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Pre-entry Wage-sector Attachment**

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Differences in Self-employment Duration by Year of Entry & Pre-entry Wage-sector Attachment

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Abstract

The literature on the self-employed hypothesizes two different paths to self-employment. On the one hand, self-employment is associated with entrepreneurship and a motivation to pursue an opportunity. On the other hand, previous research indicates that people also become self-employed because of limited opportunities in the wage sector. Using a unique set of data that links the American Community Survey to Form 1040 and W-2 records, this paper extends the existing literature by examining self-employment duration for five consecutive entry cohorts, including two cohorts who entered self-employment during the Great Recession. Severely limited labor market opportunities may have driven many in the recession cohorts to enter self-employment, while those entering self-employment during the boom may have been pursuing opportunities under favorable market conditions. To more explicitly test the concept of “necessity” versus “opportunity” self-employment, we also examine the pre-entry wage labor attachment of entrants. Specifically, we ask whether an association exists between wage labor attachment and the duration of self-employment. We also explore whether the demographic/socio-economic characteristics and self-employment exit behavior of the cohorts are different, and if so, how. We find evidence consistent with the existence of “necessity” vs. “opportunity” self-employment types. Even when controlling for local economic conditions and the demographic/socio-economic characteristics of the self-employed, entrants with a more tenuous connection to the wage labor market exit self-employment earlier, and are more likely to transition from self-employment to unemployment.

Keywords: Self-employment, entrepreneurship, necessity entrepreneur, opportunity entrepreneur, self-employment duration, Great Recession.

JEL Classification: J15, J20, J24, L26, M13.

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I. Introduction

Self-employment is often associated with two different paths. On the one hand, self-employment is linked to entrepreneurship, innovation, and a motivation to pursue an opportunity (the “opportunity” view). On the other hand, the economic literature on the self-employed (e.g., Fairlie, 2013; Block and Wagner, 2010; Rissman, 2006) provides evidence indicating that entering self-employment is primarily driven by changes in labor market conditions, and that people become self-employed because of negative shocks to labor demand and limited opportunities in the wage sector (the “necessity” view).¹

Understanding these differences is important for economic growth and policy-making. Self-employment that leads to the establishment of a successful employer and/or innovative firm can be a conduit for job creation and an engine of economic growth. Self-employment may also serve as a tool to cushion economic downturns for those who would otherwise be unemployed. Understanding if and how self-employed types differ in their performance outcomes is important to inform and tailor policies. For instance, opportunity entrepreneurs may be, on average, more likely to become successful employers and/or innovative firms. On the other hand, the necessity types may be more likely to exit self-employment only to find themselves unemployed. In this scenario, those becoming self-employed out of necessity might then be better served by training or education programs instead of policies that stimulate self-employment indiscriminately. Meanwhile, the opportunity types would greater benefit from policies aimed to facilitate self-employment and bring down barriers to entry, such as access to capital.

¹ In the business literature, these two paths to self-employment have been labeled “opportunity” and “necessity” entrepreneurship (e.g., Bosma 2013, Block & Wagner 2010).

Our paper examines the relationship between economic and employment conditions at the time of self-employment entry, and self-employment duration. We first explore self-employment duration for five consecutive cohorts of self-employment entrants, including two cohorts that became self-employed during the Great Recession. We compare the outcomes of these recession cohorts to those entering self-employment before the downturn, during a period of economic expansion. The initial labor and demand conditions surrounding the decision to become self-employed are distinctively different for these two types of cohorts. While those becoming self-employed in the midst of the Great Recession may have been more driven by severely limited opportunities in the wage sector, those entering self-employment during the boom may have been seeking opportunities under favorable market conditions and access to capital. Thus, we expect these cohorts to fare differently in terms of performance outcomes, including self-employment duration. We further distinguish those who likely became self-employed through necessity versus opportunity by using information on the pre-entry employment status or wage-labor attachment of the newly self-employed. Here, we also expect to see different self-employment trajectories for those who were fully or nearly fully employed around the time of self-employment entry and those who were not.

Our paper extends the existing literature in a variety of ways. Most U.S. studies examining self-employment have relied on survey data that are primarily cross-sectional in nature, rendering the researcher unable to look at longitudinal individual outcomes (e.g., Fairlie, 2013), or on limited panel data that do not allow for entry cohort behavior exploration (e.g., Rissman, 2006; Ahn, 2011). In contrast, our study uses a unique set of data: American Community Survey (ACS) data² from 2005 to 2009 linked to administrative tax records for the

² See <https://www.census.gov/programs-surveys/acs/> for more information on the ACS.

2003–2013 period. These data allow us to identify those entering self-employment in each year from 2005 through 2009 using a definition that is based on both survey responses and tax filing behavior, and then follow their self-employment trajectory over time up to 2013. At the same time, we recognize that our identification of self-employment is somewhat restrictive as our data allow us to identify individuals that enter self-employment as sole-proprietors or partners (in a partnership), but not corporations.³

The longitudinal nature of our data allow us to observe the employment conditions of the self-employment entrants before they become self-employed to further refine our identification of self-employed types. In addition, and to the best of our knowledge, our paper is the first to examine with U.S. data whether those exiting self-employment become unemployed/leave the labor force or whether they enter the wage sector upon departure as well as examine what self-employed type is more likely to experience one of those outcomes. In line with other studies, we also explore whether demographic and socio-economic characteristics play a role in self-employment duration, but extend the analysis by examining whether the potential associations between those characteristics and self-employment exit vary across the cohorts, and if so, how. We do this while also controlling for local economic conditions – since previous research has shown that this factor significantly influences self-employment entry and exit. Specifically, our research questions are: Does the likelihood of self-employment exit vary by cohort? Is pre-entry attachment to wage labor associated with self-employment exit, and specifically, with exit towards unemployment or the wage sector? Is the demographic profile of a cohort associated with exiting self-employment? And does the association (if any) vary across entry cohorts?

³ A sole proprietorship is an unincorporated business owned and run by one individual. A partnership is an unincorporated business owned and run by more than one person.

We employ binary and multinomial logistic regressions by cohort to address these questions. Our results are consistent with the notion of two different self-employed types, although the evidence is slightly mixed. Those with a more tenuous connection to wage labor before entry left self-employment sooner than did those with a higher pre-entry attachment. Moreover, the less-attached self-employed were more likely to exit self-employment for unemployment or non-participation in the labor market rather than for wage labor. On the other hand, the pure cohort entry-year effect is less clear—self-employment duration was shorter for the cohort entering in 2009, but the 2008 cohort did not appear to exit self-employment more quickly than cohorts entering during the boom. Finally, certain demographic differences were associated with self-employment exit, but the association did not differ across cohorts.

The paper proceeds as follows. We first review the literature on self-employment exits in the context of the “necessity” vs. “opportunity” perspectives. Next, we describe our data and empirical approach. We then discuss our findings and conclude with thoughts about further research.

II. Previous Literature

Research into the determinants of entry into self-employment have primarily focused on two main avenues: necessity entrepreneurship and opportunity entrepreneurship.⁴ For example, the Global Entrepreneurship Monitor identifies these two paths in its research, focusing on the individual determinants of self-employment (Bosma, 2013). Work by Fairlie (2013) on entrepreneurship over the Great Recession found that higher local unemployment rates were positively correlated with business formation. Fairlie examines entry into self-employment using

⁴ Hurst & Pugsley (2015) offer an additional perspective for why individuals may become entrepreneurs. They emphasize the role of non-pecuniary benefits and entrepreneurs’ tastes for entering self-employment, and how these should be taken into consideration when designing policies aimed at benefiting entrepreneurship.

successive waves of the Current Population Survey. An interesting finding is that slack labor market conditions were more important to business formation than were home values and home ownership rates, suggesting that poor labor market conditions are a better predictor of self-employment than is access to capital. His work supports the finding that the unemployed are more likely to become self-employed, which was found by Evans and Leighton (1990), Carrasco (1999) and Farber (1999). In particular, using data from different supplements to the Current Population Survey, Farber (1999) found that workers who lost a job in one period were more likely than non-job-losers to enter alternative work, including independent contracting, self-employment, and temporary work arrangements. These findings seem to be consistent with the idea that many individuals become self-employed “out of necessity” when opportunities in the wage sector are limited, and that self-employment may be a transitory arrangement that tides workers over until they find work with another employer.

Within this framework, researchers have also examined how these two types of entrepreneurs differ in their outcomes, and the evidence is mixed. Findings from Carrasco (1999) and Block and Wagner (2010) seem to support the existence of two different types of entrepreneurs, while others (e.g., Block and Sandner, 2009) do not find such evidence. Using household data from Spain, Carrasco (1999) found that those self-employed with previous unemployment episodes are more likely to exit self-employment even after controlling for demographic and local economic conditions. Using data from a household survey in Germany, Block and Wagner (2010) define necessity entrepreneurs as those who transition to self-employment upon loss of a job through layoff, while opportunity entrepreneurs leave regular employment voluntarily to start a business. The authors found that necessity entrepreneurs had lower earnings than did opportunity entrepreneurs; moreover, standard earnings equations have

better explanatory power with the latter group. These findings highlight the need to distinguish between these two types in self-employment research. Meanwhile, others find that self-employment duration seems to respond primarily to economic and labor market conditions and/or demographic and socio-economic characteristics. Using the same German household survey data and necessity vs. opportunity self-employed identification as Block and Wagner (2010), Block and Sandner (2009) found that a simple comparison of necessity and opportunity entrepreneurs shows that self-employment duration is longer for the latter group; however, this result disappears once profession-specific education is controlled for, and furthermore, they do not control for local economic conditions. In contrast, using data from the 1979 National Longitudinal Survey of Youth, Rissman (2006) found that demographic and socio-economic characteristics do not seem to play a role in self-employment spell duration after controlling for aggregate and local labor market conditions. Instead, she finds that these economic factors have the most influential role in self-employment duration and that an improving economy is correlated with self-employment exit – which is more consistent with a self-employment ‘by necessity’ view.

In a broader context, there is evidence that self-employment is associated with socioeconomic and demographic characteristics. Among these characteristics, self-employment has been found to vary most strongly along racial and ethnic lines (Fairlie & Meyer, 1996, Fairlie, 2007 and forthcoming, Jarmin et al., 2014 and forthcoming). African-Americans have notably lower self-employment rates than other race groups; within race groups, women tend to have rates of self-employment that are about half that of men. Education is associated with entry and, more importantly for our work, type of entry. For instance, Block et al. (2011) found that self-employment entry has a strong, positive correlation with education, while Poschke (2013)

found that the relationship between education and entrepreneurship is U-shaped, with higher rates at low and high education levels. Further investigation indicates that the low-skilled self-employed are more likely to be “pushed” than “pulled” into self-employment.

While the studies examining the necessity and opportunity paths hypothesize a mechanism for the two different types of self-employment entrants, they often lack a precise definition of what exactly differentiates an “opportunity” from a “necessity” self-employment entrant, and their entrepreneur-type identification relies only on household survey data. Because we use survey as well as longitudinal administrative data, we are able to define the two types based both on prior attachment to the wage labor market and on secular labor market conditions at entry, and then follow their self-employment trajectory over time. Meanwhile, in alignment with the other studies mentioned, we control for local economic conditions and also examine the demographic characteristics that have been shown to influence self-employment duration.

III. Data

Our data come primarily from two sources: the ACS from survey years 2005 through 2009, and administrative records from the Internal Revenue Service (IRS). IRS data comprise individual tax returns (Form 1040) from 2003 to 2013, and W-2 data from 2005 to 2014. In addition, to control for ongoing local economic conditions, we link Bureau of Labor Statistics data on county and state annual unemployment rates.

The ACS is an ongoing representative survey of the U.S. population, collecting and providing socioeconomic, demographic, and housing data for both large and small geographic areas in the U.S. The ACS provides the demographic and socio-economic characteristics as well as some geographic identifiers (such as state or county) of the self-employed individuals in our

sample. We also use the ACS in combination with our tax data to identify entry into self-employment, as described further below.

Records are linked at the U.S. Census Bureau using a process whereby individuals in each data set were given a unique, protected identifier. When a Social Security Number (SSN) is available in a data set, the identifier is placed based on SSN. For records without an SSN, personally identifiable information such as name, address, and date of birth are used in probabilistic matching to assign persons to their identifier. The fields used for matching are compared against the same fields in a master reference file that contains the unique identifier. Personal information is then removed from each data set before a researcher may link the data sets together and use them for research purposes. For more information on the linking process, see Wagner and Layne (2014).

To capture all tax filers who appear in the successive years of the ACS, we first link all primary Form 1040 filers and then all secondary filers. In this way, we capture self-employed persons in cases when the spouse was the primary filer. We retain only the matching observations in our final sample. Information on the quality of the match appears in Panel A of Table 1. For each year of data, between 91 and 92 percent of persons who reported being self-employed as their main work activity in the ACS received the unique identifier. Of those who reported being self-employed, between 88 and 91 percent receive an identifier and are matched to a record in the Form 1040 data.

Our unique data allow us to determine entry into self-employment for each cohort (2005-2009) and follow cohort members' self-employment trajectories through time up to 2013. Furthermore, the W-2 data allow us to determine whether the individual exits self-employment toward the wage sector or non-participation (including unemployment) in any given year. We

can follow our first entry cohort (the 2005 cohort) for up to nine years (2006–2013), and our last one (the 2009 cohort) for up to five years (2009–2013). The early cohorts—2005, 2006, and potentially 2007⁵—entered self-employment during an economic expansion; thus, their members may be more representative of the self-employed “by opportunity” path. Meanwhile, those entering in 2008 through 2009 did so during the worst downturn since the Great Depression, and thus may be more representative of the self-employed “by necessity” path. That being said, the last two cohorts of our data (2008 and 2009) are likely to have experienced self-employment under different circumstances: while the 2009 cohort entered just before the (official) start of the recovery, the unemployment rate reached its peak in October 2009. The two cohorts likely face different outside opportunities at similar points in their self-employment trajectories.

As mentioned earlier, to further identify potential differences between “necessity” and “opportunity” self-employment, we include information on entrants’ pre-entry wage labor attachment. To do this, we use information the ACS provides on the number of weeks worked in the previous 12 months. Starting in 2008, the ACS included only a categorical variable, with weeks worked taking the following values: “no weeks,” “less than 13 weeks,” “14 to 26 weeks,” “27 to 39 weeks,” “40 to 47 weeks,” “48 to 49 weeks” and “50 to 52 weeks.” Our categories are based on the choices ACS provides, ensuring there are enough observations in each category to run our analysis, and grouping categories that are likely to “behave” similarly. The resulting categories are “less than 13 weeks,” “13 to 26 weeks,” “27 to 39 weeks,” and “40 weeks or more”. We then include the same wage labor attachment categories for years of data prior to 2008.

⁵ The official start of the Great Recession was December of 2007.

To identify our self-employed cohorts using a precise definition, we make use of ACS data in conjunction with the tax data. We first identify persons in the ACS who indicated (in the ACS) that self-employment was their main current or most recent job activity as of the survey year. We then subset on those individuals who filed a self-employment tax form for the same tax year as the survey year (e.g., for the 2005 cohort, filed as self-employed in 2005), but did not file a self-employment tax form in the prior two years. Self-employment tax forms include Schedule C and Schedule self-employed (SE); if either of these is first filed in the survey year, we consider that filer to have entered self-employment based on joint survey response and tax data. This definition allows us to isolate ACS respondents who entered self-employment in the year in question, both in terms of their response at the time of the survey and in subsequent claiming of self-employment earnings.⁶

We then impose some restrictions to our data to obtain our analytic sample. In this paper, we focus on self-employed individuals with a stronger, more continuous attachment to self-employment (once they become self-employed). For this reason, if a cohort member does not file any taxes or a Schedule C or SE for two or more consecutive years and then goes back to filing taxes or a Schedule C or SE, we exclude that person from our analysis. At the same time, we include individuals with one-year gaps in self-employment and do not treat these gaps as departures from self-employment. That is, if an individual files a Schedule C or SE in a given year, then he/she does not in the following year, but files either Schedule again in the subsequent year, we consider that individual to have remained self-employed during those three years.⁷ We

⁶ As mentioned earlier, please note that our self-employed sample does not include incorporated businesses since our tax data provides information only on whether individuals filed schedules C and SE. The exploration of incorporated as well as unincorporated self-employed individuals is left to future work as additional data becomes available.

⁷ The percentage of self-employed individuals with one-year gaps in self-employment is approximately 12 percent in the 2009 cohort, 15 percent in the 2008 cohort, 17 percent in the 2007 and 2006 cohorts and 36 percent in the 2005 cohort.

leave for future work the exploration of self-employment trajectories that are more volatile and with a more tenuous attachment to self-employment.

We then use W-2 records covering 2005 to 2014 to identify what happens to self-employment leavers. The records are linked using the same linking process described earlier. We examine whether those who exit self-employment appear to become unemployed (or drop from the labor force), or instead are found in the W-2 data - indicating entry into wage labor. Panel B of Table 1 shows how many people fit into this definition. Between 66 and 69 percent of ACS self-employed who were matched to a Form 1040 record filed a Schedule C or SE. The drop in percent matched may arise from a variety of measurement issues. The first is that individuals may report being self-employed on the ACS, but they do not claim their self-employment earnings (erroneously or fraudulently). The second is that individuals may confuse the definition of self-employment and may, in reality, receive a W-2. Finally, a person may report being self-employed erroneously to the ACS.

The final rows of Panel B reflect the final step of our definition, which requires that individuals did not file a Schedule C or SE in the preceding two tax years. We show the number of self-employment entrants per year and the percentage of the jointly defined self-employed that this represents—approximately 3.5 percent per year.

Table 2 presents the distributions of the demographic characteristics of interest as well as wage attachment groups for each of the self-employment cohorts. We use these same variables in our logit models, described in the next section, and include indicator variables for occupation and sector (not shown in Table 2). Some cohorts exhibit differences in race, age, educational

attainment, and family income that are statistically significant.⁸ In particular, the recession cohorts were more likely to be in the Black alone or Asian alone category,⁹ and had higher educational attainment.¹⁰ These cohorts were also slightly older, as seen in the greater proportion of entrants in the two highest age categories. The recession cohorts reported higher family income, with 17.9 percent reporting \$75,000 or more in 2008 versus 16.0 percent in the 2005 cohort. Finally, the recession cohorts had a higher percentage of self-employed working 13 weeks or less prior to entering self-employment, but the 2008 recession cohort also had a higher percentage of the group fully or nearly fully employed (40 weeks or more) in the wage sector prior to entering self-employment in 2008. This was not the case for the 2009 recession cohort though.¹¹

Table 3 shows summary statistics by pre-entry wage labor attachment. In every case except for citizenship status, there is a statistically significant difference in the distribution of demographic characteristics across wage-labor attachment (or weeks worked) categories. Whites and Hispanics had lower proportions of working less than 13 weeks pre-entry, as do men and those with higher educational attainment. Prime working-age entrants (those between the ages of 25 and 64) had higher proportions of self-employed working 40 or more weeks in the previous period, while those of retirement age had higher proportions in the less than 13 weeks. Finally,

⁸ Statistical significance was determined according to a Chi-squared test. We also examined sex, Hispanic origin, citizenship status, home ownership, and industry, but these did not vary between cohorts.

⁹ For example, in 2005 Black alone represented 2.8 percent and in 2008, 4.4 percent; in 2005 Asian alone represented 4.2 percent and in 2008, 4.4 percent.

¹⁰ For example, in 2005 those with a BS/BA represented 22 and in 2008, 23.1 percent; the comparable rates for Masters/PhD were 14.2 and 14.8, while for less than a high school degree the comparable rates were 7.8 and 7.1.

¹¹ In addition to labor market attachment, we also looked at household adjusted gross income and wage and salary income as reported on the 1040 (results available on request). This information reflects resources and labor market attachment at the household, rather than individual, level. We found that earnings and adjusted gross income decreased substantially for self-employment entrants between the 2008 and 2009 cohorts. The same measures for existing self-employed and wage-sector earners also decreased, but not as steeply.

and not unexpectedly, those with higher educational attainment were also represented at higher rates in the 40 weeks or more category.

IV. Methodology

To examine the potential differences in self-employment duration across wage-labor attachment groups, as well as between recession and pre-recession cohorts, we use binary and multinomial logistic regression analysis. We model the likelihood of self-employment exit as a function of pre-entry wage-labor attachment categories and individual characteristics while controlling for local economic conditions and industry, state, and year fixed effects. Specifically, we estimate model (1) below. Since we want to examine how the association between self-employment duration and demographic characteristics may vary across recession and non-recession cohorts, we estimate model (1) for each entry cohort independently.

$$\ln(h_{it}/1-h_{it}) = \alpha + \beta_1 WW_i + \beta_2 Race_i + \beta_3 Hisp_i + \beta_4 Sex_i + \beta_5 Cit_i + \beta_6 Age_i + \beta_7 Edu_i + \beta_8 Rent_i + \beta_9 FamInc_i + \beta_{10} Ind_i + \beta_{11} Occ_i + \beta_{12} Unemp_{ct} + \beta_{13} State_i + \beta_{14} Year_t + \beta_{15} WW*Year_t + \varepsilon_{it} \quad (1)$$

As mentioned earlier, in any given year during the period of analysis, our annual tax and W-2 data provide us with longitudinal information on whether the individual remains self-employed or exits self-employment towards either the wage sector or non-participation in the labor market (this includes either unemployment, retirement, or any other withdrawal from the labor force). We define an exit from self-employment as the failure to file either a Schedule C or a Schedule SE for two (or more) consecutive tax years. This is because, as explained in the Data section, we allow individuals in our analytic sample to have one-year gaps in self-employment. That is, if an individual is self-employed in year $t-1$, is not self-employed in year t , but re-appears as self-employed in $t+1$, we consider that individual to have remained self-employed throughout

that period, from $t-1$ to $t+1$. In our binary exit estimation, the dependent variable equals 1 if an individual exits self-employment, and equals zero otherwise.¹² In our multinomial model, the dependent variable reflects three outcome states: no exit from self-employment (the base category), exit to wage labor, or exit to non-participation. We define the latter two categories as follows: If t is the last year of self-employment for individual i and then we observe the individual in W-2 data in $t+1$, then we identify that individual as having become employed in the wage sector in year $t+1$. If we do not see him/her in the W-2 data in year $t+1$, then we consider that individual to have become unemployed or to have exited the labor market. In the binary as well as multinomial logits, standard errors are clustered at the county level to account for the inclusion of county-level unemployment rate.¹³

As we already stated, one of our primary goals is to examine whether “opportunity” vs. “necessity” self-employed individuals differ in their self-employment duration patterns. We thus include a categorical variable (WW in model (1) above) based on the number of weeks the self-employed individual worked in the wage sector the year prior to entering self-employment. We view individuals who worked less weeks (or with a lower “attachment” to wage labor) as having limited possibilities in the wage sector, thus aligning with the “necessity” view. Specifically, as described in Section III, we create four different wage-labor attachment categories: less than 13 weeks, 14-26 weeks, 27-39 weeks, and 40 weeks or more (from here on, referred to as “labor-attachment” groups). We interact this categorical variable with the year dummies to examine the possibility of differential patterns over time.

¹² Individuals that remain self-employed up to our last time period are treated as right-censored observations.

¹³ Because our analytic sample is selected based on attributes that do not enter into the calculation of weights, our logit estimation uses unweighted data.

Our other covariates include categorical variables representing the race, Hispanic origin, gender, citizenship status, age, educational attainment, family income, and housing tenure of the self-employed individual. The variable $Race_i$ contains five different race groups: White alone, Black alone, Asian alone, American Indian/Alaska Native (AIAN) alone, Native Hawaiian/Pacific Islander (NHPI) alone, or Other race. Persons of two or more races are included in the Other category. $Hisp_i$ includes those of any race who identify as Hispanic. Edu_i comprises five educational attainment categories: less than high school (HS), HS degree, some college, bachelor's degree (BS/BA), and Master's degree or beyond. $Htenure_i$ reflects whether the self-employed individual rents or owns a home. $Unemp_{ct}$ is the time-varying annual change in the county-level unemployment rate where the self-employed individual resides, and is included to control for ongoing local economic/labor market conditions affecting the individual's decision to exit self-employment. $Industry_i$, $State_i$, and $Year_t$ are dummy variables controlling for industry, state, and year fixed effects.

Because our sample includes self-employed individuals with self-employment gaps of one year, we could potentially overestimate exit rates if our last year of analysis were 2013. That is, individuals who do not file either a Schedule C or a Schedule SE in 2013 but re-appear as self-employed in 2014 would be counted as departing self-employment in 2013. For this reason, we treat 2012 as the last year of our analysis period. In other words, self-employed individuals who did not file a Schedule C or SE in 2012, but do so in 2013 are still considered self-employed in 2012.

V. Results

Panel A in Figure 1 shows unadjusted duration in years for all entry cohorts. Compared to the 2008 and 2009 recession cohorts, the 2005 and 2006 pre-recession cohorts have a higher

proportion of individuals that remain self-employed for five or more years, and a lower proportion that exit self-employment after only one year. For instance, 54.2 and 51.7 percent of the newly self-employed in the 2005 and 2006 cohorts remained self-employed five or more years respectively, compared to 48.6 and 43.9 percent in the 2008 and 2009 cohorts (respectively). Unadjusted durations across labor-attachment categories depict a similar picture (Panel B in Figure 1). We see that the higher labor-attachment groups tend to have higher proportions of individuals that remain self-employed for the entire five (or more) years of analysis. For each comparison, a Chi-squared test showed statistically significant differences in duration between these categories.

These unadjusted results suggest that there are differences, in self-employment exit by cohort and labor-attachment group, that are consistent with the two paths to self-employment. However, we need to examine whether the difference in unadjusted duration persists after controlling for a number of characteristics and other factors that can potentially affect self-employment duration. We now turn to examine these differences using logistic regression analysis and also explore whether the demographic characteristics associated with self-employment duration vary across cohorts.

For our binary and multinomial logistic regression results, we focus on showing predicted probabilities of exit by cohort and wage labor-attachment categories at each year in our period of analysis. The reason for this is that our variable of interest (WW) is interacted with year dummies, and the effects of interacted variables are difficult to interpret and visualize in nonlinear models, especially multinomial logits. We then test the statistical significance of the differences in exit probabilities across wage labor-attachment groups as well as across entry cohorts to explore the “necessity” vs. “opportunity” hypothesis. The predicted self-employment

exit probabilities are adjusted probabilities estimated after controlling for individual characteristics, local economic conditions, and industry and state fixed effects.¹⁴

Binary logistic regression results

In looking at differences in exit probabilities by pre-entry wage labor-attachment groups, Table 4 displays the binary exit probabilities of the labor-attachment groups over time for each cohort independently, Figures 2-4 show a visual representation of those probabilities, and Table 5 displays the statistical significance of the difference in probabilities with respect to the group with the lowest labor attachment, our base category (≤ 13 weeks).¹⁵ We find that differences in probabilities are most pronounced and consistently statistically significant between the highest and lowest labor-attachment groups, regardless of self-employment entry cohort (Table 5). For these groups, we see in Panels A-E of Figure 4 that self-employed individuals with the highest labor attachment (≥ 40 weeks) tend to have lower probabilities of exit compared to the lowest labor-attachment group (≤ 13 weeks). The differences between the ≤ 13 and the 27-39 weeks category are significant in many years and across cohorts; however, differences between the ≤ 13 and 14-26 weeks groups dwindle in economic significance and fall short of statistical significance for the 2007, 2008, and 2009 recession cohorts. For example, for the 2008 entry cohort, in 2010 the estimated exit rate is 20 percent for the ≤ 13 group, 18 percent for the 14-26 group, 15 percent for the 27-39 group and 15 percent for the ≥ 40 group. We also find that exit rates for the pre-recession cohorts and the lowest labor-attachment group become more volatile in 2009, the peak unemployment year of the recession, thus exacerbating the difference between the two categories at the labor attachment extremes. These findings are consistent with

¹⁴ Specifically, these are averaged predicted probabilities for each group calculated using the actual or observed values of the covariates.

¹⁵ Coefficients and p -values from the logistic regressions can be found in Table 7.

hypothesized differences between the expected trajectories of “necessity” vs. “opportunity” self-employed.

Turning our attention to differences in binary exit probabilities by entry cohort, Panel A of Figure 5 graphs the overall predicted probabilities for each entry cohort. Tests of statistical significance reveal that self-employment exit trajectories differ for the 2007 and 2009 cohort when compared with the 2005 and 2006 cohorts. We grouped observations by year after entry (in other words, the “first year” for the 2005 cohort would occur in year 2006, while the “first year” for the 2006 cohort is 2007). We then ran our binary model for each year-after-entry group, and tested whether our cohorts experienced different exit trajectories. The 2007 and 2009 cohorts leave self-employment earlier, with higher exit rates in the first year and fifth year for 2007 and in all years for 2009 (see Table 6). Differences between the 2008 cohort and earlier cohorts, and 2008 versus 2007, were not statistically significant. The 2009 cohort stands out in exhibiting earlier exit than all other cohorts in the third year from entry, but differences in exit probability were not statistically different from the 2008 cohort in the first and second year from entry.

In line with previous literature, which finds that self-employment success is associated with demographic characteristics (Block et al., 2011; Fairlie & Meyer, 1996), we next report on which characteristics are associated with a higher likelihood of self-employment exit, and also examine whether these characteristics vary across entry cohorts. Looking at the race, Hispanic origin and gender results from Table 7, we see that these characteristics do not seem to be consistently associated with the probability of exiting self-employment. For those results that are statistically significant, the pattern does not align with pre-recession vs. recession entry differences. For example, self-employment exit is more likely for the Black alone group in the 2006 and 2009 cohorts, but not in the other cohorts. Meanwhile, being a citizen is associated

with a lower likelihood of self-employment exit for pre-recession entry cohorts (2005 and 2006), but it is not significant for recession-entry cohorts. Regarding education and age, both variables are associated with the likelihood of exiting self-employment in most entry cohorts. Specifically, relative to having a bachelor's degree, individuals with lower educational attainment tend to have a higher likelihood of self-employment exit. Similarly, the youngest and older groups (55-64 and 65 or more) are more likely to exit self-employment relative to the 25-34 year olds.¹⁶

In contrast with previous literature, we found that local economic conditions, reflected in county-level unemployment rate, were not predictive of self-employment exit. Together with our observed differences between cohorts, these results highlight the relevance of the overall economic cycle on self-employment duration.

Multinomial logit results

In the preceding section, we established that groups with a higher labor market attachment had a statistically significant lower probability of exit compared with other groups. A multinomial logit model shows that this result is driven by the lower likelihood of exit towards non-participation for this group, a result that is also statistically significant. For example, the predicted probability of exiting to wage work for this group after one year of self-employment ranges from 0.13 to 0.17, while the predicted probability of exit to non-participation ranges from 0.05 to 0.06 (Figure 6 and corresponding Table 8).

When examining self-employment to non-participation exit probabilities across labor-attachment groups (Figure 7 and corresponding Table 8), we find that differences between the group with the lowest attachment (≤ 13 weeks) and the two higher labor-attachment groups (27-39 and ≥ 40 weeks) are the most pronounced and consistent across cohorts and years. That

¹⁶ A robustness check indicated that our results were not sensitive to excluding college-age adults from our sample.

is, the lowest attachment group has a higher probability of exiting from self-employment into non-participation relative to the higher attachment groups regardless of entry cohort.¹⁷ These differences are also statistically significant (Table 9). We also find that exit rates for the two groups with lower labor attachment tend to be more volatile—although this could be due to the lower number of observations in these groups in any particular year.

Meanwhile, differences in exit probabilities from self-employment to the wage sector across labor-attachment groups are mostly not statistically significant. It is worth mentioning, though, that when comparing the highest and lowest labor-attachment groups, these comparisons had the highest incidence of statistically significant differences (see Table 9).

Comparing now both self-employment exit toward the wage sector as well as toward non-participation within each pre-entry labor attachment group, we see that the lowest labor-attachment group behaves differently from the highest attachment group (Figure 8). For the lowest labor-attachment group (≤ 13 weeks), the self-employment exit probability toward non-participation is higher than the exit probability toward the wage sector, but this is reversed in the group with the highest labor attachment (≥ 40 weeks) for every entry cohort. The 27-39 weeks group shows a pattern resembling the highest labor-attachment group, while the 14-26 weeks group does not show a clear pattern (Figures 9 and 10). For this last group, the exit probability towards non-participation may be higher or lower than the exit probability toward the wage sector depending on the cohort and year under examination.

Tests of differences in trajectory between cohorts, similar to those described earlier for the binary model, indicate that there were cohort differences for the low-attachment group that

¹⁷ The only exception is the 27-39 group for the 2005 cohort in 2008 and 2010.

exited for the wage sector,¹⁸ but not for the other labor-attachment groups and exit destinations. The lowest labor-attachment group from the 2007 cohort experienced a higher rate of exit to the wage sector in the first year post-entry (a predicted probability of 0.127 versus less than 0.1 for every other cohort: see Table 8).

These findings indicate that there are some consistent self-employment duration differences between the groups with the highest and lowest pre-entry labor attachment, which is consistent with the view that there are outcome differences between “necessity” and “opportunity” self-employment types. In fact, not only are there differences between entry type and duration, the exit destination for lowest and highest labor-attachment groups differ as well: the lowest group is likely to drop their participation in the labor market upon exit while the highest group is likely to enter wage labor.

In terms of demographic characteristics, we find results for race that are similar to those from our binary logit (see Table 10). For citizenship status, our multinomial results reveal that the lower likelihood of exit seems to be driven by self-employment exit toward the wage sector. That is, being a non-citizen is associated with a lower likelihood of self-employment exit toward the wage sector and the association is statistically significant for the 2005, 2006 and 2008 cohorts (coefficient estimates are -0.31, -0.21 and -0.34 respectively). Meanwhile, the association between being a citizen and the probability of self-employment exit toward non-participation is not statistically significant for any of the cohorts. Also note that, in contrast with the binary logit results, the divergence between pre-recession and recession entry cohorts disappears: non-citizens in the 2008 recession cohort as well as in the 2005 and 2006 non-recessionary cohorts have a lower likelihood of exiting self-employment (toward the wage

¹⁸ Results available upon request.

sector). Self employed individuals with lower educational attainment have a higher probability of exiting self-employment relative to self-employed with a bachelor's degree. This is also mostly the case for self-employment exit towards the wage sector as well as non-participation. As for the age results, the binary logit analysis showed that the youngest and the older groups have a higher probability of exiting self-employment relative to the 25 to 34-year-olds. However, the multinomial results show a different pattern for self-employment exit towards the wage sector vs. non-participation. The very young (< 25 years) are more likely to exit self-employment towards the wage sector and the older categories (45 and older) towards non-participation.¹⁹

VI. Conclusions

Our results are consistent with the story that economic and employment conditions prior to entering self-employment are correlated with self-employment duration. While we found some evidence of an entry cohort effect in self-employment duration, specifically for the 2009 cohort, our results are stronger regarding the persistent differences in self-employment duration between “necessity” and “opportunity” self-employed individuals when they are defined by previous wage labor attachment. For all entry cohorts, we saw a higher likelihood of self-employment exit towards non-participation for those who were less attached to the wage sector prior to entry.

Our findings also showed that educational attainment and age are associated with self-employment exit, whether towards the wage sector or non-participation. However, their role does not vary by whether self-employment entry occurred during the recession or prior to it. Other demographic characteristics (namely, race, Hispanic origin, gender and citizenship status) do not seem to be consistently associated with the likelihood of exiting self-employment.

¹⁹ Similarly to the binomial results, a robustness check indicated that our multinomial results were not sensitive to excluding college-age adults from our sample.

Our results are consistent with those found by Block & Wagner (2010) in that they find differences between opportunity and necessity entrepreneurs, even though their outcome variable is self-employment earnings (not duration). They are also consistent with those in Carrasco (1999), where she finds that individuals that were unemployed prior to becoming self-employed had higher failure rates. On the other hand, unlike in other studies (Rissman 2006), ongoing local economic conditions (represented by county-level annual changes in unemployment rates in our model) do not seem to play a role in self-employment duration.

Our findings add to the understanding of self-employment behavior and also shed light into the role of self-employment as a strategy to cope with unemployment. In this way, our results can help inform and tailor policies aimed at stimulating self-employment and helping the self-employed. There is evidence indicating that unemployed individuals are more likely to enter self-employment (Carrasco 1999). At the same time, we find that self-employed individuals with a lower wage sector attachment prior to entry into self-employment are more prone to leave for unemployment (or non-participation) once they exit self-employment. This raises the question of whether self-employment and education/training policies could be better tailored according to the “necessity” vs “opportunity” types. Perhaps the “opportunity” entrepreneur would benefit from, for instance, ease of access to capital, and the “necessity” self-employed would instead be better served by education/training programs.

Our study points to the need of additional research along the “necessity” vs “opportunity” perspectives and a better understanding of the dynamics between self-employment and the wage sector (particularly in light of the gig economy). There are a number of additional issues we plan to examine in future work. One is to explore other outcome measures such as self-employment earnings and becoming an employer. With additional tax data, we would also like to expand our

sample to include self-employed who incorporate their businesses at entry. We also plan to refine our definition of self-employment with more granular tax data (including self-employment earnings reported on information returns) and explore self-employment trajectories of individuals with a more tenuous and intermittent attachment to self-employment. In addition, future work will further investigate the role of prior attachment to wage sector – including looking at groups with potentially different labor market experiences (e.g., older vs. younger). Finally, we also plan to look into wage sector and self-employment dynamics of the self-employed – particularly in light of gig economy.

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Tables & Figures

Table 1. Identifier application and match rates for reported self-employed in ACS

Year	2005	2006	2007	2008	2009
Panel A					
Number reporting SE in ACS	312,622	312,622	305,972	290,309	284,888
Number of ACS SE with identifier	287,739	287,739	280,797	265,235	259,849
Percent of total	92.0%	92.0%	91.8%	91.4%	91.2%
Number matched to same-year 1040	274,569	273,792	277,393	256,577	251,035
Percent of total	87.8%	87.6%	90.7%	88.4%	88.1%
Panel B					
Defined as SE in both ACS and 1040	182,359	188,271	187,466	172,612	170,173
Percent of matched records	66.4%	68.8%	67.6%	67.3%	67.8%
Number defined as new SE	6,462	6,661	6,784	6,085	6,019
Percent of matched SE	3.5%	3.5%	3.6%	3.5%	3.5%

Source: 2005–2009ACS linked with 1040 data from 2003-2013.

Table 2: Demographics characteristics of entry cohorts

	2005 cohort	2006 cohort	2007 cohort	2008 cohort	2009 cohort
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Race					
White alone	89.4	87.8	88.6	88.0	88.4
Black alone	2.8	3.6	3.2	4.2	3.4
Asian alone	4.2	4.0	4.1	4.4	4.3
Other	3.6	4.7	4.1	3.4	3.9
Hispanic origin					
Non-hispanic	94.4	92.8	92.6	92.4	92
Hispanic	5.7	7.2	7.4	7.6	8.0
Gender					
Female	38.3	38.1	37.8	37.7	37.0
Male	61.7	61.9	62.2	62.3	63.0
Citizenship status					
Citizen	95.5	95.4	95.4	94.8	95.1
Non-citizen	4.6	4.6	4.6	5.2	4.9
Education					
Less than HS	7.8	8.2	7.6	7.1	7.1
HS	24.5	25.8	25.5	24.1	22.8
Some college	31.5	31.0	30.1	30.9	31.3
BS/BA	22.0	21.5	22.3	23.1	23.3
Master/PhD	14.2	13.5	14.5	14.8	15.5
Age					
<25	4.5	4.8	5.2	4.7	4.8
25-34	17.7	16.8	16.7	16.7	15.7
35-44	26.2	25.2	24.3	23.7	22.3
45-54	25.2	26.2	25.2	25.3	25.8
55-64	16.6	18.1	18.9	19.3	20.4
>=65	9.9	8.9	9.8	10.3	11.0
Family income					
<\$25K	49.6	50.3	48.0	47.5	48.3
\$25-50K	21.5	22	22.1	20.7	20.7
\$50-75K	12.9	12.2	12.8	13.6	13.1
\$75+	16.0	15.3	16.8	17.9	17.4
missing	0.0	0.2	0.4	0.3	0.4
Pre-entry wage attachment					
<=13 weeks	15.2	15.9	15.5	16.3	17.6
14-26 weeks	8.9	8.1	8.0	6.0	5.9
27-39 weeks	6.3	6.3	6.7	6.9	8.6
>=40 weeks	69.6	69.8	69.8	70.8	67.9
N	6462	6661	6784	6085	6019

Source: 2005–2009 ACS linked with 1040 data from 2003-2013.

Table 3. Summary statistics by pre-entry wage labor attachment group

	<=13 weeks	14-26 weeks	27-39 weeks	>=40 weeks
Total	100.0%	100.0%	100.0%	100.0%
Race				
White alone	87.5%	87.9%	87.8%	88.8%
Black alone	4.1%	4.3%	3.5%	3.2%
Asian alone	4.4%	3.6%	3.7%	4.2%
Other	4.1%	4.2%	4.9%	3.8%
Hispanic origin				
Non-hispanic	93.9%	92.3%	91.8%	92.8%
Hispanic	6.1%	7.7%	8.2%	7.2%
Gender				
Female	51.4%	52.1%	45.1%	32.4%
Male	48.6%	47.9%	54.9%	67.6%
Citizenship status				
Citizen	95.6%	96.0%	94.3%	95.1%
Non-citizen	4.4%	4.0%	5.7%	4.9%
Education				
Less than HS	10.2%	7.9%	8.3%	6.8%
HS	24.5%	24.0%	24.0%	24.7%
Some college	30.3%	33.0%	31.9%	30.8%
BS/BA	21.5%	22.0%	22.4%	22.7%
Master/PhD	13.4%	13.2%	13.3%	15.0%
Age				
<25	5.0%	8.2%	7.1%	4.2%
25-34	12.4%	19.3%	21.1%	17.0%
35-44	18.0%	23.1%	22.6%	26.2%
45-54	19.6%	22.9%	23.0%	27.4%
55-64	22.0%	18.5%	18.0%	17.9%
>=65	23.1%	8.0%	8.3%	7.3%
Family income				
<\$25K	43.1%	42.3%	49.4%	50.7%
\$25-50K	19.5%	21.2%	20.7%	22.0%
\$50-75K	13.7%	14.9%	12.3%	12.6%
\$75+	23.0%	21.0%	17.3%	14.7%
missing	0.7%	0.5%	0.2%	0.1%
N	5,149	2,369	2,221	22,272

Source: 2005–2009ACS linked with 1040 data from 2003-2013.

Table 4: Binomial logit results – Predicted probability of exit by cohort and wage labor attachment group

Weeks	2005 cohort			2006 cohort			2007 cohort			2008 cohort			2009 cohort		
	Pred. prob	95% conf. interval		Pred. prob	95% conf. interval		Pred. prob	95% conf. interval		Pred. prob	95% conf. interval		Pred. prob	95% conf. interval	
<i>All weeks</i>															
2006	0.199	0.186	0.212												
2007	0.131	0.121	0.140	0.207	0.195	0.218									
2008	0.117	0.105	0.128	0.152	0.141	0.163	0.231	0.220	0.241						
2009	0.111	0.091	0.131	0.132	0.113	0.151	0.148	0.130	0.165	0.212	0.186	0.237			
2010	0.097	0.086	0.108	0.109	0.098	0.120	0.138	0.126	0.150	0.158	0.145	0.172	0.245	0.229	0.261
2011	0.107	0.094	0.119	0.105	0.093	0.117	0.118	0.105	0.132	0.148	0.131	0.164	0.164	0.153	0.176
2012	0.100	0.087	0.112	0.126	0.111	0.141	0.131	0.116	0.147	0.142	0.125	0.160	0.162	0.147	0.177
<i><=13</i>															
2006	0.269	0.240	0.299												
2007	0.167	0.139	0.194	0.253	0.227	0.279									
2008	0.135	0.106	0.164	0.169	0.141	0.196	0.303	0.276	0.331						
2009	0.164	0.125	0.203	0.201	0.164	0.238	0.189	0.156	0.222	0.269	0.230	0.308			
2010	0.109	0.077	0.140	0.154	0.123	0.186	0.178	0.146	0.209	0.203	0.170	0.235	0.301	0.272	0.330
2011	0.142	0.105	0.178	0.130	0.099	0.161	0.152	0.119	0.186	0.166	0.132	0.200	0.202	0.170	0.233
2012	0.102	0.067	0.138	0.159	0.122	0.196	0.146	0.109	0.183	0.183	0.143	0.223	0.203	0.170	0.237
<i>14-26</i>															
2006	0.214	0.181	0.247												
2007	0.158	0.121	0.195	0.223	0.187	0.260									
2008	0.134	0.098	0.169	0.211	0.170	0.252	0.217	0.183	0.251						
2009	0.117	0.077	0.156	0.139	0.097	0.181	0.171	0.134	0.207	0.240	0.190	0.289			
2010	0.150	0.108	0.193	0.130	0.089	0.170	0.164	0.121	0.208	0.175	0.129	0.221	0.207	0.164	0.251
2011	0.121	0.077	0.164	0.121	0.079	0.163	0.149	0.104	0.193	0.143	0.097	0.189	0.202	0.156	0.248
2012	0.132	0.088	0.177	0.100	0.057	0.143	0.132	0.088	0.175	0.151	0.093	0.209	0.221	0.168	0.274
<i>27-39</i>															
2006	0.195	0.158	0.232												
2007	0.121	0.085	0.157	0.177	0.141	0.213									
2008	0.157	0.112	0.202	0.144	0.107	0.181	0.228	0.191	0.266						
2009	0.134	0.085	0.183	0.129	0.087	0.172	0.152	0.112	0.192	0.201	0.157	0.244			
2010	0.093	0.051	0.135	0.106	0.069	0.144	0.123	0.083	0.163	0.146	0.104	0.187	0.265	0.222	0.307
2011	0.086	0.047	0.126	0.111	0.071	0.151	0.114	0.073	0.154	0.158	0.114	0.202	0.181	0.143	0.219
2012	0.085	0.040	0.129	0.111	0.068	0.155	0.127	0.080	0.174	0.148	0.100	0.196	0.149	0.110	0.188
<i>>=40</i>															
2006	0.182	0.168	0.196												
2007	0.121	0.110	0.132	0.197	0.184	0.211									
2008	0.108	0.096	0.121	0.142	0.129	0.155	0.217	0.204	0.229						
2009	0.100	0.080	0.120	0.117	0.098	0.135	0.136	0.118	0.155	0.197	0.172	0.223			
2010	0.089	0.076	0.101	0.099	0.086	0.111	0.129	0.116	0.142	0.149	0.135	0.164	0.230	0.213	0.248
2011	0.101	0.086	0.115	0.098	0.085	0.112	0.110	0.096	0.124	0.143	0.125	0.161	0.150	0.138	0.163
2012	0.096	0.083	0.110	0.124	0.108	0.140	0.129	0.112	0.145	0.133	0.115	0.152	0.150	0.133	0.166

Source: 2005–2009ACS linked with 1040 data from 2003–2013.

Table 5: Binomial logit results – Statistical significance of differences in predicted probabilities of wage-labor attachment groups by cohort

	2005 cohort		2006 cohort		2007 cohort		2008 cohort		2009 cohort	
	Difference in predicted probs	z	Difference in predicted probs	z	Difference in predicted probs	z	Difference in predicted probs	z	Difference in predicted probs	z
14-26 vs <=13										
2006	-0.055***	-2.61								
2007	-0.009	-0.37	-0.030	-1.35						
2008	-0.001	-0.06	0.042*	1.80	-0.086***	-3.73				
2009	-0.047*	-1.93	-0.062**	-2.40	-0.018	-0.83	-0.029	-1.11		
2010	0.042	1.55	-0.025	-0.88	-0.013	-0.50	-0.028	-1.02	-0.094***	-3.67
2011	-0.021	-0.75	-0.009	-0.35	-0.004	-0.14	-0.023	-0.79	0.000	0.00
2012	0.030	1.07	-0.059**	-2.09	-0.014	-0.51	-0.032	-0.91	0.017	0.57
27-39 vs <=13										
2006	-0.075***	-3.37								
2007	-0.045**	-2.01	-0.076***	-3.45						
2008	0.022	0.82	-0.025	-1.01	-0.075***	-3.20				
2009	-0.030	-1.16	-0.071***	-2.80	-0.037	-1.54	-0.068***	-3.00		
2010	-0.016	-0.58	-0.048*	-1.84	-0.054**	-2.12	-0.057**	-2.23	-0.037	-1.51
2011	-0.055**	-2.03	-0.019	-0.77	-0.039	-1.56	-0.008	-0.28	-0.021	-0.80
2012	-0.017	-0.60	-0.048*	-1.73	-0.019	-0.65	-0.035	-1.17	-0.054**	-2.12
40+ vs <=13										
2006	-0.087***	-5.90								
2007	-0.045***	-3.10	-0.056***	-3.85						
2008	-0.027*	-1.68	-0.027*	-1.78	-0.086***	-5.58				
2009	-0.064***	-3.52	-0.084***	-5.00	-0.053***	-3.35	-0.072***	-4.56		
2010	-0.020	-1.18	-0.055***	-3.22	-0.048***	-2.90	-0.053***	-3.19	-0.071***	-4.80
2011	-0.041**	-2.00	-0.032*	-1.88	-0.043**	-2.37	-0.022	-1.27	-0.051***	-3.06
2012	-0.006	-0.33	-0.035*	-1.82	-0.017	-0.90	-0.049***	-2.50	-0.054***	-2.95

Source: 2005–2009ACS linked with 1040 data from 2003-2013. Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 6: Tests of cohort differences in predicted probabilities of exit by time in self-employment

Exit in first year								
Cohort	2005		2006		2007		2008	
	z	P> z	z	P> z	z	P> z	z	P> z
2006	-0.83	0.49						
2007	-3.23	0.01	-2.79	0.01				
2008	-1.55	0.12	-1.17	0.24	0.87	0.39		
2009	-3.66	0.00	-2.84	0.01	0.32	0.75	-0.41	0.68
Exit in second year								
Cohort	2005		2006		2007		2008	
	z	P> z	z	P> z	z	P> z	z	P> z
2006	-1.72	0.09						
2007	-0.73	0.47	0.45	0.66				
2008	-2.77	0.01	-0.70	0.49	-1.40	0.16		
2009	-3.91	0.00	-1.68	0.09	0.78	0.43	-1.30	0.20
Exit in third year								
Cohort	2005		2006		2007		2008	
	z	P> z	z	P> z	z	P> z	z	P> z
2006	-0.57	0.57						
2007	-2.27	0.02	-0.98	0.33				
2008	-2.61	0.01	-1.32	0.19	-0.91	0.36		
2009	-3.96	0.00	-2.37	0.02	-2.88	0.00	-2.31	0.02
Exit in fourth year								
Cohort	2005		2006		2007			
	z	P> z	z	P> z	z	P> z		
2006	0.92	0.36						
2007	0.63	0.53	-0.47	0.64				
2008	-0.33	0.74	-2.54	0.01	-2.26	0.02		
Exit in fifth year								
Cohort	2005		2006					
	z	P> z	z	P> z				
2006	-1.17	0.09						
2007	-3.59	0.00	-2.83	0.01				
Exit in sixth year								
Cohort	2005							
	z	P> z						
2006	-2.01	0.04						

Note: The table shows the results of testing that the predicted probabilities of exit, measured at the same time from entry, are the same for cohort *i* versus cohort *j*. For example, "exit in the first year" is 2006 for the 2005 cohort and 2007 for the 2006 cohort. Tests were calculated by running a single model for each time from entry category, computing predicted probabilities for each cohort, and testing the resulting predicted probabilities using the lincom procedure in Stata.

Table 7: Binomial logit results – Self-employment exit

	2005 cohort		2006 cohort		2007 cohort		2008 cohort		2009 cohort	
	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z
<i>Weeks worked last year</i>										
<=13	(base)									
14-26	-0.261	0.03	-0.061	0.63	-0.364	0.01	-0.122	0.40	-0.474	0.00
27-39	-0.387	0.00	-0.373	0.01	-0.311	0.02	-0.302	0.03	-0.156	0.22
>=40	-0.425	0.00	-0.258	0.00	-0.368	0.00	-0.362	0.00	-0.326	0.00
<i>Weeks wrkd last yr*Year</i>										
14-26#2007	0.248	0.26								
14-26#2008	0.302	0.18	0.448	0.03						
14-26#2009	-0.086	0.73	-0.278	0.23	0.335	0.10				
14-26#2010	0.693	0.01	-0.035	0.90	0.368	0.10	-0.029	0.90		
14-26#2011	0.127	0.65	0.087	0.74	0.432	0.09	-0.020	0.94	0.511	0.03
14-26#2012	0.611	0.04	-0.367	0.23	0.342	0.21	-0.077	0.80	0.617	0.01
27-39#2007	0.056	0.82								
27-39#2008	0.612	0.01	0.274	0.24						
27-39#2009	0.192	0.46	-0.067	0.79	0.130	0.56				
27-39#2010	0.260	0.45	0.032	0.91	-0.039	0.88	-0.013	0.95		
27-39#2011	-0.132	0.69	0.286	0.29	0.056	0.83	0.338	0.17	0.049	0.82
27-39#2012	0.226	0.56	0.046	0.87	0.233	0.42	0.138	0.58	-0.195	0.39
>=40#2007	0.141	0.32								
>=40#2008	0.264	0.10	0.122	0.36						
>=40#2009	-0.056	0.73	-0.322	0.02	0.069	0.61				
>=40#2010	0.293	0.15	-0.185	0.25	0.085	0.56	0.038	0.79		
>=40#2011	0.126	0.54	0.012	0.94	0.083	0.61	0.242	0.12	0.011	0.93
>=40#2012	0.452	0.04	0.036	0.83	0.318	0.06	0.036	0.82	-0.004	0.98
<i>Year</i>										
2006	(base)									
2007	-0.627	0.00	(base)							
2008	-0.880	0.00	-0.523	0.00	(base)					
2009	-0.649	0.00	-0.307	0.04	-0.640	0.00	(base)			
2010	-1.131	0.00	-0.634	0.00	-0.717	0.00	-0.381	0.03	(base)	
2011	-0.824	0.00	-0.836	0.00	-0.903	0.00	-0.633	0.00	-0.545	0.00
2012	-1.200	0.00	-0.596	0.00	-0.955	0.00	-0.511	0.01	-0.535	0.00
N	29,498		26,732		23,459		18,155		14,363	
Pseudo-Rsq	0.0364		0.0367		0.0387		0.0334		0.0305	

Table 7(cont'd): Binomial logit results – Self-employment exit

	2005 cohort		2006 cohort		2007 cohort		2008 cohort		2009 cohort	
	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z
<i>Race</i>										
White alone	(base)									
Black alone	0.046	0.67	0.163	0.07	-0.041	0.69	0.031	0.75	0.284	0.01
Asian alone	0.043	0.71	0.320	0.00	0.020	0.88	0.065	0.56	0.157	0.16
Other	0.127	0.24	0.137	0.15	0.115	0.31	0.059	0.65	0.058	0.64
<i>Hispanic origin</i>										
Non-Hispanic	(base)									
Hispanic	0.061	0.51	0.029	0.75	-0.178	0.04	-0.104	0.21	-0.016	0.86
<i>Sex</i>										
Female	0.038	0.35	0.082	0.04	0.036	0.43	-0.069	0.15	-0.119	0.01
Male	(base)									
<i>Citizenship</i>										
Citizen	(base)									
Non-citizen	-0.234	0.01	-0.240	0.02	-0.143	0.16	-0.127	0.18	-0.066	0.59
<i>Education</i>										
Less than HS	0.252	0.00	0.388	0.00	0.108	0.16	0.476	0.00	0.376	0.00
HS degree	0.201	0.00	0.238	0.00	0.083	0.17	0.222	0.00	0.181	0.01
Some college	0.162	0.00	0.210	0.00	0.141	0.01	0.161	0.01	0.054	0.42
BS/BA	(base)									
Master's or more	-0.045	0.49	-0.018	0.78	-0.062	0.38	-0.058	0.43	-0.078	0.30
<i>Age</i>										
<25	0.137	0.15	0.199	0.04	0.277	0.00	0.205	0.05	0.210	0.07
25-34	(base)									
35-44	-0.053	0.35	0.084	0.20	0.069	0.28	-0.029	0.67	0.010	0.89
45-54	0.019	0.74	0.099	0.10	0.142	0.03	-0.003	0.96	0.106	0.15
55-64	0.258	0.00	0.378	0.00	0.243	0.00	0.156	0.04	0.317	0.00
>=65	0.707	0.00	0.717	0.00	0.785	0.00	0.454	0.00	0.428	0.00
Unemp. rate change	0.001	1.00	-0.007	0.97	0.119	0.40	0.161	0.36	-0.313	0.48
<i>Constant</i>	-1.572	0.00	-1.794	0.00	-1.434	0.00	-1.585	0.00	-1.137	0.00
N	29,498		26,732		23,459		18,155		14,363	
Pseudo-Rsq	0.0364		0.0367		0.0387		0.0334		0.0305	

Source: 2005–2009ACS linked with 1040 data from 2003-2013.

Table 8: Multinomial logit results – Predicted probabilities of SE exit by cohort and wage-labor attachment group

Outcome	Weeks workd	Year	2005 cohort			2006 cohort			2007 cohort			2008 cohort			2009 cohort		
			Pred prob	95% conf int		Pred prob	95% conf int		Pred prob	95% conf int		Pred prob	95% conf int		Pred prob	95% conf int	
Remains self-emp.	<=13	2006	0.732	0.703	0.762												
		2007	0.834	0.806	0.861	0.752	0.726	0.778									
		2008	0.866	0.837	0.895	0.829	0.802	0.857	0.699	0.671	0.726						
		2009	0.839	0.800	0.877	0.793	0.753	0.833	0.811	0.778	0.845	0.734	0.695	0.773			
		2010	0.889	0.858	0.921	0.846	0.815	0.878	0.822	0.790	0.853	0.797	0.764	0.830	0.702	0.015	0.731
		2011	0.853	0.815	0.891	0.870	0.839	0.901	0.846	0.811	0.880	0.833	0.799	0.868	0.797	0.016	0.829
		2012	0.894	0.857	0.931	0.841	0.804	0.878	0.852	0.814	0.890	0.815	0.775	0.856	0.795	0.017	0.829
	14-26	2006	0.787	0.754	0.820												
		2007	0.842	0.798	0.886	0.777	0.740	0.814									
		2008	0.867	0.831	0.902	0.788	0.734	0.843	0.784	0.750	0.818						
		2009	0.883	0.814	0.953	0.861	0.798	0.923	0.829	0.780	0.878	0.759	0.709	0.809			
		2010	0.847	0.764	0.930	0.871	0.811	0.931	0.835	0.762	0.908	0.825	0.779	0.871	0.794	0.022	0.837
		2011	0.878	0.834	0.922	0.879	0.810	0.949	0.850	0.786	0.914	0.857	0.787	0.927	0.798	0.035	0.866
		2012	0.865	0.802	0.927	0.899	0.851	0.947	0.867	0.815	0.918	0.850	0.795	0.905	0.778	0.032	0.841
	27-39	2006	0.805	0.768	0.843												
		2007	0.879	0.842	0.916	0.823	0.787	0.859									
		2008	0.843	0.763	0.924	0.856	0.812	0.900	0.772	0.734	0.809						
		2009	0.868	0.823	0.913	0.871	0.796	0.945	0.848	0.797	0.898	0.798	0.754	0.842			
		2010	0.906	0.864	0.948	0.894	0.849	0.939	0.877	0.837	0.917	0.855	0.779	0.930	0.736	0.021	0.778
		2011	0.913	0.875	0.951	0.890	0.850	0.929	0.886	0.829	0.944	0.842	0.798	0.887	0.819	0.024	0.867
		2012	0.914	0.865	0.964	0.889	0.837	0.941	0.873	0.818	0.928	0.852	0.794	0.910	0.851	0.025	0.900
	>=40	2006	0.818	0.804	0.832												
		2007	0.879	0.847	0.911	0.802	0.789	0.816									
		2008	0.892	0.829	0.954	0.858	0.816	0.900	0.783	0.771	0.796						
2009		0.899	0.846	0.952	0.883	0.815	0.952	0.863	0.803	0.924	0.801	0.774	0.828				
2010		0.911	0.849	0.973	0.901	0.860	0.943	0.871	0.817	0.925	0.851	0.771	0.931	0.768	0.009	0.786	
2011		0.899	0.857	0.941	0.901	0.865	0.938	0.890	0.860	0.921	0.858	0.785	0.931	0.850	0.023	0.894	
2012		0.903	0.890	0.917	0.876	0.859	0.892	0.871	0.854	0.888	0.867	0.849	0.886	0.851	0.008	0.867	

Table 8 (cont'd): Multinomial logit results – Predicted probabilities of SE exit by cohort and wage-labor attachment group

Outcome	Weeks workd	Year	2005 cohort			2006 cohort			2007 cohort			2008 cohort			2009 cohort		
			Pred prob	95% conf int		Pred prob	95% conf int		Pred prob	95% conf int		Pred prob	95% conf int		Pred prob	95% conf int	
SE to wage	<=13	2006	0.097	0.078	0.116												
		2007	0.066	0.048	0.085	0.095	0.078	0.111									
		2008	0.052	0.033	0.071	0.055	0.039	0.071	0.127	0.108	0.146						
		2009	0.063	0.038	0.088	0.071	0.049	0.094	0.067	0.047	0.087	0.079	0.057	0.102			
		2010	0.037	0.019	0.055	0.063	0.043	0.083	0.067	0.047	0.086	0.076	0.056	0.095	0.098	0.009	0.116
		2011	0.038	0.020	0.057	0.042	0.024	0.060	0.064	0.042	0.086	0.064	0.042	0.085	0.074	0.010	0.093
	14-26	2012	0.033	0.014	0.052	0.060	0.035	0.084	0.051	0.029	0.073	0.067	0.044	0.091	0.086	0.011	0.108
		2006	0.122	0.095	0.149												
		2007	0.091	0.055	0.128	0.130	0.100	0.160									
		2008	0.076	0.049	0.103	0.126	0.077	0.175	0.114	0.088	0.140						
		2009	0.067	0.005	0.129	0.085	0.033	0.138	0.103	0.063	0.144	0.118	0.082	0.154			
		2010	0.061	0.009	0.113	0.055	0.019	0.090	0.091	0.027	0.156	0.079	0.046	0.112	0.107	0.016	0.140
	27-39	2011	0.060	0.026	0.094	0.072	0.014	0.131	0.064	0.025	0.103	0.096	0.030	0.163	0.123	0.030	0.181
		2012	0.041	0.008	0.073	0.078	0.031	0.124	0.054	0.021	0.086	0.079	0.036	0.122	0.132	0.027	0.186
		2006	0.112	0.082	0.143												
		2007	0.075	0.041	0.109	0.119	0.088	0.150									
		2008	0.098	0.026	0.171	0.091	0.052	0.130	0.135	0.105	0.166						
		2009	0.066	0.032	0.100	0.085	0.018	0.152	0.099	0.056	0.142	0.118	0.082	0.153			
	>=40	2010	0.048	0.019	0.077	0.064	0.027	0.101	0.092	0.055	0.128	0.084	0.026	0.142	0.150	0.017	0.183
		2011	0.053	0.020	0.086	0.059	0.028	0.090	0.069	0.021	0.117	0.090	0.054	0.125	0.120	0.022	0.163
		2012	0.047	0.009	0.084	0.071	0.024	0.118	0.072	0.028	0.115	0.100	0.048	0.152	0.102	0.022	0.145
		2006	0.134	0.121	0.147												
		2007	0.089	0.058	0.120	0.147	0.135	0.159									
		2008	0.075	0.017	0.132	0.100	0.063	0.137	0.157	0.146	0.167						
	2009	0.074	0.023	0.124	0.079	0.023	0.134	0.097	0.041	0.153	0.147	0.122	0.172				
	2010	0.056	0.001	0.111	0.060	0.027	0.093	0.089	0.039	0.138	0.102	0.032	0.173	0.169	0.008	0.184	
	2011	0.060	0.023	0.098	0.068	0.033	0.103	0.073	0.045	0.100	0.107	0.037	0.177	0.102	0.019	0.138	
	2012	0.056	0.047	0.066	0.079	0.065	0.092	0.082	0.069	0.095	0.091	0.075	0.107	0.101	0.007	0.113	

Table 8 (cont'd): Multinomial logit results – Predicted probabilities of SE exit by cohort and wage-labor attachment group

Outcome	Weeks workd	Year	2005 cohort			2006 cohort			2007 cohort			2008 cohort			2009 cohort		
			Pred prob	95% conf int		Pred prob	95% conf int		Pred prob	95% conf int		Pred prob	95% conf int		Pred prob	95% conf int	
SE to Non-participation	<=13	2006	0.170	0.145	0.196												
		2007	0.100	0.078	0.122	0.154	0.133	0.175									
		2008	0.082	0.060	0.105	0.116	0.091	0.140	0.174	0.152	0.197						
		2009	0.098	0.066	0.130	0.136	0.100	0.171	0.122	0.094	0.150	0.187	0.151	0.222			
		2010	0.073	0.047	0.100	0.091	0.065	0.117	0.111	0.086	0.137	0.127	0.101	0.153	0.200	0.014	0.227
		2011	0.109	0.075	0.142	0.087	0.060	0.115	0.090	0.061	0.119	0.103	0.074	0.131	0.129	0.013	0.155
	14-26	2012	0.074	0.041	0.107	0.100	0.069	0.130	0.097	0.066	0.129	0.117	0.083	0.152	0.119	0.014	0.147
		2006	0.091	0.068	0.114												
		2007	0.067	0.041	0.092	0.093	0.070	0.116									
		2008	0.058	0.035	0.081	0.085	0.055	0.116	0.102	0.077	0.127						
		2009	0.050	0.014	0.085	0.054	0.021	0.087	0.068	0.041	0.095	0.123	0.084	0.162			
		2010	0.092	0.026	0.157	0.074	0.021	0.127	0.073	0.031	0.115	0.096	0.061	0.131	0.099	0.017	0.132
	27-39	2011	0.062	0.033	0.091	0.048	0.004	0.092	0.086	0.031	0.142	0.046	0.012	0.081	0.079	0.021	0.121
		2012	0.095	0.038	0.151	0.023	0.009	0.037	0.080	0.038	0.122	0.071	0.035	0.107	0.089	0.020	0.129
		2006	0.082	0.056	0.109												
		2007	0.046	0.027	0.065	0.058	0.037	0.079									
		2008	0.058	0.014	0.103	0.053	0.029	0.077	0.093	0.066	0.120						
		2009	0.066	0.034	0.098	0.044	0.008	0.081	0.053	0.025	0.081	0.084	0.054	0.114			
	>=40	2010	0.045	0.014	0.077	0.042	0.015	0.070	0.031	0.017	0.045	0.061	0.011	0.111	0.114	0.014	0.141
		2011	0.034	0.015	0.052	0.051	0.025	0.077	0.045	0.011	0.078	0.068	0.037	0.098	0.061	0.011	0.083
		2012	0.039	0.007	0.071	0.040	0.015	0.065	0.055	0.020	0.090	0.048	0.021	0.075	0.047	0.011	0.068
		2006	0.047	0.040	0.054												
		2007	0.032	0.022	0.042	0.051	0.044	0.057									
		2008	0.034	0.010	0.057	0.042	0.023	0.062	0.060	0.053	0.067						
2009	0.027	0.006	0.048	0.038	-0.005	0.081	0.040	0.015	0.065	0.052	0.040	0.064					
2010	0.033	0.002	0.063	0.039	0.012	0.066	0.040	0.014	0.067	0.047	0.013	0.080	0.063	0.004	0.072		
2011	0.040	0.021	0.060	0.031	0.017	0.044	0.037	0.023	0.051	0.035	0.009	0.062	0.049	0.012	0.073		
2012	0.040	0.030	0.050	0.045	0.036	0.055	0.047	0.036	0.058	0.041	0.032	0.051	0.049	0.005	0.059		

Source: 2005–2009ACS linked with 1040 data from 2003–2013.

Table 9: Multinomial logit results – Statistical significance of differences in predicted probabilities of wage-labor attachment groups by exit type & cohort

SE to wage sector											
Year	Weeks worked	2005 cohort		2006 cohort		2007 cohort		2008 cohort		2009 cohort	
		Diff in Pred Prob	z	Diff in Pred Prob	z	Diff in Pred Prob	z	Diff in Pred Prob	z	Diff in Pred Prob	z
2006	14-26 vs. <=13	0.025	1.54								
2007		0.025 *	1.79	0.035 **	2.05						
2008		0.024	1.48	0.071 ***	3.49	-0.013	-0.82				
2009		0.004	0.14	0.014	0.57	0.036 **	2.39	0.039 **	2.11		
2010		0.024	1.07	-0.009	-0.56	0.025	0.82	0.003	0.17	0.010	0.54
2011		0.022 **	2.07	0.030	1.14	-0.001	-0.04	0.032	1.10	0.048 *	1.84
2012	0.008	0.70	0.018	1.06	0.003	0.25	0.012	0.70	0.046 **	2.05	
2006	27-39 vs. <=13	0.015	0.88								
2007		0.009	0.68	0.024	1.38						
2008		0.047	1.41	0.036 **	2.32	0.007	0.37				
2009		0.003	0.26	0.013	0.43	0.032	1.38	0.038 **	2.22		
2010		0.011	0.64	0.001	0.04	0.025 *	1.83	0.009	0.32	0.052 ***	2.91
2011		0.015	1.26	0.017	1.64	0.005	0.21	0.026	1.24	0.045 ***	2.60
2012	0.014	0.97	0.011	0.60	0.021	1.29	0.033	1.52	0.016	0.86	
2006	>=40 vs. <=13	0.037 ***	3.52								
2007		0.023 **	2.31	0.052 ***	5.10						
2008		0.023	0.87	0.045 **	2.19	0.029 ***	2.64				
2009		0.011	0.52	0.007	0.28	0.029	1.15	0.068 ***	5.88		
2010		0.019	0.76	-0.003	-0.16	0.022	0.99	0.027	0.79	0.071 ***	6.45
2011		0.022	1.69	0.026 **	2.21	0.008	1.22	0.043	1.34	0.027	1.31
2012	0.024 **	2.33	0.019	1.49	0.031 ***	2.56	0.023 *	1.85	0.015	1.21	
2006	14-26 vs. >=40	0.012	0.85								
2007		-0.002	-0.22	0.017	1.08						
2008		-0.001	-0.03	-0.026	-0.71	0.042 ***	3.03				
2009		0.007	0.19	-0.006	-0.19	-0.007	-0.20	0.029 *	1.71		
2010		-0.005	-0.17	0.005	0.25	-0.003	-0.07	0.023	0.59	0.061 ***	3.61
2011		0.000	0.03	-0.005	-0.16	0.009	0.39	0.010	0.26	-0.021	-0.61
2012	0.016	0.93	0.001	0.05	0.029 *	1.68	0.012	0.53	-0.032	-1.15	
2006	27-39 vs. >=40	0.022	1.37								
2007		0.014	1.24	0.028 *	1.71						
2008		-0.024	-0.61	0.009	0.32	0.023	1.35				
2009		0.008	0.29	-0.006	-0.16	-0.002	-0.08	0.030 *	1.84		
2010		0.008	0.24	-0.004	-0.15	-0.003	-0.11	0.018	0.46	0.019	1.09
2011		0.008	0.46	0.009	0.59	0.004	0.16	0.017	0.43	-0.018	-0.53
2012	0.010	0.51	0.008	0.32	0.010	0.45	-0.009	-0.35	-0.001	-0.06	

Table 9 (cont'd): Multinomial logit results – Statistical significance of differences in predicted probabilities of wage-labor attachment groups by exit type & cohort

SE to non-participation

Year	Weeks worked	2005 cohort		2006 cohort		2007 cohort		2008 cohort		2009 cohort	
		Diff in Pred Prob	z	Diff in Pred Prob	z	Diff in Pred Prob	z	Diff in Pred Prob	z	Diff in Pred Prob	z
2006	14-26 vs. <=13	-0.079 ***	-4.74								
2007		-0.033 ***	-3.14	-0.061 ***	-3.93						
2008		-0.024	-1.52	-0.030 **	-2.35	-0.072 ***	-4.12				
2009		-0.049 ***	-2.95	-0.082 ***	-4.60	-0.054 ***	-4.57	-0.062 ***	-2.97		
2010		0.018	0.62	-0.017	-0.64	-0.038 *	-1.92	-0.032	-1.45	-0.101 ***	-4.83
2011		-0.047 ***	-4.13	-0.040 *	-1.76	-0.004	-0.11	-0.057 ***	-3.15	-0.050 **	-2.38
2012		0.021	0.94	-0.077 ***	-6.03	-0.018	-1.12	-0.046 ***	-2.96	-0.029 *	-1.74
2006	27-39 vs. <=13	-0.088 ***	-5.21								
2007		-0.054 ***	-5.33	-0.096 ***	-6.49						
2008		-0.024	-1.14	-0.063 ***	-5.10	-0.080 ***	-4.54				
2009		-0.032 ***	-2.58	-0.091 ***	-4.26	-0.068 ***	-3.61	-0.101 ***	-5.41		
2010		-0.028	-1.34	-0.049 ***	-3.32	-0.080 ***	-7.57	-0.067 ***	-2.66	-0.086 ***	-4.76
2011		-0.075 ***	-5.29	-0.037 ***	-3.20	-0.045 ***	-2.73	-0.035 *	-1.73	-0.068 ***	-6.17
2012		-0.035 ***	-2.63	-0.059 ***	-4.09	-0.042 ***	-2.75	-0.070 ***	-4.42	-0.072 ***	-5.75
2006	>=40 vs. <=13	-0.123 ***	-9.87								
2007		-0.068 ***	-8.48	-0.103 ***	-9.51						
2008		-0.048 ***	-4.02	-0.074 ***	-4.72	-0.114 ***	-9.55				
2009		-0.071 ***	-4.99	-0.098 ***	-3.88	-0.082 ***	-5.65	-0.133 ***	-8.88		
2010		-0.041 **	-2.38	-0.052 ***	-2.69	-0.071 ***	-4.98	-0.081 ***	-4.35	-0.137 ***	-10.78
2011		-0.068 ***	-5.47	-0.057 ***	-6.06	-0.053 ***	-5.67	-0.068 ***	-3.99	-0.080 ***	-4.50
2012		-0.034 **	-1.99	-0.054 ***	-3.46	-0.051 ***	-3.18	-0.076 ***	-4.51	-0.070 ***	-4.69
2006	14-26 vs. >=40	-0.044 ***	-3.68								
2007		-0.034 ***	-3.34	-0.042 ***	-3.51						
2008		-0.024	-1.42	-0.043 **	-2.02	-0.042 ***	-3.19				
2009		-0.023	-1.24	-0.016	-0.63	-0.028	-1.50	-0.071 ***	-4.01		
2010		-0.059 *	-1.85	-0.035	-1.31	-0.033	-1.43	-0.049 **	-1.96	-0.036 **	-2.12
2011		-0.021 *	-1.71	-0.017	-0.80	-0.049 *	-1.68	-0.011	-0.56	-0.030	-1.24
2012		-0.054 *	-1.9	0.022 ***	2.83	-0.033	-1.53	-0.030 *	-1.66	-0.041 **	-1.93
2006	27-39 vs. >=40	-0.035 ***	-2.58								
2007		-0.014 *	-1.7	-0.008	-0.69						
2008		-0.024	-1.11	-0.011	-0.70	-0.033 **	-2.31				
2009		-0.039 **	-2.08	-0.006	-0.25	-0.014	-0.77	-0.032 **	-2.23		
2010		-0.013	-0.57	-0.003	-0.17	0.009	0.57	-0.014	-0.52	-0.051 ***	-3.61
2011		0.007	0.63	-0.020 *	-1.76	-0.008	-0.49	-0.033	-1.62	-0.012	-0.63
2012		0.001	0.06	0.005	0.39	-0.009	-0.49	-0.007	-0.47	0.002	0.17

Source: 2005–2009ACS linked with 1040 data from 2003-2013.

Table 10: Multinomial logit results

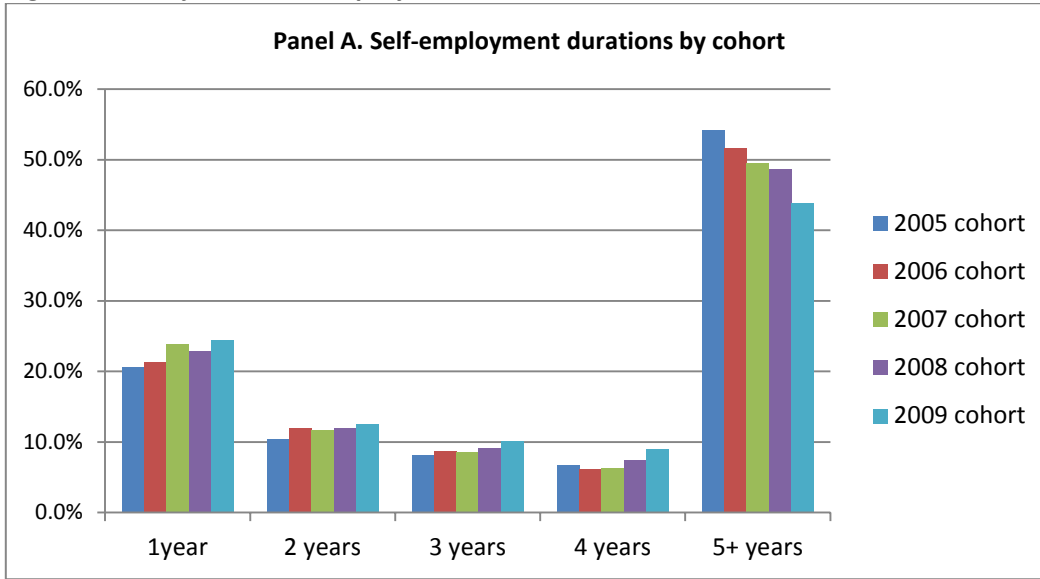
Remains SE (base outcome)																				
SE to wage sector											SE to non-participation									
2005 cohort		2006 cohort		2007 cohort		2008 cohort		2009 cohort			2005 cohort		2006 cohort		2007 cohort		2008 cohort		2009 cohort	
Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	
Wks worked 1st yr																				
<=13 (base)																				
14-26	0.083	0.62	0.275	0.11	-0.253	0.12	0.281	0.17	-0.124	0.53	-0.549	0.00	-0.297	0.08	-0.418	0.02	-0.272	0.15	-0.643	0.00
27-39	-0.034	0.85	0.095	0.61	-0.069	0.67	0.308	0.11	0.291	0.08	-0.663	0.00	-0.830	0.00	-0.532	0.01	-0.701	0.00	-0.446	0.01
>=40	0.133	0.26	0.313	0.01	0.045	0.66	0.423	0.00	0.351	0.00	-1.140	0.00	-0.949	0.00	-0.920	0.00	-1.093	0.00	-1.021	0.00
Wks 1st yr*Year																				
14-26#2007	0.149	0.61									0.307	0.29								
14-26#2008	0.220	0.48	0.599	0.03							0.379	0.24	0.298	0.29						
14-26#2009	-0.150	0.66	-0.193	0.54	0.634	0.02					-0.017	0.96	-0.471	0.15	0.054	0.85				
14-26#2010	0.387	0.33	-0.469	0.20	0.523	0.08	-0.362	0.28			1.025	0.00	0.328	0.34	0.236	0.45	0.144	0.64		
14-26#2011	0.259	0.52	0.242	0.52	0.200	0.56	0.021	0.95	0.533	0.09	0.127	0.74	-0.062	0.87	0.650	0.05	-0.368	0.37	0.358	0.30
14-26#2012	0.096	0.85	-0.089	0.82	0.256	0.53	-0.250	0.53	0.485	0.13	1.038	0.00	-1.004	0.10	0.466	0.18	-0.082	0.84	0.594	0.10
27-39#2007	0.016	0.96									0.011	0.98								
27-39#2008	0.622	0.06	0.331	0.27							0.540	0.14	0.261	0.49						
27-39#2009	-0.044	0.91	-0.063	0.85	0.379	0.18					0.424	0.22	-0.149	0.70	-0.136	0.69				
27-39#2010	0.189	0.67	-0.193	0.60	0.293	0.35	-0.276	0.38			0.359	0.46	0.265	0.53	-0.607	0.17	0.091	0.79		
27-39#2011	0.203	0.67	0.172	0.67	0.053	0.88	0.018	0.96	0.060	0.82	-0.403	0.40	0.526	0.17	0.004	0.99	0.486	0.17	-0.154	0.61
27-39#2012	0.282	0.58	-0.024	0.95	0.357	0.36	0.041	0.91	-0.287	0.31	0.197	0.71	0.119	0.80	0.157	0.70	-0.041	0.92	-0.379	0.27
>=40#2007	0.023	0.91									0.232	0.22								
>=40#2008	0.122	0.61	0.182	0.35							0.517	0.02	0.151	0.39						
>=40#2009	-0.125	0.61	-0.395	0.04	0.202	0.29					0.060	0.79	-0.204	0.28	0.021	0.91				
>=40#2010	0.170	0.57	-0.503	0.03	0.126	0.52	-0.299	0.15			0.608	0.02	0.295	0.17	0.136	0.50	0.315	0.08		
>=40#2011	0.187	0.54	0.056	0.83	-0.035	0.87	-0.047	0.84	-0.219	0.26	0.384	0.15	0.120	0.60	0.285	0.22	0.298	0.16	0.231	0.18
>=40#2012	0.322	0.33	-0.147	0.56	0.356	0.17	-0.294	0.22	-0.380	0.05	0.824	0.00	0.375	0.10	0.464	0.04	0.288	0.17	0.319	0.10
Year																				
2006 (base)																				
2007	-0.510	0.01	(base)								-0.701	0.00								
2008	-0.801	0.00	-0.645	0.00	(base)						-0.947	0.00	-0.401	0.01						
2009	-0.571	0.03	-0.337	0.10	-0.789	0.00	(base)				-0.727	0.00	-0.188	0.36	-0.535	0.00				
2010	-1.159	0.00	-0.525	0.01	-0.811	0.00	-0.132	0.58	(base)		-1.090	0.00	-0.677	0.00	-0.642	0.00	-0.489	0.02		
2011	-1.087	0.00	-0.958	0.00	-0.874	0.00	-0.347	0.21	-0.401	0.03	-0.636	0.00	-0.742	0.00	-0.901	0.00	-0.759	0.00	-0.593	0.00
2012	-1.295	0.00	-0.577	0.02	-1.122	0.00	-0.272	0.35	-0.252	0.19	-1.090	0.00	-0.573	0.00	-0.819	0.00	-0.597	0.02	-0.677	0.00
N	29,498		26,732		23,459		18,155		14,363											
Pseudo-Rsq	0.0641		0.0613		0.0634		0.0600		0.0579											

Table 10 (cont'd): Multinomial logit results

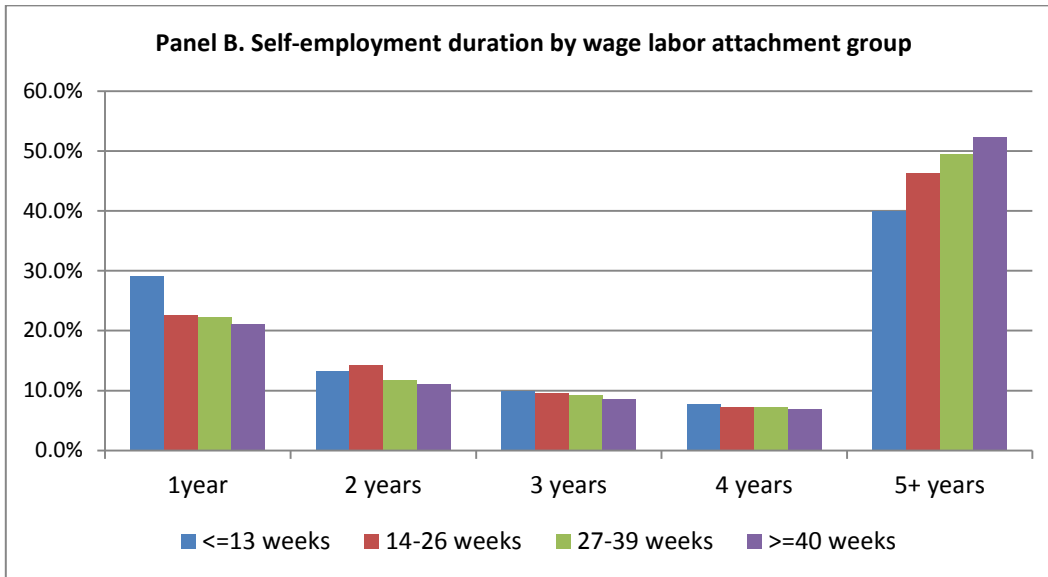
Remains SE (base outcome)																				
SE to wage sector											SE to non-participation									
2005 cohort		2006 cohort		2007 cohort		2008 cohort		2009 cohort		2005 cohort		2006 cohort		2007 cohort		2008 cohort		2009 cohort		
Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	Coeff	P> z	
<i>Race</i>																				
White alone (base)																				
Black alone	0.067	0.60	0.061	0.60	-0.060	0.64	-0.089	0.54	0.161	0.25	0.052	0.77	0.305	0.03	0.018	0.92	0.202	0.14	0.465	0.00
Asian alone	0.074	0.59	0.318	0.00	0.033	0.81	0.130	0.34	0.127	0.35	-0.048	0.76	0.250	0.06	-0.007	0.97	-0.054	0.77	0.182	0.26
Other	0.173	0.15	0.200	0.08	0.170	0.21	0.006	0.97	0.092	0.52	0.081	0.68	0.046	0.79	0.008	0.96	0.139	0.49	-0.019	0.93
<i>Hispanic origin</i>																				
Non-Hispanic (base)																				
Hispanic	0.071	0.48	-0.016	0.88	-0.108	0.31	-0.068	0.53	0.031	0.77	0.038	0.81	0.076	0.58	-0.308	0.03	-0.134	0.22	-0.092	0.56
<i>Sex</i>																				
Female (base)																				
Male	-0.019	0.72	0.076	0.15	0.042	0.44	-0.061	0.30	-0.172	0.01	0.158	0.02	0.126	0.06	0.044	0.52	-0.051	0.49	-0.015	0.86
<i>Citizenship</i>																				
Citizen (base)																				
Non-citizen	-0.313	0.01	-0.205	0.09	-0.197	0.14	-0.343	0.02	-0.090	0.55	-0.073	0.61	-0.248	0.14	-0.013	0.93	0.210	0.14	-0.007	0.97
<i>Education</i>																				
Less than HS (base)																				
HS degree	0.094	0.39	0.322	0.00	-0.146	0.17	0.446	0.00	0.251	0.04	0.466	0.00	0.500	0.00	0.369	0.00	0.512	0.00	0.539	0.00
Some college	0.117	0.09	0.171	0.02	0.054	0.45	0.185	0.03	0.128	0.14	0.320	0.00	0.353	0.00	0.129	0.17	0.285	0.00	0.262	0.02
BS/BA	0.132	0.04	0.194	0.00	0.148	0.02	0.179	0.02	0.009	0.91	0.217	0.01	0.218	0.01	0.124	0.17	0.115	0.23	0.126	0.21
Master's or more	-0.038	0.65	0.004	0.96	-0.008	0.92	-0.055	0.55	-0.029	0.75	-0.084	0.45	-0.089	0.38	-0.138	0.19	-0.058	0.63	-0.173	0.14
<i>Age</i>																				
<25 (base)																				
25-34	0.278	0.01	0.354	0.00	0.477	0.00	0.284	0.02	0.454	0.00	-0.202	0.29	-0.204	0.30	-0.218	0.25	0.034	0.87	-0.287	0.18
35-44	-0.022	0.73	0.042	0.55	0.030	0.68	-0.002	0.98	-0.034	0.68	-0.153	0.17	0.142	0.21	0.127	0.26	-0.141	0.25	0.070	0.60
45-54	-0.081	0.24	-0.048	0.49	0.044	0.57	-0.089	0.30	0.017	0.85	0.238	0.02	0.406	0.00	0.346	0.00	0.145	0.22	0.262	0.04
55-64	-0.080	0.31	-0.056	0.50	-0.106	0.21	-0.102	0.29	0.049	0.61	0.843	0.00	1.090	0.00	0.832	0.00	0.600	0.00	0.786	0.00
>=65	-0.443	0.00	-0.198	0.10	-0.152	0.20	-0.262	0.04	-0.392	0.00	1.700	0.00	1.656	0.00	1.680	0.00	1.181	0.00	1.248	0.00
<i>Unemp. rate change</i>	-0.080	0.70	0.058	0.71	-0.052	0.73	0.333	0.06	-0.277	0.09	0.137	0.56	-0.185	0.48	0.115	0.61	0.180	0.45	0.092	0.88
<i>Constant</i>	-2.304	0.000	-2.749	0.000	-2.442	0.000	-2.086	0.000	-1.904	0.000	-2.304	0.000	-2.749	0.000	-2.442	0.000	-2.086	0.000	-1.904	0.000
N	29,498		26,732		23,459		18,155		14,363		29,498		26,732		23,459		18,155		14,363	
Pseudo-Rsq	0.0641		0.0613		0.0634		0.0600		0.0579											

Source: 2005–2009ACS linked with 1040 data from 2003-2013.

Figure 1. Unadjusted self-employment duration

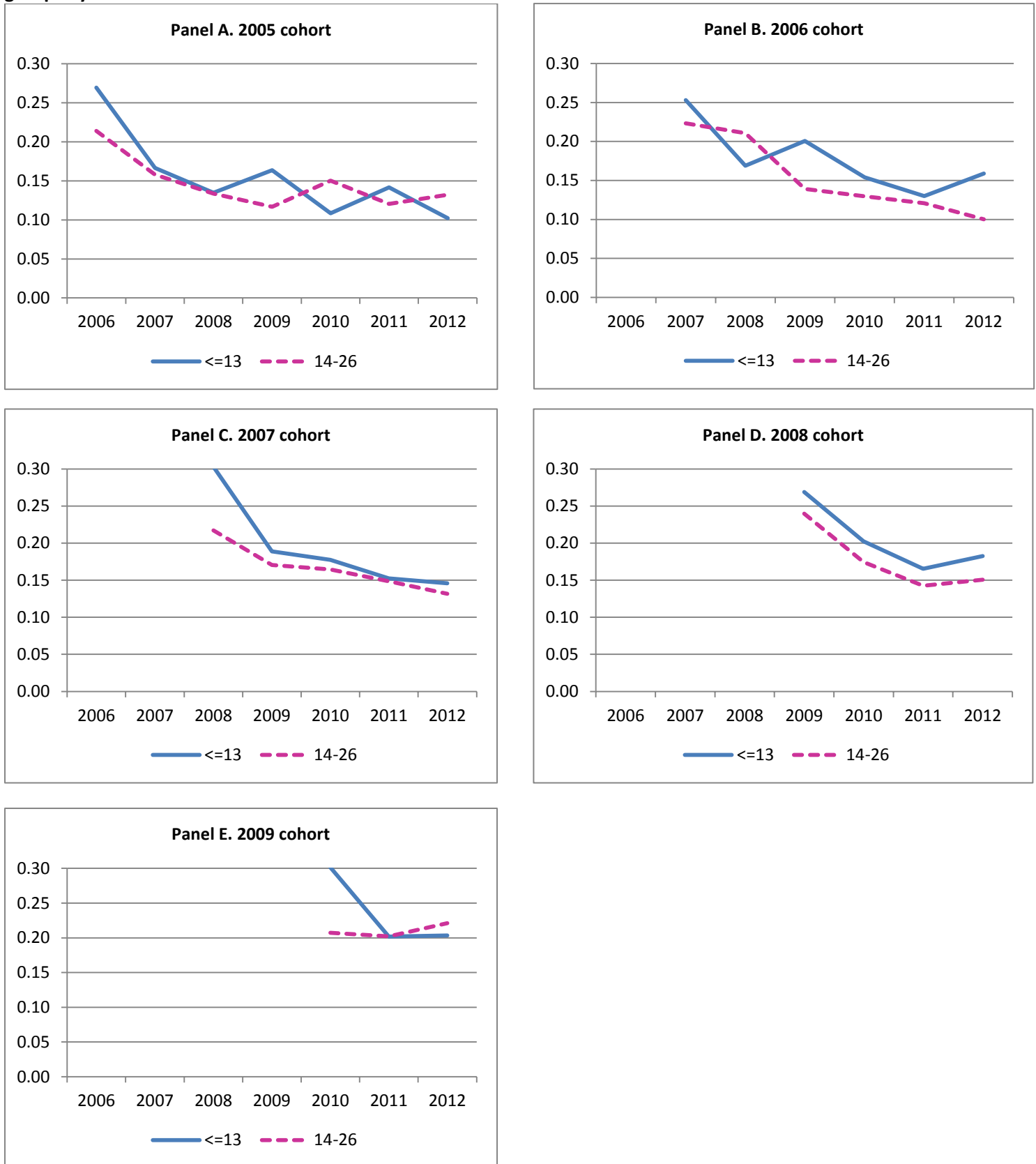


Source: 2005–2009 ACS linked with 1040 data from 2003-2013.



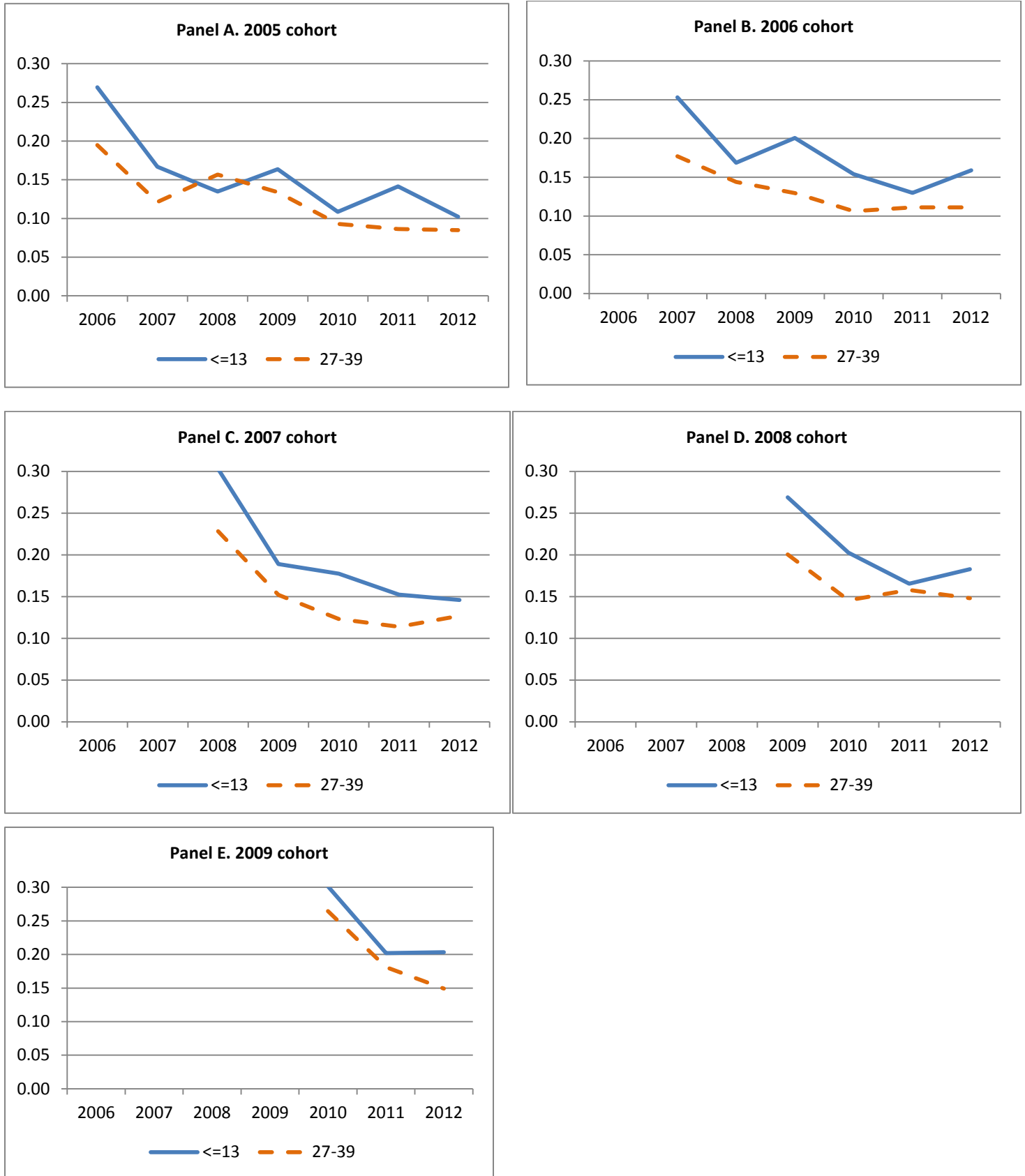
Source: 2005–2009 ACS linked with 1040 data from 2003-2013.

Figure 2: Binomial logit results – Predicted probability of self-employment exit for selected wage-sector attachment groups by cohort



Source: 2005–2009 ACS linked with 1040 data from 2003–2013.

Figure 3: Binomial logit results – Predicted probability of self-employment exit for selected wage-sector attachment groups by cohort



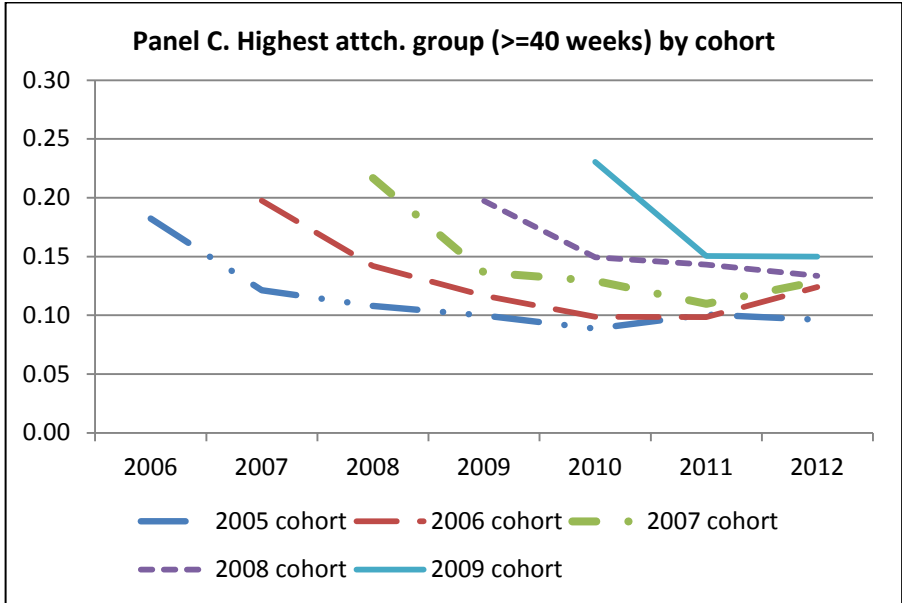
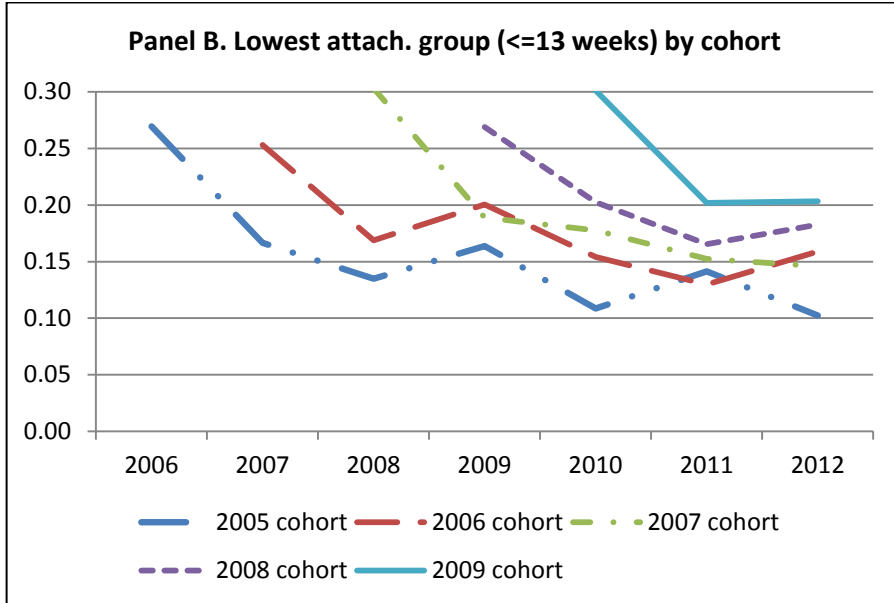
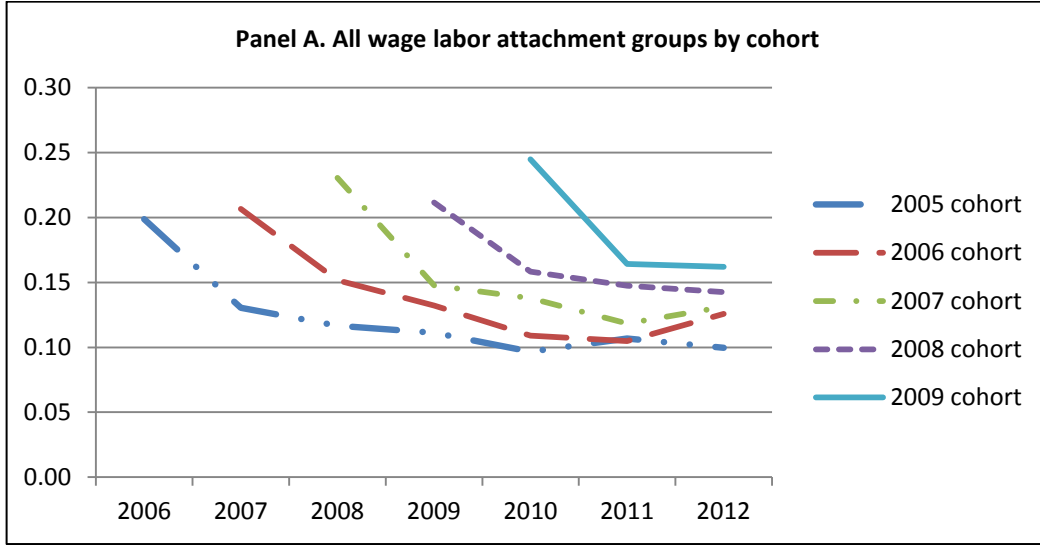
Source: 2005–2009 ACS linked with 1040 data from 2003–2013.

Figure 4: Binomial logit results – Predicted probability of self-employment exit for selected wage-sector attachment groups by cohort



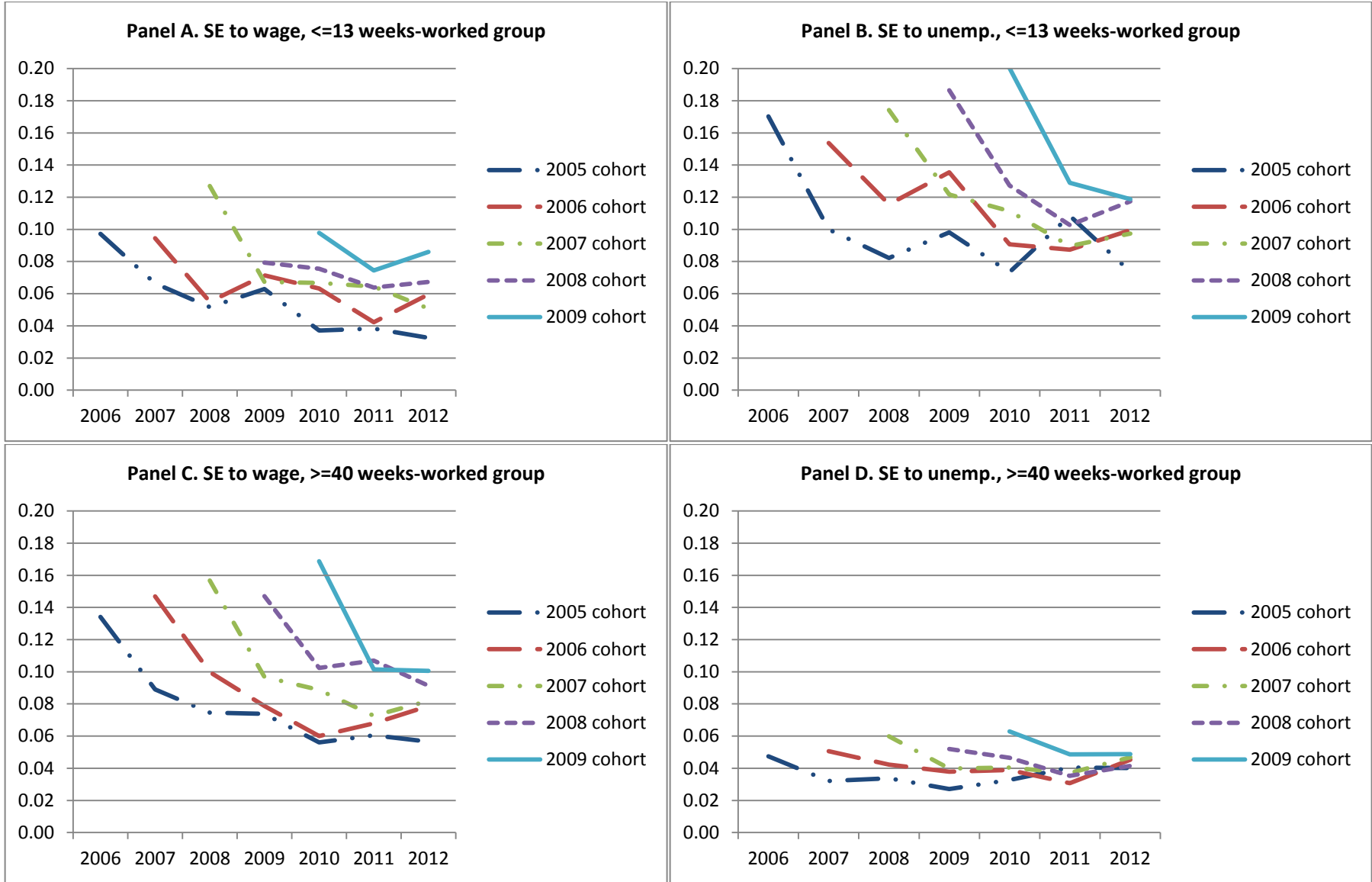
Source: 2005–2009ACS linked with 1040 data from 2003-2013.

Figure 5: Binary logit results - Predicted probabilities of self-employment exit by cohort & wage-labor attachment group



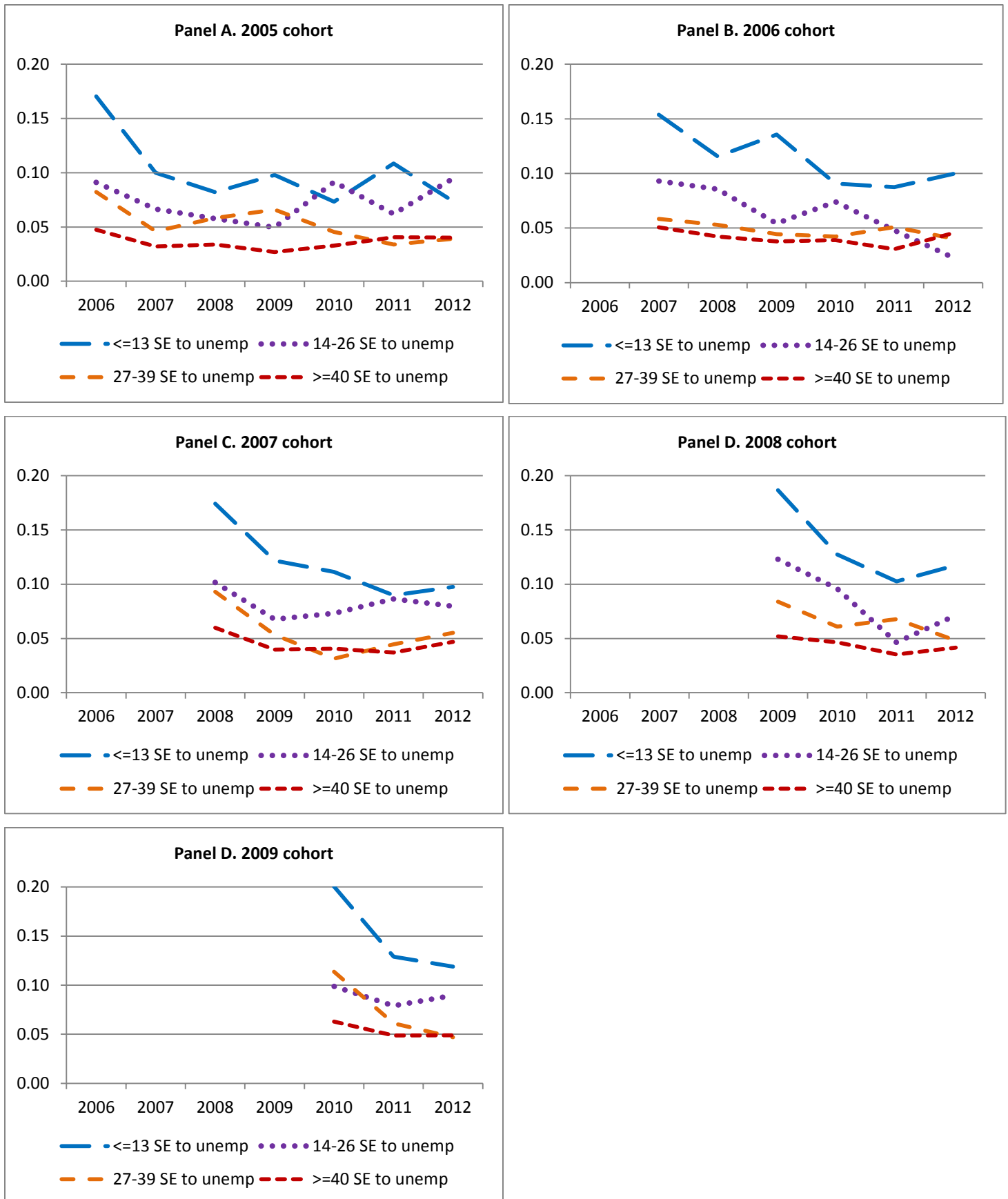
Source: 2005–2009ACS linked with 1040 data from 2003–2013.

Figure 6: Multinomial logit results - Predicted probability of self-employment exit by type of exit, wage-labor attachment group & cohort



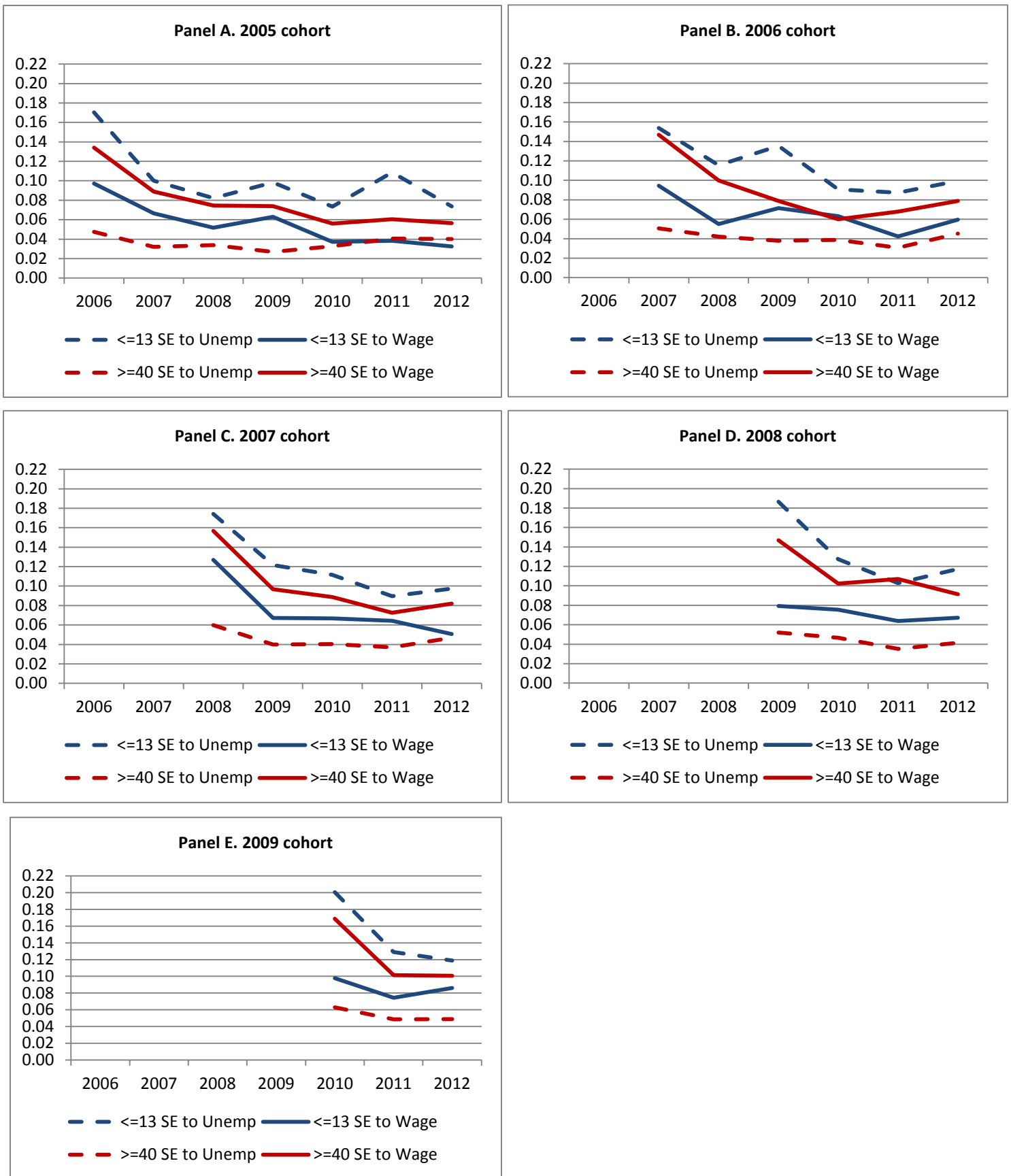
Source: 2005-09 ACS linked with 1040 data from 2004-2013

Figure 7: Multinomial logit results - Predicted probability of self-employment to non-participation, by attachment group & cohort



Source: 2005-09 ACS linked with 1040 data from 2004-2013

Figure 8: Multinomial logit results - Predicted probability of self-employment exit by type of exit, attachment group & cohort



Source: 2005-09 ACS linked with 1040 data from 2004-2013

Figure 9: Multinomial logit results - Predicted probability of self-employment exit by exit type for selected attachment group & cohort



Source: 2005–2009ACS linked with 1040 data from 2003–2013.

Figure 10: Multinomial logit results - Predicted probability of self-employment exit by exit type for selected attachment group & cohort



Source: 2005–2009ACS linked with 1040 data from 2003-2013.