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## Pathways to Retirement and the Self-Employed

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## **Pathways to Retirement and the Self-Employed\***

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### **Abstract**

We study the role that self-employment plays in transitions to retirement using a rich administrative dataset consisting of the tax returns of a large random sample of individuals from the 1945 birth cohort over 1999-2013 (at ages 54 through 68). We find that roughly 1 percent of wage earners become self-employed each year. Local labor unemployment rates do not appear to affect transitions to self-employment for either older or younger workers, though they do increase the probability of retirement. The probability of switching from wage-employment to self-employment, conditional on continuing to work, increases by around 18 percent at age 63 and continues to increase during the mid-to-late 60s. We find weak evidence that this effect is more pronounced for individuals with larger IRA balances, particularly after penalty-free withdrawals are available. Late-career transitions from wage employment to self-employment are associated with a substantially larger drop in income than mid-career transitions from wage employment to self-employment. For younger wage earners who become self-employed, income increases with the duration of self-employment; however, it continues to fall for older wage earners. Supplementary analysis using the Health and Retirement Study (HRS) suggests that hours worked also fall upon transition to self-employment. Overall, our results suggest that older individuals who become self-employed may be using it as a “bridge job” that provides, flexible part-time work as they transition to retirement.

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## 1. Introduction

With the finances of Social Security and Medicare under pressure from an aging population and health care costs, the ability of these programs to provide retirement security has become an important policy concern. Policy makers have expressed interest not just in shoring up the finances of these programs but also in other options to improve retirement security such as facilitating longer working lives, expanding tax-preferred savings opportunities, and encouraging automatic enrollment in retirement savings plans. In order to evaluate these policies, it is important to understand the employment and income dynamics of workers as they approach retirement. Previous research has documented the role that self-employment plays for workers approaching retirement. In particular, self-employed workers tend to retire later, and wage earners become more likely to switch to self-employment as they age (Giandrea, Cahill, and Quinn 2008; Cahill, Giandrea, and Quinn 2013; Fuchs 1982; Zissimopoulos, Maestas, and Karoly 2007). For older workers who have spent their careers as wage earners, self-employment can play the role of a bridge job in their transition to retirement, allowing them to reduce hours and effort gradually (e.g., Kerr and Armstrong-Stassen 2011). This paper addresses two aspects of self-employment transitions at older ages. First, we examine the factors that influence older workers' transitions to self-employment, including demographics, retirement wealth, and local labor market conditions. Second, we examine what happens to the incomes of older workers when they transition into and out of self-employment. Whether self-employment can play a role in improving retirement security depends critically on the extent to which self-employment earnings replace earnings from wage employment. We use a rich administrative data source, based on tax returns, to examine these research questions.

A number of previous studies have examined the factors that influence transitions to self-employment at older ages. Wealth, liquidity, and access to credit are important determinants of self-employment transitions for older workers (Zissimopoulos and Karoly 2009; Zissimopoulos, Karoly, and Gu 2009; Bruce, Holtz-Eakin, and Quinn 2000). Being unemployed increases the probability of becoming self-employed (Biehl 2014). Job characteristics and personality traits play a role too (Angrisani et al. 2013; Zissimopoulos and Karoly 2009; Kerr and Armstrong-Stassen 2011). The evidence on the role of health status (Zissimopoulos and Karoly 2007; Giandria, Cahill, and Quinn 2008; Cahill, Giandrea, and Quinn 2013; Fuchs 1982) and portable health insurance (Bruce, Holtz-Eakin, and Quinn 2000; Zissimopoulos and Karoly 2007; Boyle and Lahey 2010; Fairlie, Kapur, and Gates 2011; Heim 2015) is more mixed. Several studies have also documented gender and other demographic differences in the probability of transitioning to self-employment and in the determinants of self-employment (Zissimopoulos and Karoly 2007; Bruce, Holtz-Eakin, and Quinn 2000; Kerr and Armstrong-Stassen 2011).

Self-employment can prolong working lives. Fuchs (1982) and Quinn (1980) show that self-employed older workers tend to work longer than wage and salary workers in part because they reduce their working hours rather than stopping work. More recently, Zissimopoulos and Karoly (2007) have argued that self-employed older workers are more likely to transition to part-time work, possibly because of the flexibility that self-employment provides. More generally, many studies have shown that retirement is often an extended process rather than an abrupt change, with many workers reducing hours, taking bridge jobs, or reentering the labor force after retirement (e.g., Maestas 2010; Cahill, Giandrea, and Quinn 2011). Self-employment may be an ideal bridge job because of the flexibility that it provides.

To our knowledge, no other studies have examined how income and hours change when older wage-earners transition to self-employment.<sup>1</sup> This is an important gap in the literature. If older workers who become self-employed tend to work significantly fewer hours and earn only small amounts of income, then self-employment may not have a dramatic impact on the ability to support oneself in retirement, although it may still allow people to work longer than they would have otherwise. Our other main contribution to the literature comes from our use of a rich administrative dataset based on tax returns. Most existing studies of self-employment at older ages rely on the Health and Retirement Study (HRS), a panel study that is intended to be representative of individuals aged 50 and older. Instead, our main source of data is a large random sample of tax returns. Compared to the HRS, the tax return data provide a much larger sample, and self-employment status and income may be more accurately reported. The large sample size allows us to follow a single cohort over a 15-year window, observing shifts in their employment and earnings patterns as they transition to retirement. Specifically, we focus on the 1945 birth cohort, which reaches age 54 in 1999 and age 68 in 2013. For comparison, we also examine the 1965 birth cohort, which reaches age 34 in 1999 and age 48 in 2013. The younger cohort serves as a comparison group to account for unobservable factors that affect self-employment behavior and income for workers of all ages during a given year. (Examples of such factors might include economy-wide shifts in the propensity to become self-employed or in the reported earnings of the self-employed.) The main disadvantage of the tax data lies in its lack of demographic information compared to the HRS. Thus, our work with the tax return data

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<sup>1</sup> Other studies have examined the dynamics of income for wage earners versus the self-employed, but do not focus on older workers and the role that self-employment plays in generating income during retirement transitions. Generally, self-employed workers tend to earn less than wage earners, to experience slower income growth, to work longer hours, and to face greater earnings risk. See Åstebro and Chen (2014) for a review, and for evidence that underreporting may more than explain the income differential.

complements prior studies based on the HRS, providing an alternative source of evidence on work transitions at older ages. For comparison, we also provide a supplementary analysis using the HRS.

The remainder of the paper is organized as follows. Section 2 describes our data and methods. Section 3 presents our results. Section 4 concludes.

## 2. Data and Methods

### *a. Data*

We use administrative tax return data for the 1945 and 1965 cohorts from 1999 to 2013. We select a 10-percent sample of tax returns from each cohort. We drop 94,771 individuals who either died prior to our sample period or, who never report having self-employment income or were never issued a Form W-2, giving us 246,097 individuals (and 3,691,455 person-year observations) for the 1945 cohort and 453,645 individuals (and 6,804,675 person-year observations) for the 1965 cohort. We obtain information about wage income from form W-2; since this form is an information return, we are able to include nonfilers in our sample. We obtain information about net self-employment income from Schedule SE. Since Schedule SE is filed by self-employed individuals with their tax returns, it is not available for nonfilers. However, this is unlikely to result in substantial bias because self-employment income is subject to a much lower filing threshold than wage income.<sup>2</sup> Finally, we obtain information about the fair market value of each individual's IRA from form 5498. Fair market value for an individual is

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<sup>2</sup> In 2016, individuals with net earnings of \$400 or more from self-employment must file schedule SE. Self-employment income is also typically reported as business income on Schedule C; however, due to data limitations in most years of our data, it is difficult to determine whether the income was earned by the primary filer or his spouse, particularly when losses are reported.

aggregated across all forms 5498.<sup>3</sup> Information about other retirement and non-retirement wealth, such as defined contribution pensions or housing, is not available; thus, IRA balance serves as a lower bound and a proxy for total wealth. All monetary amounts are adjusted for inflation and expressed in 2010 dollars.

We define an individual as a wage earner if wages make up 50 percent or more of total earnings (wages plus self-employment income), and if total earnings are greater than \$3,000 in 2010 dollars. We define an individual as self-employed if self-employment income makes up more than 50 percent of total earnings, and if total earnings are greater than \$3,000 in 2010 dollars. Finally, we define an individual as not working if total earnings are less than \$3,000 in 2010 dollars. One shortcoming of using Schedule SE income is that it reports taxable, net self-employment income; thus, our definition of self-employed would exclude self-employed individuals who made profits less than the \$3,000 threshold (or losses) despite having significant revenue.

We supplement our analysis using data from the Health and Retirement Study (HRS), a panel survey intended to track the U.S. population over age 50. The survey began in 1992 with a cohort of individuals born between 1931 and 1941, and several new cohorts have been added periodically to keep the sample representative of the target population. Interviews take place every two years. We use data from all cohorts, and we use the term “baseline wave” to refer to the wave in which an individual’s cohort entered the panel. We use the RAND version of the HRS, a cleaned dataset that includes a limited number of variables. We drop all individuals who were not present during their baseline wave. After this restriction, the sample contains 31,162 individuals and 191,106 person-year observations.

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<sup>3</sup> While individuals only receive form 5498 in years that they make an IRA contribution, the form is filed each year with the IRS regardless of whether a contribution is made.

The RAND HRS includes an indicator for whether an individual is doing any work for pay. It also includes an indicator for whether an individual's main job is self-employment. We classify individuals as either employees (working for pay and not self-employed), self-employed (working for pay and self-employed), or not working. After dropping individuals whose employment status in the baseline wave is unknown, observations with a currently missing employment status, and observations with zero sampling weight, we are left with 171,047 person-year observations representing 29,504 individuals.

For individuals who are currently working, the RAND HRS includes information about the usual number of hours worked per week and the usual number of weeks worked per year at both their main job and second job (if any).<sup>4</sup> It also includes an hourly wage, which is calculated based on these variables and self-reported earnings on all jobs. Self-reported earnings include both wages and net earnings from self-employment. We assume the hourly wage is zero for individuals currently not working.<sup>5</sup> We calculate annual earnings as hourly wage multiplied by usual hours worked per week at all jobs multiplied by usual weeks worked per year at all jobs. Note that, consistent with the tax data, our HRS earnings measure includes any earnings from self-employment for people who are wage earners at their main job and any earnings from wage employment for people who are self-employed at their main job. Net earnings from self-employment in the HRS also do not appear to be negative, suggesting that losses are not included. In contrast to the tax data, however, individuals in the HRS are classified as self-employed not based on the fraction of their income from self-employment, but based on whether they report that their main job is self-employment. We have 159,726 observations with non-

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<sup>4</sup> A subset of individuals was not asked about second jobs in wave 2. We assume that these individuals did not have second jobs (i.e., we set hours and weeks worked at a second job to zero).

<sup>5</sup> RAND imputes the hourly wage for individuals who are unemployed. Since we are concerned with actual earnings, rather than potential earnings, we replace these imputed values with zeros.



missing earnings, 168,869 observations with non-missing hours, and 161,265 observations with non-missing hourly wage.

The RAND HRS contains detailed information on demographics and wealth. Retirement wealth is computed as the sum of the household's IRA wealth plus the respondent's defined contribution balances on the current job.<sup>6</sup> Just as in the tax return data, all monetary amounts are adjusted for inflation and expressed in 2010 dollars.

*b. Transitions*

We begin by examining transitions from working (either in wage employment or self-employment) to not working, and from wage-employment to self-employment (conditional on continuing to work). For the older cohort, a transition from working to not working often implies a transition to retirement, while for the younger cohort it most likely implies a transition to unemployment or being out of the labor force. The dependent variable in our working-to-not-working transition model takes on a value of 1 for individuals who were working (either self-employed or wage earner) in the previous period and are currently not working. It takes on a value of zero for individuals who were working (either self-employed or wage earner) in the previous period and continue to be employed in the current period (again either self-employed or wage earner). It is missing for all other individuals. Similarly, the dependent variable in our self-employment transition model takes on a value of 1 for individuals who were wage earners in the previous period and are self-employed in the current period. It takes on a value of zero for individuals who were wage earners in the previous period and continue to be wage earners in the

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<sup>6</sup> Balances are available for up to 3 or 4 defined contribution plans depending on the wave. If the balance is missing for a particular plan, we set it to zero. While our retirement wealth measure excludes past defined contribution balances, many individuals roll these over into IRAs.

current period. It is missing for all other individuals. That is, we model the hazard of stopping work for working individuals, as well as the hazard of self-employment for wage earners. In all regressions, standard errors are clustered by individual.

In the tax data, independent variables include the county-level unemployment rate during the year<sup>7</sup>, a dummy for female gender, a dummy for being married, earnings in 1999, year dummies, a 1945 birth cohort dummy, IRA fair market value in the previous year, interactions between the 1945 cohort dummy and the other independent variables, and three-way interactions between lagged IRA fair market value, the year dummies, and the cohort dummy. We also include county dummies to control for unobservable county-specific factors that affect both the unemployment rate and the probability of transitioning to self-employment or not-working state.<sup>8</sup> The interactions between the birth cohort and year dummies tell us how much more likely the 1945 birth cohort is to enter self-employment compared to the 1965 birth cohort in each of the years in the sample. Since everyone in the 1945 birth cohort is the same age in each year of the sample, we can interpret the coefficients on these interactions as age effects under the assumption that both cohorts react similarly to common time-variant factors such as macroeconomic conditions. The three-way interactions with lagged IRA fair market value tell us how retirement wealth alters the impact of age. For example, we can tell if individuals with higher IRA balances are more likely to switch to self-employment after they can tap into their IRAs at age 59½. In the working-to-not-working transition regressions, we also include work

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<sup>7</sup> This variable was obtained from the Bureau of Labor Statistics Local Area Unemployment Statistics and merged to the tax data based on zip code. For individuals with missing county (typically nonfilers), we instead merge in the national average unemployment rate by gender and age group (ages 25-54 for the younger cohort and ages 55+ for the older cohort).

<sup>8</sup> We include a separate dummy for individuals with missing county. For these individuals, unemployment rate varies by gender and age group. The gender and cohort dummies should therefore control for unobservable differences across these groups that are also correlated with labor market transitions and the unemployment rate.

status (wage earner or self-employed) in the previous wave interacted with birth cohort. This tells us the propensity for self-employed individuals to stop working compared to wage earners.

In the HRS data, independent variables include the monthly unemployment rate within the census region<sup>9</sup>, age dummies, earnings in the baseline wave, a dummy for female gender, dummies for non-white race and Hispanic ethnicity, education dummies, defined contribution balance in the previous wave, wave dummies, dummies for census region, and dummies for month. We also include interactions between the age dummies and lagged retirement wealth (IRA plus defined contribution balance) in order to determine whether the impact of retirement wealth varies according to whether penalty-free withdrawals are allowed. In the not working transition regression, we also include an indicator for being self-employed in the previous wave.

### *c. Earnings*

We next examine how earnings and hours worked change upon transitioning to self-employment. Our dependent variable in the earnings regressions is total earnings, whether from a job or from self-employment. All earnings are reported in 2010 dollars. In the HRS data, we are also able to use weekly hours and hourly wage as dependent variables.

The key independent variables are indicators for being self-employed or not working in the current year or wave. In the tax data, we also include year dummies, a dummy for the 1945 birth cohort, interactions between the 1945 birth cohort dummy and the other independent variables, and individual fixed effects. In the HRS data, we include wave dummies, age dummies, and individual fixed effects. We cluster standard errors at the individual level. We estimate these regressions for the full sample, as well as for the subset of individuals who start

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<sup>9</sup> This was obtained from the Bureau of Labor Statistics and merged to the data based on interview date and census region.

out as wage earners (i.e., in 1999 in the tax data and the baseline wave in the HRS). The latter set of regressions allows us to examine the impact of switching to self-employment for individuals who begin as wage-employees. This is more relevant to the question of the role that self-employment may play as career employees transition to retirement. In these regressions, we exclude 1999 (in the tax data) or the baseline wave (in the HRS data). The use of fixed effects means that we are estimating within-person changes from switches between wage-employment and self-employment.

The goal of this exercise is to examine the impact of late-career transitions to self-employment on earnings and hours. However, it is possible that the self-employed differ from wage-employees at any age in terms of their reported hours or earnings. For example, income underreporting is more common for self-employment income than for wage and salary income (see e.g., Feldman and Slemrod 2007). Thus, a drop in reported income upon switching to self-employment may simply reflect underreporting. Alternatively, self-employed individuals may take a few years to become established in their business, suggesting that a drop in income during the first period of self-employment is to be expected regardless of age. Finally, macroeconomic factors may affect the relative earnings of the self-employed versus wage employees. In the tax data the younger cohort can help us to control unobservable factors that affect the income of the self-employed versus wage employees at all ages. As long as both age groups face similar incentives to underreport, have similar experiences with becoming established in business, and are affected similarly by macroeconomic factors, we can examine the impact of switching to self-employment on income for the older versus the younger group. That is, the coefficient on the interaction term between the 1945 cohort dummy and the self-employment dummy tells us the additional change in income that results from a late-career (versus a mid-career) switch to

self-employment. In both the tax data and the HRS data, we also estimate regressions in which we allow the income changes resulting from self-employment to vary depending on the number of consecutive years of self-employment. This allows us to determine how income evolves after a switch to self-employment.

### 3. Results

#### *a. Transitions*

Table 1 uses tax return data to show the 1-year, 2-year, and 4-year transition probabilities between self-employment, wage-employment, and non-work for the 1945 and 1965 cohorts over the entire 1999-2013 period. They suggest that around 1 percent of wage earners in each age group become self-employed each year. The fraction rises to around 2 percent over four years. Table 2 does the same for the HRS data. Since interviews are conducted every other year, we only show the 2-year and 4-transition probabilities. These figures suggest that around 2 percent of wage earners transition to self-employment over two years, with that fraction rising to around 4 percent over four years. Most of the transition probabilities are similar for the older tax data cohort and the HRS sample. The main difference is that people who are not working are more likely to transition to working in the tax data relative to the HRS data. One possible explanation for this difference might be that individuals in the HRS data are older (the oldest individual in the tax data is only 68 years old, while the HRS has many individuals in their 70s and 80s).

Figure 1 uses the tax data to show the hazards of self-employment each year for individuals who were wage earners in the previous year. These hazards are conditional on not stopping work. The two horizontal lines indicate the years that the older cohort turned 62 and 66 (the Social Security normal retirement age). Figure 2 provides two-year self-employment hazard

rates by age using the HRS data. The horizontal lines here indicate ages 62 and 65 (the Social Security normal retirement age for the majority of the HRS sample, as well as the Medicare eligibility age). Both graphs show that the probability of switching from wage-employment to self-employment increases around age 65, the Medicare eligibility age for both samples and the Social Security normal retirement age for the majority of the HRS sample. The tax data additionally show a spike in the hazard of self-employment soon after age 62. In the tax data, the increases in the hazard of self-employment at key Social Security ages are more pronounced when viewed relative to the younger cohort, whose hazard of self-employment has declined relatively steadily since 2007. These spikes suggest the possibility that individuals may use self-employment as a bridge job as they transition to retirement at key Social Security eligibility ages. The spike at age 65 may also indicate the role that health insurance availability plays in transitions to self-employment.<sup>10</sup>

Figure 3 shows the hazard of stopping work each year for individuals who were wage employees and self-employed, respectively, in the previous year. Figure 4 does the same, by age, for the HRS data. Figure 3 suggests that retirement hazards for the older group (measured relative to the younger cohort's hazard of stopping work) are higher for wage earners before age 62. Both figures show that retirement hazards increase at ages 62 and normal retirement age, for both self-employed individuals and wage earners. In the HRS data, self-employed individuals appear to have a lower hazard of stopping work than wage earners, while the reverse is true in the tax data. One explanation for this finding might be our definition of not working. In the HRS data, an individual is not working if he or she reports not doing any work for pay. In the tax data, we use a threshold of \$3,000 of earnings. It is possible that the net earnings of self-employed

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<sup>10</sup> See, e.g., Fairlie, Kapur, and Gates 2011, who investigate the availability of non-employer sponsored group health insurance on self-employment using Medicare eligibility as an exogenous change in insurance availability

people are more volatile than those of wage earners, causing them to fall below \$3,000 in net earnings in some years (and be classified as not working) even though they continue to work in self-employment.

Regression results for the tax data hazard models are presented in Tables 3a (demographic and labor market effects), 3b (year by cohort interactions, or age effects), and 3c (year by cohort by IRA balance interactions). Results for the HRS hazard models are presented in Tables 4a (demographic and labor market effects), 4b (age effects), and 4c (age by defined contribution balance effects). In Tables 3a and 4a, both sets of regressions, the unemployment rate is strongly associated with an increase in the probability of stopping work. In the tax data, that association is larger for the older cohort. However, unemployment is not associated with an increase in the hazard of self-employment. While the coefficient on the interaction between the unemployment rate and the 1945 cohort dummy is statistically significant (Table 3a), it rounds to zero at the third decimal place, suggesting that it is economically insignificant. Both sets of results indicate that the self-employed have a lower probability of stopping work, consistent with previous research suggesting that self-employment is associated with longer working lives.

In Table 3b, the tax data suggest that the probability of stopping work is about 1 percentage point higher in the late 50s compared to age 55. (Recall that we interpret the coefficients on the year dummies interacted with the cohort dummy as age effects for the older cohort. Keep in mind also that without the interactions with IRA balance given in Table 3c, these coefficients represent the age effects for individuals with a zero balance.) That effect begins to increase around age 60, reaching 8.7 percentage points at age 63. The probability of transitioning to self-employment also increases by 0.2 percentage points, at age 63. While the impact on self-employment seems small, the overall probability of transitioning to self-employment is only

around 1.1 percent per year, so it represents an increase of around 18 percent. At age 66, the probability of stopping work increases by 11.2 percentage points, and the probability of becoming self-employed increases by 0.5 percentage points (around 45 percent). In the HRS data (Table 4b), the two-year probability of transitioning to self-employment increases by around 1 percentage point at ages 58 and 61, relative to ages 55 and below. (Again, without the interactions with defined contribution balance shown in Table 4c, these are effects for people with a zero balance.) At age 65, the two-year probability of transitioning to self-employment increases by 1.7 percentage points, relative to a mean of 2.6 percentage points, representing an increase of 64 percent. The magnitude is even larger at ages 66 and 67. The two-year hazard of stopping work increases by 15.9 percentage points at age 62 (relative to ages 55 and below) and by 18.9 percentage points at age 65. Again, these results are consistent with the story that wage earners may use self-employment as a flexible bridge job to transition to retirement, or that the availability of group health insurance plays an important role in transitions to self-employment.

Table 3c shows that individuals with larger IRA balances are more likely to retire at most ages, particularly ages 60 and beyond when penalty-free withdrawals are available. Larger IRA balances seem to have a variable effect on the probability of self-employment in the late 50s, but all of the coefficients for ages 61 and older are positive. While none of them is individually significant, they are jointly significant. Table 4c shows that in the HRS data, individuals with higher IRA and defined contribution balances are generally less likely to retire at all ages, though most of the individual coefficients are not significant. That finding is at odds with the tax data, and it remains even when we use IRA balances alone (results available upon request). The coefficients in the HRS self-employment transition regression are not consistently positive or negative. However, higher defined contribution balances do appear to be associated with an



increase in the self-employment transition probability at age 57, meaning that individuals aged 57 who have a high balance are more likely to transition to self-employment in the following two years.

Both the tax data and the HRS data provide weak evidence to suggest that higher IRA or defined contribution balance encourage self-employment transitions around the time that individuals become eligible for penalty-free withdrawals. That result is consistent with previous studies suggesting that liquidity is important in the choice to become self-employed (Zissimopoulos and Karoly 2009; Zissimopoulos, Karoly, and Gu 2009; Bruce, Holtz-Eakin, and Quinn 2000). However, other explanations are possible. For example, it is possible that individuals who are more attached to their jobs tend to accumulate retirement wealth in employer-sponsored pensions rather than IRAs, and these same individuals are less likely to transition to self-employment even after they become eligible to withdraw money from these accounts. In the HRS data, we see an increase in self-employment transitions soon after age 57 for individuals with higher IRA and combined IRA plus defined contribution wealth. However, we see no such increase for individuals with higher defined contribution wealth alone (results available upon request).

*b. Earnings*

Tables 5 (for the tax data) and 6 (for the HRS data) show the percentiles of the earnings distribution broken down by current work status. Table 6 additionally shows the percentiles of the hours and hourly wage distributions for the HRS data. In both tables, the top panel represents the full sample, while the bottom panel represents individuals who were wage earners in 1999 (for the tax data) or the baseline wave (for the HRS data). In the bottom panel, observations from

1999 or the baseline wave are excluded. These tables suggest that in the full sample, self-employed individuals earn more on average than wage earners. However, self-employed earnings are lower at the 50<sup>th</sup> percentile and below, suggesting that the difference in means is driven by outliers at the top. Indeed, the 99<sup>th</sup> percentile of earnings for the self-employed is substantially larger than the 99<sup>th</sup> percentile of earnings for wage-earners. The earnings of the self-employed are higher in the HRS than in the tax data, possibly due to underreporting on tax returns or due to individuals underestimating costs when reporting net earnings in the HRS.

The regression in the first column of Table 7 shows that, in the tax data, individuals in the younger cohort who start out as wage earners experience a drop of around \$10,649 upon switching to self-employment. This drop could merely reflect underreporting, or the fact that small businesses take a few years to become established. However, the interaction between the indicator for self-employed and the 1945 cohort dummy suggests that the older cohort experiences an additional \$18,160 drop in earnings upon switching to self-employment. This effect is not simply due to aging (i.e., that individuals who start out as workers are older when they switch to self-employment, and earnings decline with age) because we have included interactions between the year dummies and the 1945 cohort dummy. These interactions should pick up the fact that we would expect the 1945 cohort's earnings to decline over time. Our result is therefore consistent with evidence from the transition regressions suggesting that self-employment could be a form of partial retirement for older people. When the full sample is used (in the second column of the table), the impact of self-employment for older workers is smaller. That is, the drop in income is more pronounced for wage earners who switch to self-employment late in life. The HRS data (Table 8) is less helpful here due to the lack of a comparison comparison group. However, it suggests that income and hours drop upon transition

to self-employment, and that the drop is more pronounced for wage-earners who later become self-employed. Hourly wage, on the other hand, increases upon transitioning to self-employment.

Table 9 shows the impact of the duration of self-employment on total earnings. The first column suggests that when a wage earner in the younger cohort becomes self-employed, earnings initially drop by \$14,674. However, once an individual has been self-employed for more than 4 years, earnings actually increase slightly relative to what they earned in wages. On the other hand, not only is the initial drop is more pronounced for the older cohort, but earnings continue to decline with duration of self-employment. Again, this effect is not simply due to the fact that earnings decline with age for older workers because the regression includes year dummies interacted with the older cohort dummy. These interactions should control for any decline in income over time due to aging. Therefore, our result is again consistent with the story that older workers who transition to self-employment are in the process of retirement, gradually reducing their effort and earnings as they continue in self-employment. The second column of the table shows that these effects are present even when people who start out self-employed (or not working) are included in the sample; however, they are smaller in magnitude. Table 10 shows the same results for the HRS data. Again, interpretation is more difficult due to a lack of a comparison comparison group. However, these results suggest that income drops upon transitioning to self-employment, although the decline begins to reverse with the duration of self-employment.

#### **4. Conclusions**

We have shown that the flow of individuals transitioning between working for an employer to self-employment is rather modest: approximately 1 percent per year. This is true of

both members of the 1945 birth cohort who range from 54 to 68 during our period of observation and the members of the prime age cohort twenty years younger. Second, we find that the flow into self-employment strengthens at 62 and particularly at 65 and 66, although it remains relatively small. Finally, we find weak that individuals with higher IRA balances transition to self-employment at a greater rate at around the age when penalty-free withdrawals become available. These results are reasonably consistent between our primary data source (IRS tax returns filed between 1999 and 2013) and our secondary data source (HRS).

Our main findings concern the earnings of those who transition from work to self-employment. On average, the earnings of those who make this transition in the younger cohort fall considerably initially, but rise after they gain experience in their self-employment business. Those who transition in their 60s experience a much larger drop in earnings, and the decline continues as they gain experience. All of this suggests that the transition from employer-based work to self-employment for workers in their 60s usually represents a transition from full-time work to part-time work. Thus, self-employment appears to play the role of a bridge job in the transition to retirement, allowing workers to slowly reduce hours. The earnings of the self-employed are sufficiently low that the contribution to retirement security is quite modest. However, self-employed people do tend to retire at a later age.

The overall conclusions are that the work to self-employment to retirement pathway is less common than one might expect given the flexibility of self-employment, and that the number of people in their 60s who are self-employed would be even lower if they were reported in terms of “full time equivalent” (FTE) workers. To the extent that policy makers would like to encourage people to work longer so as to enhance retirement security, a year of self-employment is much less productive than an extra year of work for an employer. However, self-employment

may allow workers to stay in the labor force longer than they would otherwise. There is some evidence that retirement wealth in the form of IRAs or defined contribution pensions may facilitate transitions to self-employment, although further study is needed to distinguish alternative explanations.

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**Table 1: Transition Probabilities (Tax Return Data)**

		<i>1-Year</i>					
		1945 Cohort			1965 Cohort		
<i>t</i>	<i>t+1</i>	Not Working	Wage Earner	Self-Employed	Not Working	Wage Earner	Self-Employed
Not Working		0.92	0.06	0.02	0.81	0.16	0.04
Wage Earner		0.10	0.89	0.01	0.06	0.93	0.01
Self-Employed		0.18	0.07	0.75	0.14	0.13	0.73

		<i>2-Year</i>					
		1945 Cohort			1965 Cohort		
<i>t</i>	<i>t+2</i>	Not Working	Wage Earner	Self-Employed	Not Working	Wage Earner	Self-Employed
Not Working		0.89	0.08	0.03	0.74	0.22	0.05
Wage Earner		0.18	0.81	0.01	0.08	0.90	0.02
Self-Employed		0.24	0.09	0.66	0.18	0.19	0.64

		<i>4-Year</i>					
		1945 Cohort			1965 Cohort		
<i>t</i>	<i>t+4</i>	Not Working	Wage Earner	Self-Employed	Not Working	Wage Earner	Self-Employed
Not Working		0.86	0.11	0.03	0.65	0.29	0.06
Wage Earner		0.30	0.68	0.02	0.11	0.86	0.02
Self-Employed		0.34	0.12	0.54	0.22	0.26	0.53

**Table 2: Transition Probabilities (HRS Data)**

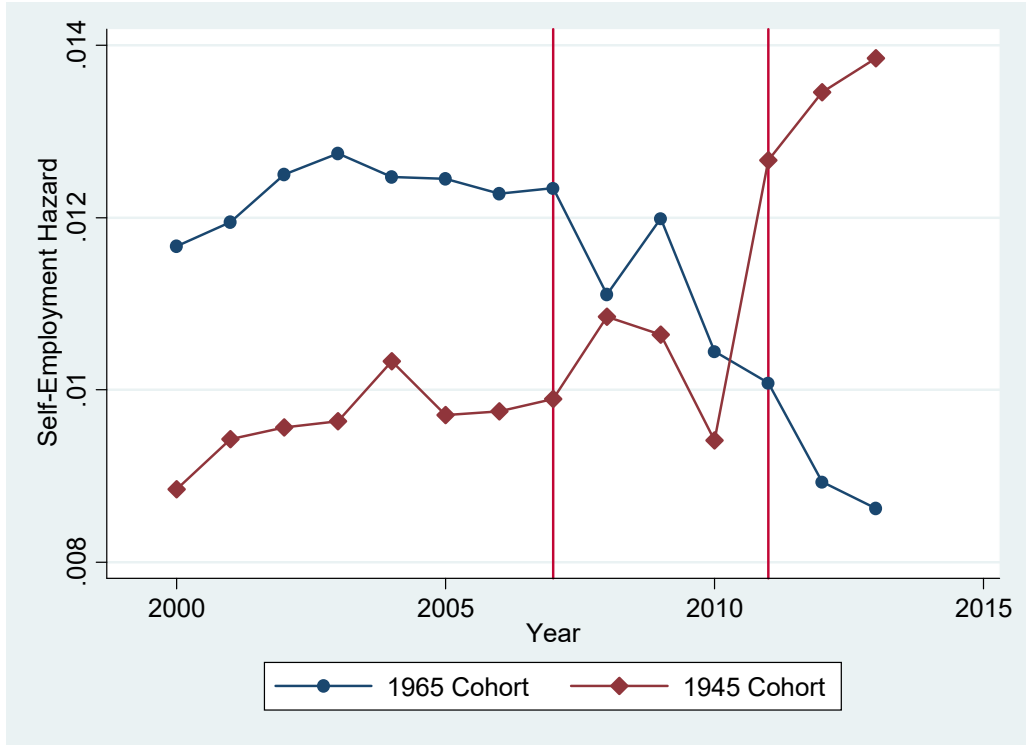
		<i>2-Year (1 Wave)</i>		
<i>t</i>	<i>t+2</i>	Not Working	Wage Earner	Self-Employed
Not Working		0.95	0.03	0.01
Wage Earner		0.19	0.78	0.02
Self-Employed		0.20	0.08	0.72

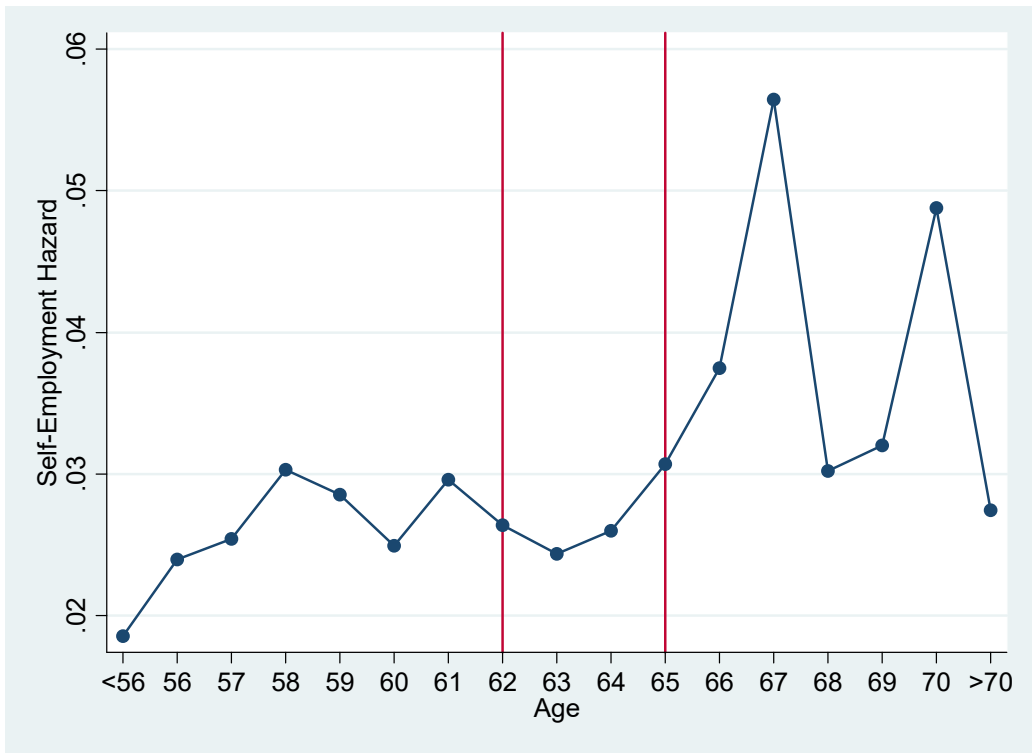
		<i>4-Year (2 Wave)</i>		
<i>t</i>	<i>t+4</i>	Not Working	Wage Earner	Self-Employed
Not Working		0.94	0.04	0.02
Wage Earner		0.32	0.65	0.03
Self-Employed		0.30	0.10	0.60



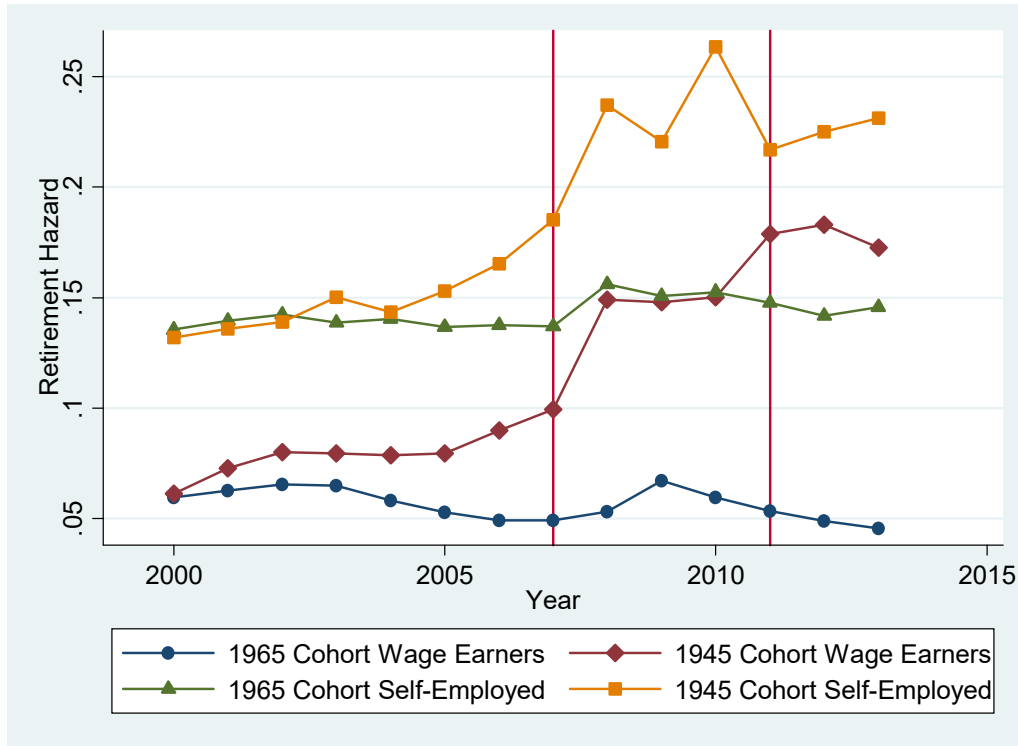
**Figure 1: Hazard of Self-Employment (Tax Return Data)**



**Figure 2: Two-Year Hazard of Self-Employment (HRS)**



**Figure 3: Hazard of Retirement (Tax Data)**



**Figure 4: Two-Year Hazard of Retirement (HRS)**



**Table 3a: Determinants of Transitions to Self-Employment and Non-Work (Tax Data, demographics)**

VARIABLES	P(Not Working t   Working t-1)	P(Self Employed t   Wage Earner t-1)
County Unemployment Rate	0.001*** (0.000)	0.000 (0.000)
UE Rate * 1945 Cohort	0.001*** (0.000)	-0.000*** (0.000)
1999 Earnings (\$1,000)	-0.000*** (0.000)	-0.000*** (0.000)
Female	0.017*** (0.000)	-0.003*** (0.000)
Married	0.012*** (0.000)	-0.002*** (0.000)
1999 Earnings * 1945 Cohort	0.000 (0.000)	0.000*** (0.000)
Female * 1945 Cohort	-0.014*** (0.001)	-0.002*** (0.000)
Married * 1945 Cohort	0.011*** (0.001)	0.002*** (0.000)
Self Employed	-0.049*** (0.000)	
Self Employed * 1945 Cohort	-0.069*** (0.001)	
Observations	6,986,866	5,957,412
R-squared	0.110	0.003
Dependent Variable Mean	0.078	0.011

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: Regressions also include year dummies, county dummies, lagged IRA balance, and lagged IRA balance interacted with the year dummies. Regression in column (1) utilizes only observations in which individual was working (whether self-employed or employee) in previous wave. Regression in second column utilizes only observations in which individual was an employee in previous wave. Standard errors clustered by individual in parentheses.

**Table 3b: Determinants of Transitions to Self-Employment and Non-Work (Tax Data, age dummies)**

VARIABLES (continued)	P(Not Working t   Working t-1)	P(Self Employed t   Wage Earner t-1)
1945 Cohort	0.012*** (0.001)	-0.003*** (0.000)
Year = 2001 * 1945 Cohort (Age 56)	0.006*** (0.001)	0.000 (0.000)
Year = 2002 * 1945 Cohort (Age 57)	0.010*** (0.001)	0.000 (0.000)
Year = 2003 * 1945 Cohort (Age 58)	0.013*** (0.001)	0.001 (0.000)
Year = 2004 * 1945 Cohort (Age 59)	0.016*** (0.001)	0.001* (0.000)
Year = 2005 * 1945 Cohort (Age 60)	0.022*** (0.001)	0.000 (0.000)
Year = 2006 * 1945 Cohort (Age 61)	0.038*** (0.001)	0.000 (0.000)
Year = 2007 * 1945 Cohort (Age 62)	0.047*** (0.001)	-0.000 (0.000)
Year = 2008 * 1945 Cohort (Age 63)	0.087*** (0.001)	0.002*** (0.000)
Year = 2009 * 1945 Cohort (Age 64)	0.071*** (0.002)	0.002*** (0.001)
Year = 2010 * 1945 Cohort (Age 65)	0.084*** (0.002)	0.003*** (0.001)
Year = 2011 * 1945 Cohort (Age 66)	0.111*** (0.002)	0.005*** (0.001)
Year = 2012 * 1945 Cohort (Age 67)	0.122*** (0.002)	0.007*** (0.001)
Year = 2013 * 1945 Cohort (Age 68)	0.120*** (0.002)	0.007*** (0.001)
Observations	6,986,866	5,957,412
R-squared	0.110	0.003
Dependent Variable Mean	0.078	0.011

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: Regressions also include year dummies, county dummies, lagged IRA balance, and lagged IRA balance interacted with the year dummies. Regression in column (1) utilizes only observations in which individual was working (whether self-employed or employee) in previous wave. Regression in second column utilizes only observations in which individual was an employee in previous wave. Standard errors clustered by individual in parentheses.

**Table 3c: Determinants of Transitions to Self-Employment and Non-Work (Tax Data, IRA balance)**

VARIABLES (continued)	P(Not Working t   Working t-1)	P(Self Employed t   Wage Earner t-1)
Lagged IRA Balance * 1945 Cohort	-0.005 (0.003)	-0.003* (0.002)
Lagged IRA Balance * Year = 2001 * 1945 Cohort (Age 56)	0.004* (0.002)	-0.000 (0.002)
Lagged IRA Balance * Year = 2002 * 1945 Cohort (Age 57)	0.009*** (0.003)	0.005** (0.002)
Lagged IRA Balance * Year = 2003 * 1945 Cohort (Age 58)	0.001 (0.004)	-0.009*** (0.003)
Lagged IRA Balance * Year = 2004 * 1945 Cohort (Age 59)	0.006 (0.003)	0.001 (0.002)
Lagged IRA Balance * Year = 2005 * 1945 Cohort (Age 60)	0.008** (0.003)	-0.000 (0.002)
Lagged IRA Balance * Year = 2006 * 1945 Cohort (Age 61)	0.005 (0.003)	0.003* (0.002)
Lagged IRA Balance * Year = 2007 * 1945 Cohort (Age 62)	0.007** (0.003)	0.001 (0.002)
Lagged IRA Balance * Year = 2008 * 1945 Cohort (Age 63)	0.009*** (0.003)	0.002 (0.002)
Lagged IRA Balance * Year = 2009 * 1945 Cohort (Age 64)	0.016*** (0.004)	0.002 (0.002)
Lagged IRA Balance * Year = 2010 * 1945 Cohort (Age 65)	0.008** (0.003)	0.003 (0.002)
Lagged IRA Balance * Year = 2011 * 1945 Cohort (Age 66)	0.008** (0.003)	0.004* (0.002)
Lagged IRA Balance * Year = 2012 * 1945 Cohort (Age 67)	0.008** (0.003)	0.004* (0.002)
Lagged IRA Balance * Year = 2013 * 1945 Cohort (Age 68)	0.006* (0.003)	0.003 (0.002)
Observations	6,986,866	5,957,412
R-squared	0.110	0.003
Dependent Variable Mean	0.078	0.011

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: Regressions also include year dummies, county dummies, lagged IRA balance, and lagged IRA balance interacted with the year dummies. Regression in column (1) utilizes only observations in which individual was working (whether self-employed or employee) in previous wave. Regression in second column utilizes only observations in which individual was an employee in previous wave. Standard errors clustered by individual in parentheses.

**Table 4a: Determinants of Transitions to Self-Employment and Non-Work (HRS Data, demographic variables)**

VARIABLES	P(Not Working t   Working t-1)	P(Self Employed t   Wage Earner t-1)
Monthly Regional Unemployment Rate	0.0117** (0.0045)	-0.0005 (0.0024)
Self-Employed Previous Wave	-0.0136** (0.0057)	
Female	0.0242*** (0.0047)	-0.0078*** (0.0023)
Married	-0.0092* (0.0051)	0.0037 (0.0024)
Baseline Wave Earnings (\$1,000)	-0.0000 (0.0000)	0.0000 (0.0000)
Black	0.0142** (0.0071)	-0.0064** (0.0029)
Other Race	-0.0075 (0.0109)	0.0009 (0.0049)
Hispanic Ethnicity	0.0029 (0.0090)	-0.0144*** (0.0035)
GED	-0.0180 (0.0136)	-0.0089* (0.0051)
High School Graduate	-0.0470*** (0.0078)	-0.0056* (0.0034)
Some College	-0.0535*** (0.0081)	-0.0002 (0.0036)
College +	-0.0908*** (0.0082)	0.0061 (0.0040)
Observations	47,934	31,273
R-squared	0.0627	0.0104
Dependent Variable Mean	0.174	0.026

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: Regressions utilize respondent-level weights and also include wave dummies, month dummies, and census region dummies. Standard errors clustered by individual. Regression in column (1) utilizes only observations in which individual was working (whether self-employed or employee) in previous wave. Regression in column (2) utilizes only observations in which individual was an employee in previous wave. Standard errors clustered by individual in parentheses

**Table 4b: Determinants of Transitions to Self-Employment and Non-Work (HRS Data, age dummies)**

VARIABLES (continued)	P(Not Working t   Working t-1)	P(Self Employed t   Wage Earner t-1)
Age = 56	0.0286*** (0.0085)	0.0038 (0.0052)
Age = 57	0.0097 (0.0085)	-0.0037 (0.0054)
Age = 58	0.0207** (0.0082)	0.0121** (0.0049)
Age = 59	0.0444*** (0.0093)	0.0058 (0.0052)
Age = 60	0.0560*** (0.0093)	0.0054 (0.0047)
Age = 61	0.0650*** (0.0090)	0.0111** (0.0056)
Age = 62	0.1597*** (0.0112)	0.0095* (0.0053)
Age = 63	0.1779*** (0.0121)	0.0041 (0.0052)
Age = 64	0.1221*** (0.0120)	0.0098* (0.0055)
Age = 65	0.1885*** (0.0128)	0.0167** (0.0068)
Age = 66	0.2079*** (0.0156)	0.0222*** (0.0084)
Age = 67	0.1773*** (0.0161)	0.0358*** (0.0110)
Age = 68	0.1921*** (0.0186)	0.0004 (0.0087)
Age = 69	0.1821*** (0.0169)	0.0139 (0.0086)
Age = 70	0.1861*** (0.0184)	0.0209* (0.0125)
Age > 70	0.2412*** (0.0089)	0.0092** (0.0042)
Observations	47,934	31,273
R-squared	0.0627	0.0104
Dependent Variable Mean	0.174	0.026

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: Regressions utilize respondent-level weights and also include wave dummies, month dummies, and census region dummies. Standard errors clustered by individual. Regression in column (1) utilizes only observations in which individual was working (whether self-employed or employee) in previous wave. Regression in column (2) utilizes only observations in which individual was an employee in previous wave. Standard errors clustered by individual in parentheses

**Table 4c: Determinants of Transitions to Self-Employment and Non-Work (HRS Data, defined contribution balance)**

VARIABLES (continued)	P(Not Working t   Working t-1)	P(Self Employed t   Wage Earner t-1)
Lagged IRA + DC Balance (\$100,000)	0.0045* (0.0025)	-0.0022** (0.0009)
Lagged IRA + DC Balance*Age = 56	-0.0054 (0.0040)	0.0055 (0.0049)
Lagged IRA + DC Balance*Age = 57	0.0054 (0.0061)	0.0148*** (0.0055)
Lagged IRA + DC Balance*Age = 58	-0.0008 (0.0042)	0.0010 (0.0021)
Lagged IRA + DC Balance*Age = 59	-0.0013 (0.0057)	0.0049 (0.0033)
Lagged IRA + DC Balance*Age = 60	-0.0039 (0.0027)	0.0023 (0.0018)
Lagged IRA + DC Balance*Age = 61	-0.0025 (0.0030)	0.0016 (0.0010)
Lagged IRA + DC Balance*Age = 62	0.0013 (0.0044)	-0.0005 (0.0020)
Lagged IRA + DC Balance*Age = 63	-0.0093* (0.0049)	0.0040 (0.0036)
Lagged IRA + DC Balance*Age = 64	-0.0046 (0.0047)	-0.0002 (0.0013)
Lagged IRA + DC Balance*Age = 65	-0.0051* (0.0029)	-0.0014 (0.0015)
Lagged IRA + DC Balance*Age = 66	-0.0073 (0.0057)	-0.0001 (0.0022)
Lagged IRA + DC Balance*Age = 67	-0.0030 (0.0061)	0.0026 (0.0062)
Lagged IRA + DC Balance*Age = 68	0.0029 (0.0087)	0.0155 (0.0103)
Lagged IRA + DC Balance*Age = 69	-0.0026 (0.0055)	0.0025 (0.0023)
Lagged IRA + DC Balance*Age = 70	-0.0043 (0.0078)	0.0155 (0.0097)
Lagged IRA + DC Balance*Age > 70	-0.0082*** (0.0028)	0.0024** (0.0010)
Observations	47,934	31,273
R-squared	0.0627	0.0104
Dependent Variable Mean	0.174	0.026

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: Regressions utilize respondent-level weights and also include wave dummies, month dummies, and census region dummies. Standard errors clustered by individual. Regression in column (1) utilizes only observations in which individual was working (whether self-employed or employee) in previous wave. Regression in column (2) utilizes only observations in which individual was an employee in previous wave. Standard errors clustered by individual in parentheses



**Table 5: Income Summary Statistics (Tax Data)**

<b>Panel A: Full Sample</b>						
	1945 Birth Cohort			1965 Birth Cohort		
Percentiles	<i>Work for Employer</i>	<i>Self- Employed</i>	<i>Not Working</i>	<i>Work for Employer</i>	<i>Self- Employed</i>	<i>Not Working</i>
1%	3597.009	3172.013	0	3778.121	3245.337	0
5%	6078.031	3884.01	0	7039.916	4264.9	0
10%	9236.307	4720.846	0	11051.33	5468.615	0
25%	18597.07	8099.749	0	21430.77	8958.454	0
50%	35084.24	17578.92	0	37259.32	15341.71	0
75%	59261.36	44487.2	0	59463.3	31762.99	0
90%	93940.28	108658.3	498.9462	91800.18	74465.31	1103.482
95%	130361.6	184994.7	1563.055	123615	134292.3	1992.857
99%	319919.2	524961	2696.646	268797.3	426936.8	2794.917
Mean	52500.55	52845.54	171.71	50868.06	40543.98	243.49
<b>Panel B: Wage Earner in 1999</b>						
	1945 Birth Cohort			1965 Birth Cohort		
Percentiles	<i>Work for Employer</i>	<i>Self- Employed</i>	<i>Not Working</i>	<i>Work for Employer</i>	<i>Self- Employed</i>	<i>Not Working</i>
1%	3712.414	3129.181	0	4164.418	3272.44	0
5%	6584.274	3680.087	0	8678.432	4371.72	0
10%	10079.5	4402.002	0	13523.07	5726.18	0
25%	20073.63	7153.896	0	24653.7	9343	0
50%	36577.98	14720.44	0	40544.78	16579.91	0
75%	60779.77	38492.05	0	63310.38	37223.57	0
90%	96058.48	92235.86	329.5387	96796.4	94257.81	1349.299
95%	133486.8	161377.8	1401.218	130368.6	178584.6	2148.997
99%	329811.1	497172.7	2665.427	286782.7	573016.6	2832.018
Mean	54364.91	46495.91	155.02	54877.31	49936.14	283.04

Notes: Panel B includes only observations after 1999.

**Table 6: Income, Hours, and Wages Summary Statistics (HRS data)**

<b>Panel A: Full Sample</b>									
Percentiles	Earnings			Hours			Hourly Wage		
	<i>Work for Employer</i>	<i>Self- Employed</i>	<i>Not Working</i>	<i>Work for Employer</i>	<i>Self- Employed</i>	<i>Not Working</i>	<i>Work for Employer</i>	<i>Self- Employed</i>	<i>Not Working</i>
1%	1094.39	0.00	0.00	5	2	0	2.69	0.00	0.00
5%	5717.86	298.73	0.00	15	6	0	6.00	0.01	0.00
10%	9931.06	2956.97	0.00	20	10	0	7.14	2.50	0.00
25%	20791.80	11544.53	0.00	35	20	0	10.00	7.69	0.00
50%	39157.50	33407.01	0.00	40	40	0	15.26	16.84	0.00
75%	66804.95	76968.06	0.00	47	50	0	25.00	34.72	0.00
90%	105076.50	163952.50	0.00	55	64	0	37.52	76.92	0.00
95%	142198.90	267872.30	0.00	60	75	0	48.08	134.62	0.00
99%	263705.80	743055.40	0.00	80	100	0	84.62	500.00	0.00
Mean	54090.10	80055.36	0.00	40	39	0	21.43	52.21	0.00

<b>Panel B: Employees at Baseline</b>									
Percentile	Earnings			Hours			Hourly Wage		
	<i>Work for Employer</i>	<i>Self- Employed</i>	<i>Not Working</i>	<i>Work for Employer</i>	<i>Self- Employed</i>	<i>Not Working</i>	<i>Work for Employer</i>	<i>Self- Employed</i>	<i>Not Working</i>
1%	1657.89	0.00	0.00	5	1	0	3.60	0.00	0.00
5%	6733.94	0.00	0.00	15	5	0	6.25	0.00	0.00
10%	11156.78	1493.56	0.00	20	10	0	7.50	1.12	0.00
25%	22117.26	6194.64	0.00	36	20	0	10.40	6.86	0.00
50%	40319.86	20056.39	0.00	40	30	0	16.00	15.26	0.00
75%	68028.05	55283.46	0.00	46	48	0	25.64	33.00	0.00
90%	106167.00	117326.20	0.00	55	60	0	38.46	75.00	0.00
95%	143153.50	178591.60	0.00	60	70	0	48.94	144.23	0.00
99%	255420.70	515795.30	0.00	80	85	0	83.65	625.00	0.00
Mean	54709.30	49858.69	0.00	40	34	0	21.97	61.85	0.00

Notes: Summary statistics use respondent-level weights. Panel B utilizes only observations after the baseline wave.

**Table 7: Impact of Self-Employment on Earnings (Tax Data)**

	Wage Earner in 1999	Full Sample
Self Employed	-10,649.349*** -1,002.40	-7,971.448*** -522.28
Self Employed * 1945 Cohort	-18,159.984*** -2,440.79	-7,486.722*** -1,130.13
Not Working	-32,666.140*** -205.296	-28,154.723*** -142.751
Not Working x 1945 Cohort	-1,321.728*** -371.986	-5,291.311*** -282.037
Observations	7,252,994	10,496,130
R-squared	0.014	0.015
Individuals	518,071	699,742
Dependent Variable Mean for Wage Earners (1945 cohort)	54364.91	52500.55
Dependent Variable Mean for Wage Earners (1965 cohort)	54877.31	50868.06

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: All regressions also include year dummies, interactions between year dummies and the 1945 cohort dummy, and individual fixed effects. Regression for wage earners in 1999 utilize only post 1999 observations. Standard errors clustered by individual in parentheses.

**Table 8: Impact of Self-Employment on Earnings, Hours, and Hourly Wage**

VARIABLES	<i>Earnings</i>		<i>Hours</i>		<i>Hourly Wage</i>	
	Wage Earner at Baseline	Full Sample	Wage Earner at Baseline	Full Sample	Wage Earner at Baseline	Full Sample
Self-Employed	-21,821*** (3,184)	-4,689** (2,117)	-7.8518*** (0.6789)	-4.3269*** (0.3800)	32.2312*** (11.0014)	23.6020*** (4.8363)
Not working	-39,006*** (917)	-36,852*** (764)	-34.1285*** (0.2224)	-33.8621*** (0.1742)	-20.8674*** (0.7541)	-20.3526*** (1.4081)
Observations	51,306	157,756	55,218	167,437	52,103	159,443
R-squared	0.1322	0.0358	0.7591	0.6960	0.0040	0.0036
Individuals	8,402	27,176	8,618	28,054	8,426	27,367
Dependent Variable Mean for Employees	47839.02	46599.00	38.67	38.42	21.97	21.43

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: Regressions utilize respondent-level weights and also include age dummies, wave dummies, and individual fixed effects. Regressions for wage earners at baseline utilize only post-baseline observations. Standard errors clustered by individual in parentheses.

**Table 9: Impact of Self-Employment on Earnings by Duration of Self Employment (Tax Data)**

	Wage Earner in 1999	Full Sample
Self-Employed 1-2 Years	-14,673.577*** -776.519	-10,878.007*** -429.597
Self=Employed 3-4 Years	-4,824.385*** -1,855.14	-4,339.810*** -844.154
Self Employed 4+ Years	3,942.567* -2,135.09	969.435 -985.919
Self-Employed 1-2 Years * 1945 Cohort	-14,119.462*** -1,899.24	-7,315.809*** -992.467
Self=Employed 3-4 Years * 1945 Cohort	-24,799.463*** -4,170.01	-8,518.532*** -1,591.94
Self Employed 4+ Years * 1945 Cohort	-31,385.762*** -4,832.18	-8,935.621*** -1,955.52
Not Working	-32,637.193*** -205.595	-28,142.105*** -142.84
Not Working x 1945 Cohort	-1,344.241*** -374.683	-5,169.678*** -280.646
Observations	7,252,994	10,496,130
R-squared	0.014	0.015
Individuals	518,071	699,742
Dependent Variable Mean for Wage Earners (1945 Cohort)	54364.91	52500.55
Dependent Variable Mean for Wage Earners (1965 cohort)	54877.31	50868.06

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: All regressions also include year dummies, interactions between year dummies and the 1945 cohort dummy, and individual fixed effects. Regression for wage earners in 1999 utilize only post 1999 observations. Standard errors clustered by individual in parentheses.

**Table 10: Impact of Self-Employment on Earnings by Duration of Self Employment (HRS)**

VARIABLES	<i>Earnings</i>		<i>Hours</i>		<i>Hourly Wages</i>	
	Wage Earner at Baseline	Full Sample	Wage Earner at Baseline	Full Sample	Wage Earner at Baseline	Full Sample
Self-Employed x 1 Wave	-24,049*** (3,638)	-8,759*** (2,661)	-8.2144*** (0.6842)	-4.5169*** (0.3956)	33.1225 (20.6793)	16.9961*** (6.5273)
Self-Employed x 2 Waves	-22,075*** (4,183)	2,944 (7,094)	-7.5847*** (0.9305)	-3.5599*** (0.4846)	15.6909** (7.4756)	33.5443*** (12.0115)
Self-Employed x 3 Waves +	-13,624** (6,131)	-3,628 (6,336)	-6.7439*** (1.2225)	-4.6342*** (0.4831)	52.9554 (40.6177)	28.2877*** (7.2642)
Not working	-38,889*** (912)	-36,828*** (735)	-34.1074*** (0.2226)	-33.8753*** (0.1745)	-20.6249*** (0.8701)	-20.2284*** (1.4105)
Observations	51,306	157,756	55,218	167,437	52,103	159,443
R-squared	0.1324	0.0361	0.7592	0.6961	0.0042	0.0038
Individuals	8,402	27,176	8,618	28,054	8,426	27,367
Mean for Employees	47839.02	46599.00	38.67	38.42	21.97	21.43

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: Regressions utilize respondent-level weights and also include age dummies, wave dummies, and individual fixed effects. Regressions for wage earners at baseline utilize only post-baseline observations. Standard errors clustered by individual in parentheses.