during this time pe-

[18]The one exception to this pattern is that owners with other self-employment are slightly more likely to switch wage and salary status and retain additional self-employment than they are to leave self-employment altogether. However, they are still more likely to leave their other self-employment and retain their wage and salary status than they are to retain their other self-employment and switch wage and salary status.

[19]The reason we only include this table for partnerships and S corps is precisely because the business entity can continue even with new owners. For sole proprietorships, the business's identifier is the PIK of the owner himself.

[20]In the case of new owners, slightly more are coming from wage and salary work (56%), and separating owners are slightly more likely to exit the workforce (55%).

riod. While the share of workers with only self-employment earnings declines slightly also, the count of workers who combine wage and salary and self-employment, in contrast, grows by more than 13 percent between 2014 and 2019. As a share of the overall workforce, this group grows by nearly 0.6 pp. In our most recent data, about thirty-three million workers (32.6 in 2019) had self-employment or business income. In terms of entry and exit, across all workers, one worker in 15 enters or exits the workforce each year. Although most labor market entrants find work as wage and salary workers only, more than one in seven enter through self-employment suggesting that self-employment may offer an important pathway into the labor market for many.

The transition dynamics of business owners and the self-employed are fundamentally related to the more than thirty million (in 2019) nonemployer businesses that they operate. More than two-thirds (68.4% in 2019) of these businesses are sole proprietors without EINs. The remainder of businesses, which we show has been increasing over time, consist of sole proprietors with EINs (16.8%), partnerships (8.2%), S corporations (4.8%), and C corporations (1.8%). The transition dynamics of these businesses are quite different across these legal forms. More than one-third (36.4%) of sole proprietors operating in 2018 were either inactive or exited by 2019, and these rates are lower for sole proprietors with EINs (26.1%), C corporations (23.4%), S corporations (20.3%), and especially among partnerships (12.5%). We also present some of the first statistics on transitions across these legal forms, which we show are quite infrequent in any given year. A small share of sole proprietors obtain an EIN and remain a sole proprietor (2.1%). Among sole proprietors without (with) an EIN, tiny fractions transition to more complex businesses: 0.1% (0.2%) to partnerships and 0.1% (0.1%) to S corporations—a total of just over 50 thousand businesses in 2019. A few thousand (0.1% of) partnerships transition to S corporations, but, for legal reasons, no businesses make the reverse transition. We also show that a small share (1.2%) of C corporations transition to S corporations.

We are among the first to document the joint dynamics of businesses and those who operate them, which number about forty million (average 2014–2018) owner–business combinations (which we call "ownership jobs"). We also consider the joint dynamics of ownership and wage and salary employment. More than half (55.9%) of these ownership jobs have concurrent wage and salary income, and this share is higher among entrants (63%) and exiters (60.9%)—and these are even higher (70.3% and 68.7%, respectively) among sole proprietors without EINs. We further document that owners frequently work multiple ownership jobs: nearly one-third (29.6%) of jobs have concurrent ownership of more than one active business. These "parallel entrepreneurs" are especially prevalent among owners

of partnerships and S corporations: in 61.8% of all owner–entity combinations, the owner has a stake in more than one concurrent active business. We further explore these joint dynamics to illustrate new stylized facts. Nonemployer businesses operated by wage and salary workers are more likely to exit, and sole proprietors are most likely to both enter and leave wage and salary work. Owners with stakes in multiple businesses—especially of partnerships and S corporations—have especially high transition rates, which include investments into and divestments from continuing businesses. These statistics show that a relatively small pool of the most active entrepreneurs account for a disproportionate share of U.S. business dynamism.

Looking ahead, we will refine our ability to track ownership job for parallel entrepreneurs, those owners operating multiple businesses simultaneously. More broadly, we will further stratify self-employed workers and nonemployer businesses into those whose owners receive IRS Form 1099-Misc or 1099-NEC, relative to those that do not. In addition, we will expand the scope of potential nonemployer business transitions to include transitions that occur when a business hires paid employees and becomes an employer business. Records corresponding to ownership of employer businesses already are included in the SEJ. Thus, future versions of the statistics presented in this paper will include these owners and jobs. Finally, we will introduce information on business age and receipts and self-employment earnings. Earnings information will allow us to separate workers with both wage and non-wage earnings into those who receive the majority of their annual earnings from wage and salary work versus those who receive more than half from self-employment. This separation will yield yet another worker grouping based on work type concentration.

Ultimately, statistics may be produced that provide insight into career pathways to business ownership/job creation, including through adverse events such as job displacement. Similarly, it is possible to produce tabulations providing insight into the labor market impact of ownership exit such as later earnings penalty associated with owned business failure. Finally, we may provide statistics showing distinct transitions and outcomes for businesses started by first-time versus returning entrepreneurs.

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