Retirement Transitions of the Self-employed in the United States and England

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1. INTRODUCTION

According to data from the U. S. Bureau of Labor Statistics (BLS), 14.2 million U. S. workers, or 10.5 percent of the workforce, were self-employed in unincorporated or incorporated businesses in 2001. Since rates of self-employment rise with age, a disproportionate share of the self-employed are middle aged or older workers. Some of these older workers have been self-employed for much or all of their working careers while others have made the transition to self-employment later in their careers, often as part of the transition to retirement. Similar patterns exist among older workers in England where approximately one quarter of workers over age 60 are self-employed. Self-employment among older workers in both countries is likely to become more prevalent over time given the growing size of the older population and policy changes promoting work among older individuals.

Despite the prevalence of self-employment at older ages, there is a paucity of studies that examine the patterns the labor force transitions of older self-employed workers.[1] Although self-employed workers are from both the bottom and top of the wealth distribution, they on average, hold more wealth than wage and salary workers yet tend to retire later than their wage and salary counterparts. Understanding why self-employed workers are less likely to exit the labor force at older ages relative to their wage and salary counterparts may assist policy makers seeking to encourage later retirement ages. The retirement decisions of older workers have implications for the adequacy of national savings rates and the solvency of social insurance programs such as Social Security in the United States. To the extent that self-employment and retirement rates differ in a setting such as the U.K. or many European countries with national health insurance and other differences in the institutional features of public and private pension systems, this variation can assist in our understanding of how institutions affect the labor force decisions of older workers.

Table 1 shows self-employment rates by age among older workers for ten European countries, England, and the United States. The table reveals substantial heterogeneity in self-

[1] A substantial literature in the United States focuses on the determinants of transitions to retirement (for reviews, see Hurd, 1990b and Lumsdaine and Mitchell, 1999). The timing of retirement is in part determined by the incentives imbedded in the rules determining Social Security benefits, as well as employer-provided pension benefits (see Hurd, 1990b and Lumsdaine and Mitchell, 1999 for reviews and Anderson, Gustman and Steinmeier, 1999; Samwick, 1998). Few retirement studies examine self-employed workers with the exceptions

employment rates across countries, ranging from just eight percent of 50-55 year old workers in Denmark to 36 percent of such workers in Greece. The United States and England are in the middle of the range with 19 and 16 percent of 50-55 year old workers in self-employment, respectively. The table also illustrates how self-employment rates rise dramatically with age, more than doubling by ages 65 and older in virtually every country. For example, 26 percent of workers in Denmark are self-employed by ages 65 and older, 62 percent are self-employed in Greece, 40 percent in England, and 37 percent in the United States.

While some of the rise in self-employment with age is due to later-life transitions into self-employment, most of it is due to differential retirement rates between the self-employed and wage and salary workers. In many countries, public and private pension eligibility, as well as access to health insurance varies between self-employed and wage and salary workers, and these differences are likely to cause differential retirement patterns both within and across countries. By exploiting variation in these institutional features across countries, we can explore the effect of policy parameters that often cannot be studied in a single country.

In this paper, we examine how public and private pension and health insurance systems affect the retirement transitions of self-employed older workers compared to wage and salary workers. We focus our analysis on the United States and England as these are the only countries of those shown in Table 1 for which the necessary panel data for analyzing such transitions are currently available. Specifically, we rely on longitudinal data from the Health and Retirement   Study (HRS) in the United States and the English Longitudinal Survey of Ageing (ELSA). These panel data have the advantage of collecting comparable demographic, economic, and labor market data on workers in the two countries.

Using these longitudinal data, we find that the higher rates of exit from the labor force at ages 55 and older in England relative to the United States is due to the availability of publicly provided health insurance. At all ages and in both England and the United States, wage and salary workers are more likely to retire than self-employed workers in large part because of employer provided defined benefit pensions with incentives to retire at key ages, and these ages more often than not, coincide with the age of eligibility for public benefits.

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of Fuchs (1982), Quinn (1999), Hochguertel (2005) and Parker and Rougier (2007), Zissimopoulos and Karoly

These findings underscore the importance of institutional features of the labor market in influencing individual decisions about when to retire. They also suggest that in the United States, the availability of Medicare at age 65 limits the proportion of workers willing to work past 65 but that the movement of employers away from defined benefit pension plans is likely to encourage work at older ages.

2. INSTITUTIONAL DIFFERENCES RELEVANT FOR RETIREMENT BEHAVIOR IN THE UNITED STATES AND ENGLAND

Our analysis of data from the HRS and ELSA allow us to exploit institutional variation across the United States and the United Kingdom.[2] In this section, we briefly summarize key differences in pension systems, disability insurance and other benefits, and health insurance—all features that are potentially relevant for understanding differences in retirement behavior differences by class of worker within and between the two countries.

The typical wage and salary worker in the United Kingdom participates in some kind of defined benefit (DB) pension plan, either through the state or an employer and faces retirement incentives associated with key retirement ages. In contrast, the typical long-term self-employed worker in the United Kingdom is enrolled in a defined contribution (DC) plan, with no such retirement incentives arising at key ages. Although they do participate in the first-tier of the public system, which does not allow benefit claiming until the state pension age, the benefit amount is unaffected by additional years of work and replaces a small portion of pre-retirement earnings. While the state pension age for men in the United Kingdom is 65, the availability of other types of public benefits facilitates early retirement at age 60. Because the self-employed face the same eligibility criteria for these other benefits as wage and salary workers, benefit availability is unlikely to have a differential effect on retirement patterns within the United Kingdom, but the availability of these benefits may serve to raise retirement rates relative to the United States.

(2007).

[2] While ELSA covers England only, we discuss institutional and policy differences between the United States and the entire United Kingdom. We note the extent to which there are differences between England and the rest of the United Kingdom in the institutional and policy differences we document.

[5] There are other data available to examine labor force transitions between waves including self-reports of retirement and labor force status. These measures, however, tend to be more subjective and may have different meanings across countries. Future work will examine changes in "usual hours of work per week," which may be considered objective and commonly defined across countries.

In the United States, the differences in the retirement incentives faced by wage and salary workers and the self-employed are much less stark. Both classes of workers participate in a DB public pension system with early and reduced benefits available at age 62 and full benefits at age 65 (or 66). Wage and salary workers are more likely to have an employer-provided DB plan as well, but participation in such plans is far from universal. As a class, the pension arrangements of wage and salary workers are becoming more and more similar to those of self-employed workers, as employers phase out DB plans in favor of DC plans.

The lack of universal health insurance coverage in the United States prior to age 65 suggests that health insurance arrangements are likely to play an important role in the United States, unlike the United Kingdom. Compared to the United Kingdom, job lock issues may be particularly important for older wage and salary workers who do not have access to retiree health insurance through their employer, causing them to delay retirement until they are at least within 18 months of turning 65 and thus eligible to continue their employer coverage until their 65th birthday. Because the self-employed typically purchase insurance on the individual market as it is, their health insurance coverage does not explicitly depend on whether they continue working, although the relatively high cost of individual health insurance may effectively prevent retirement prior to Medicare eligibility. On balance, the differing institutional arrangements in the United States and United Kingdom suggest that retirement rates might be higher in the United Kingdom, and in both countries, higher among wage and salary workers than among the self-employed.

3. THE HRS AND ELSA DATA

This research is based on two longitudinal surveys in the United States and England designed to examine changes in labor force status, income, wealth and health among older individuals. The HRS, first fielded in 1992, is a U.S. sample of approximately 7,600 households (12,654 individuals) with at least one person in the birth cohorts of 1931 through 1941. This biennial survey was integrated in 1998 with another biennial survey: The Assets and Health Dynamics of the Oldest Old (AHEAD) survey including 6,052 households (8,222 individuals) with at least one person born in 1923 or earlier. In 1998, the HRS was augmented with baseline interviews from a sample from the birth cohorts of 1924 through 1930 and 1942 through 1947, and was representative of all cohorts born in 1947 or earlier. In 2004, the sample was further augmented with the 1948 to 1953 birth cohorts. This paper

relies only on the 2002 and 2004 waves in oder to cover a comparable time period as the English data.

The ELSA is modeled on the HRS and designed to facilitate cross-national analyses of aging by collecting comparable data on labor force transitions, health, wealth, and other demographic and job characteristics. The ELSA survey sample is drawn from respondents to the Health Survey for England (HSE) and the first wave of data was collected in 2002. The second wave of data collection took place in 2004 and both waves of data are publicly available and used in this analysis. All waves are conducted using face-to-face interviews.

The ELSA survey instrument has been constructed to be as comparable as possible to the HRS within the constraints of institutional differences between the countries. As a result, direct comparisons between the surveys are possible in many domains of economic and health measures. The analysis is conducted using weighted data to account for any bias due to non-random non-response in ELSA and in the HRS, in addition, to account for over-sampling of sub-samples. The following discussion focuses on the measures most important to our study. Because of the similarity in survey design, we focus on a description of the HRS data, noting differences with ELSA when relevant.

Labor Force Status and Class of Worker. In each wave, respondents are asked if he or she is currently working for pay (HRS) or did any paid work in the last month (ELSA). Changes in the variable "working for pay" is our primary outcome of interest in this study.[5] In terms of employment class, workers in each baseline interview are asked whether they are currently self-employed in their main job, and how long they have been self-employed (i.e., tenure on the current job).

Household Wealth, Income, Pensions. HRS has a comprehensive set of questions to measure household wealth. Housing equity is collected separately. Similar methods are used in ELSA. Household income in both surveys includes income from (self and spouse) labor earnings, capital, pensions, public programs and other sources. The surveys ask respondents if they have employer and/or private pensions, type of pension, normal and early retirement ages associated with these pensions, and their pension wealth. Although pension

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[7] The percentage of self-employed workers in England with employees among the non-missing observations is approximately 14% lower than that reported in the U.K. census for England and Wales. However, respondents in the unclassified group are likely to have employees because their income and wealth are on average similar to self-employed respondents with employees.

wealth can be constructed for the HRS sample using restricted Social Security earnings records, no such files are yet available for ELSA.

Health Insurance. In the HRS, respondents are asked if they are covered by health insurance and type (employer, spouse's employer, government or other) and if this health insurance covers retirees, up to age 65. There is no parallel questioning in ELSA because the public health care system is universal.

4. DESCRIPTIVE ANALYSIS OF SELF-EMPLOYMENT AND EMPLOYMENT TRANSITIONS

Overall 22 percent of older U.S. workers are self-employed compared with 20 percent in England (Table 2). In the United States, a higher share of the self-employed is self-employed before age 50 (as opposed to at or after age 50) compared with workers in England (68 versus 57 percent). The composition of the self-employed, defined in terms of the presence of employees, is considerably different in the United States and England. Whereas 61 percent of the U.S. self-employed are in businesses with employees (other than their spouse), that figure is just 20 percent in England.[7] In both the United States and England, compared with wage and salary workers, the self-employed are more likely to be male and distributed toward older ages (Table 3). While the U.S. self-employed are somewhat more likely to be married and foreign born compared with their wage and salary counterparts, the reverse is true for England. U.S. self-employed workers are also considerably more likely to work part time compared with wage and salary workers (32 versus 17 percent), whereas the share working part time is identical (35 percent) for the two groups of workers in England and approximately equal to that of self-employed workers in the United States. The higher percentage of part-time wage workers in England compared to the United States is largely driven by high numbers of part-time female workers in England. Indeed, among males, the percentage of part-time wage and salary workers is low in both countries (12 percent in the United States and 16 percent in England). Finally, the self-employed in the United States are distributed toward the higher end of the income and wealth distribution compared with wage and salary workers. In England, this relationship also holds for the wealth of the self-employed but not their income.

Table 4 shows the pension coverage rate on the current job for wage and salary and self-employed workers in the two countries, as well as for all workers.[8] Overall, the pension

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[8] The pension plan variables are defined for the first pension described by the respondent.

coverage rate is slightly higher for England compared with the United States: 56 versus 52 percent. The contrast is much sharper, however, by class of worker. While 39 percent of the self-employed in England are covered by a pension on the current job, that rate is just 12 percent for the self-employed in the United States. In England, 96 percent of the self-employed with a pension report that it is a DC plan. In the United States, of the 12 percent of self-employed workers with a pension, 64 percent have a DC plan.

Nearly half of wage and salary workers in England face an NRA of 65, while the NRA is 60 for nearly all other workers (Figure 1). In contrast, the NRA for U.S. workers is much less concentrated. Modal ages in descending frequency are 65, 62 and 55 with most of the remaining portion distributed between the age of 56 and 59. Variation is evident as well in the ERA as shown in Figure 2. Again, most English workers are concentrated in a few ages: 60, 55 and 50. Modal points in the ERA distribution for U.S. workers include ages 55 and 62.

Transitions to Retirement. Figure 3 displays the age pattern in the transition to retirement. The age categories, defined as of time *t+2* (i.e., 2004), are grouped into two-year intervals (with the exception of age 64) to reduce some of the noise in the age pattern because of small cell sizes in single-year age groups. As seen in Figure 3, the likelihood of moving to retirement generally increases with age in each country for both wage and salary and self-employed workers. In England (lines plotted with solid lines and open symbols), the transition rates are higher at each age for wage and salary workers compared with their U.S. counterparts, and, in most cases, the transition rates are higher at each age for the self-employed too. For both countries, the transition rates to retirement are higher (or the same in the case of the United States) at each age for wage and salary workers compared with the self-employed. With the exception of U.S. self-employed workers, there is a discrete jump in the transition rate for those reaching age 65 or 66 by *t+2*. This is the group that turned 65 at some point during the interval. This jump is considerably larger for workers in either class in England compared with the United States.

5. REGRESSION ANALYSIS OF RETIREMENT TRANSITIONS

We use a linear probability model to estimate the probability of exiting the labor force (defined as not working for pay) by 2004 conditional upon working for pay in 2002. We estimate a pooled model for all workers, but fully interact all covariates with indicators for country and class of worker (i.e., self-employed in the United States, wage and salary in the

United States, self-employed in England, wage and salary in England). Our identifying assumption is that workers in the United States and England have similar preferences for work and leisure, but that the institutions constraining their decisions may vary. Identification also relies upon the assumption that workers' prior class of worker decisions are unrelated to the age structure of retirement benefits for that class.

We model institutional incentives using the age-eligibility structure of private and public benefits. Although this approach uses less variation than if we had pension wealth, our flexible age structure picks up the nonlinearities in pension wealth that likely affect behavior without relying on less desirable variation in pension wealth owing to past earnings. Our focus is on how age eligibility for public benefits affects the probability of exiting the labor force. To allow for a flexible age structure and for slope and intercept shifts at the ages of early and standard eligibility for public pensions we include in the model a quadratic in current age, an indicator of eligibility for early public pension benefits (PEA), an indicator of eligibility for standard (normal) public pension benefits (PNA) and interactions of these indicator variables with the quadratic in current age. In the United States, the age of eligibility for early and reduced public old age pension benefits is 62, whereas the age of eligibility for full benefits ranges between 65-67, depending on birth year.[9] In England, we follow the conventional wisdom that for all practical purposes, the age of eligibility for early old age public pension benefits is age 60 for both female and male workers and the standard age of eligibility is 65 for male workers.

We model the age structure of incentives arising through private pensions by defining private pension eligibility ages relative to the public eligibility ages. Specifically, we include indictor variables for if the worker has a defined contribution or defined benefit private or employer pension. For those with defined benefit plans, workers are grouped into mutually exclusive categories by whether the early and normal retirement ages (ERA and NRA, respectively) for the plan coincide with the eligibility ages for public pension benefits. For example, in the United States a worker with a defined benefit plan is categorized in one of 6 ways: early and normal retirement ages are less than age 62; early retirement age is less than age 62 and normal age is 62 to 64; early retirement age is less than age 62 and normal age is 65 or older; early retirement age is 62 to 64 and normal age is 62 to 64; early retirement age

is 62-64 and normal age is 65 or older; early retirement age and normal retirement age are both at 65 or older (four additional categories are generated for those with missing data on the ERA or NRA for a total of 10 mutually exclusive and exhaustive categories.) For male English workers with a defined benefit plan, these categories are less than age 60, 60 to 64 and 65 and older, and less than age 60 and 60 and older for female workers, corresponding to the age of public benefit receipt in England. Finally, these categorical indicators are interacted with an indicator of whether the worker is currently eligible for early public benefits (age 62 or age 60 for the United States and England respectively) and for standard public benefits (age 65 or 66 for U.S. workers and 65 for English males).

Another important benefit that becomes available at age 65 in the United States is health insurance coverage through the Medicare program. This eligibility may be particularly important for self-employed workers who may delay retirement until they have access to this benefit. Among wage and salary workers under the age of 65, 51 percent have employer provided health insurance, another 16 percent have employer provided insurance with retiree benefits until age 65, and 24 percent have insurance provided through a spouse's employer or some other source (including public sources) with no retiree benefits and 16 percent have none of the above. Among self-employed workers under the age of 65, fewer have these benefits: 29 percent have insurance through their work, only one percent also have retiree benefits, and 45 percent have insurance through another source including one's spouse and publicly provided sources and 28 percent have none of these sources.[10] In the model we include indicator variables for four types of insurance for workers under age 65: employer provided without retiree, employer provided with retiree benefits, benefits through a spouse and other insurance and the same indicators for workers age 65 and older who, in the U.S. are also eligible for Medicare benefits. To identify the effect of health insurance on retirement behavior, we assume that employment decisions in the United States are not made on the basis of whether or not an employer offers *retiree* health insurance.

Finally, we control for many other observable differences between workers in the U.S and England and between classes of worker (self-employed or wage and salary) that prior research has found and theory has indicated affect the likelihood of exiting the labor force:

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[9] The maximum full retirement age faced by respondents in our sample (b. 1932-1947) is 66 although no one in the cohort that is entitled to benefits at age 66 actually becomes 66 from 2002 to 2004.

[10] The percentages add to slightly more than 100 because the types are not mutually exclusive.

sex, marital status, self-reported health status, financial and housing wealth and total household income.   Wealth and income are entered as interacted quartiles, with the second and third quartiles combined, and the quartile definitions are country specific.

The Effect of Public Pensions and Public Health Insurance. The results of our full model are shown in Table 5. Owing to the large number of interaction terms, individual coefficients are difficult to interpret; therefore we illustrate our key results by showing how variation in pensions and health insurance arrangements affect the age profiles in retirement rates from the labor force.

Figure 4 shows the predicted percentage of workers from England and the United States exiting the labor force from ages 55 to 70 based on our model, letting the indicators for early and standard eligibility take on the value of one at the appropriate ages, and holding all other covariates at their mean values. Variation in eligibility for public pensions alone generates age profiles in predicted transition rates that capture several notable features of the data. Consistent with observed exit rates, the model predicts higher exit rates for wage and salary workers than for self-employed workers in both countries. We expect that in England, the self-employed would be less responsive to the entitlement ages of 60 and 65 than wage and salary workers because they are not eligible for 2nd tier public benefits and the replacement rate for 1st tier benefits is small. Recall that in both the 1st tier and the public portion of the 2nd tier, eligibility ages are 60 for women and 65 for men, but that age 60 is treated as a de facto early retirement age for men. Furthermore, wage and salary workers who opt out of second tier public provision often have employer provided DB plans with early and normal retirement ages at 60 and 65. The model predicts that the exit rate for wage and salary workers in England increases dramatically from 16.3 percent at age 55 to 30.5 percent at the early retirement age of 60. The slope is slightly flatter from the ages of 62 through 64 and then rates of exit increase sharply from 41.4 percent at age 64 to 60.4 percent at age 65, the standard age of retirement for public benefits for English males. In contrast, the predicted percentage of self-employed workers exiting the labor force in England is fairly constant from ages 55 to 59, increasing from 19.7 to just 20.4. The exit rate rises at age 60 to 23.5, and then increases more sharply from age 64 to 65 (34.8 percent to 48.8 percent). Indeed, likelihood ratio tests using reject the null-hypothesis that the coefficients on the standard age of eligibility are zero for wage and salary workers but cannot reject the null for

10

self-employed workers. The null is rejected for all workers with respect to the coefficients on eligibility for early benefits. Thus the age incentives built into the public system alone can explain the higher observed exit rates of wage and salary workers in England.

In the United States, self-employed and wage and salary workers are part of the same the old age pension system unlike in England where the self-employed are not part of the 2nd tier of the system. In the United States, however, for most respondents in our sample the standard eligibility age for pension benefits coincides with the age for public coverage of health insurance through Medicare. This may be a particularly important benefit for self-employed workers who do not have access to retiree health insurance benefits through an employer before the age of 65. In the model, we include an interaction with eligibility for age-65 benefits in 2004 and type (if any) of health insurance benefits in 2002. For example, workers without health insurance benefits will not have any particular incentive to wait until age 65 to retire relative to those with health insurance but no retiree benefits.

As seen in Figure 4, the predicted age-pattern of exits from the labor force is similar for both classes of workers although at all ages, wage and salary workers exit the labor force at higher rates than self-employed workers. The percentage of workers exiting the labor force rises slowly for wage and salary workers, from 13.1 percent at age 55 to 19.7 percent at age 61, and then jumps slightly at the age of early eligibility to 24.1. The percentage of self-employed workers exiting the labor force rises from 8.6 percent at age 55 to 18.9 percent at age 61 and increases only slightly at age 62 to 20.1. For both classes of workers the percentage increases substantially at age 65 from 19.6 (age 64) to 41.8 for wage and salary workers and from 16.4 at age 64 to 28.1 for self-employed workers. For the self-employed this appears to be an artifact of the model, however, as there is no sharp rise in the exit rates of the self-employed at age 65 in the observed data (see Figure 3). On the other hand, the sharp rise in exit rates at age 65 for wage and salary workers is consistent with the data, and may reflect both the eligibility for public full benefits as well as the presence of employment-based health insurance.

The Effect of Health Insurance Prior to Age 65. The effect of access to health insurance benefits either through a spouse or as retiree benefits for both types of workers in the United States increases the percentage of workers exiting the labor force at all ages. We test for the joint-significance of the pre-65 health insurance coefficients in Table 5 and find

11

they are jointly significant for self-employed workers but not wage and salary workers. Figure 5 shows the predicted exit rates if all U.S. workers had access to health insurance prior to age 65, with all other characteristics held at their mean and indicators for eligibility for standard and early public benefits taking the value of one at the appropriate age. Under this scenario, exit rates for U.S. workers younger than 65, both wage and salary and self-employed, would be higher, matching the exit rates for England.

The Effect of Private Personal and Employer Provided Pensions. Private pensions, particularly those that are defined benefit, are likely to influence the age at which a worker chooses to retire. As Figure 1 revealed, the normal retirement age for these plans more often than not, coincides with the ages of eligibility for public benefits thereby strengthening the incentive to retire at the key public benefit ages. In contrast, defined contribution plans are characterized by a lack of incentive to retire at particular ages. Approximately 64 percent of all wage and salary workers in the United States have a pension and among those with a pension, 62 percent have the defined benefit type. In England, 61 percent have a pension and among those with a pension, 49 percent have a defined benefit type of plan. In contrast, almost no self-employed workers have defined benefit pension plans through a current job. In England, however, 39 percent of all self-employed workers have a defined contribution plan while in the United States, only 12 percent of self-employed workers have a private pension plan. We use this variation between self-employed and wage and salary workers and workers in the United States and England to examine the extent to which eligibility for early and standard private pension benefits affects a worker's decision to exit the labor force in the United States and England.

For self-employed workers, having any type of private pension is negatively associated with exiting the labor force relative to having no pension. For wage workers, a DC pension is negatively associated with exits from the labor force while the effect of DB pensions depends on age of early and normal benefits and age of the worker. For wage and salary workers in England, the effect of having a pension is substantially larger than for wage workers in the United States. To assist in interpreting the level effect of private pensions exit rates in the United States and England and by class of worker we consider two types of pension arrangements and graph the predicted percentage of workers exiting the labor force under each scenario. In the first, all workers in both countries have only DC pensions

(Figure 6). In the second wage and salary workers in both countries have DB pension benefits with ages of eligibility for early and standard retirement benefits that correspond with the ages for benefits in the public system and for self-employed workers, retirement probabilities are held at the mean values (Figure 7). All other characteristics are held at their mean value and indicators for standard and early public benefits take the value of one at the appropriate age.

Under the scenario such that all workers in both countries have only DC pensions (Figure 6), in the United States, wage workers decrease their rate of exit from the labor market thereby narrowing the difference in exit rates between self-employed and wage and salary workers. In England, the self-employed exit at higher rates than wage and salary workers before the key public pension benefit age of 60 and thereafter, closely follow the rates of exit of the wage and salary workers. Under the scenario such that the pensions of self-employed workers are held at the mean value and wage and salary workers have DB private pension benefits with coordinated retirement ages, we find a very large effect on exits from the labor force at the early and standard retirement age (Figure 7).   This large increase in the percentage of wage and salary workers exiting the labor force at these key ages dramatically increases the difference in exit rates between the two classes of workers in both countries and closes the gap in exit rates of wage and salary workers in the United States and England at ages 62 and 65.

6. CONCLUSIONS

Retirement rates are higher in the United Kingdom than in the United States, and also higher among wage and salary workers than among the self-employed in both countries. One plausible explanation for these differences is the varying institutional arrangements in the United States and United Kingdom that differentially impact workers of different employment classes. Indeed, our results support the hypothesis that the higher exit rates of wage and salary workers in England and the United States are due to retirement incentives occurring at key retirement ages in the public systems. In the United States, health insurance coverage is also important for understanding differences in the probability a self-employed worker and a wage and salary worker exit the labor force. We find that having access to health insurance through a spouse or having retiree benefits, which few self-employed workers have, increases the probability of exiting the labor force and if applied to self-employed workers, their rates of exit would be at or above those of wage and salary workers.

13

In addition, being eligible for a private, defined benefit pension plan, almost exclusively a characteristic of wage and salary workers in both countries, serves to exacerbate the inter-country difference in exit rates. These findings underscore the importance of labor market institutions in influencing individual decision of when to retire. They also suggest that in the United States, the availability of Medicare at age 65 limits the proportion of workers willing to work past 65 but that the movement of employers away from defined benefit pension plans is likely to encourage work at older ages.

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Table 1—Rates of Self-Employment among Older Workers by Age in 12 Countries
(percentage)

Country	Age group			
	50 to 55	56 to 59	60 to 64	65 and above
Austria	16.1	19.9	35.1	50.4
Denmark	8.0	11.8	17.9	25.9
England	16.4	16.6	20.0	39.9
France	12.4	10.8	22.2	47.3
Germany	14.3	14.7	19.9	38.1
Greece	36.1	40.2	50.1	61.6
Italy	29.6	36.4	58.0	71.5
Netherlands	12.5	11.7	30.2	43.7
Spain	26.3	33.1	28.5	68.0
Sweden	13.3	11.5	14.5	36.2
Switzerland	17.8	24.4	33.0	59.1
United States	18.6	18.5	22.8	36.5

NOTE: Response rates differ across the SHARE countries. The rate is especially low in Switzerland (38 percent) so the figures for that country should be interpreted with caution. Percentages have been calculated using HRS, ELSA, and SHARE sampling weights.

SOURCE: Authors' calculations using HRS 2002 and wave 1 of ELSA and SHARE.

Table 2—Rates of Self-Employment and Distribution by Self-Employment Category in the HRS and ELSA
(percent distribution)

	All workers		Self-employed			
			By age of self-employment		By presence of employees	
County and subgroup	Wage and salary	Self-employed	Before age 50	At or after age 50	Without employees	With employees
United States	78.1	21.9	67.8	32.2	38.9	61.1
Males	73.4	26.6	69.8	30.2	18.1	81.9
Females	83.2	16.8	64.1	35.9	48.6	51.4
England	80.3	19.7	56.9	43.1	80.2	19.8
Males	75.4	24.6	60.0	40.0	78.9	21.1
Females	86.7	13.3	49.7	50.3	83.1	16.9

NOTE: Sample is individuals age 55 to 70. Sample size for HRS is 4,491 and for ELSA is 2,349. Percentages have been calculated using HRS and ELSA sampling weights. Missing observations for U.S as follows: 3 workers unclassified by class; 13 self-employed workers not classified by age; 27 self-employed workers not classified by presence of employees. Missing observations for England as follows: 27 workers unclassified by class; 8 self-employed workers not classified by age; 50 self-employed workers not classified by presence of employees. The percentage of self-employed workers in England with employees among the non-missing observations is approximately 14% lower than as reported in the U.K. census for England and Wales. Respondents in the unclassified group are likely to have employees because their income and wealth are on average similar to those self-employed with employees.

SOURCE: Authors' calculations using the 2002 waves of HRS and ELSA.

Table 3—Worker Characteristics by Employment Class and Self-Employment Category in the HRS and ELSA

(percent distribution)

	United States		England	
	Wage and salary	Self-employed	Wage and salary	Self-employed
Male	49.5	63.8	52.7	70.3
Age group				
55 to 59	54.6	43.4	62.6	51.0
60 to 61	16.3	14.5	14.0	12.5
62 to 64	13.9	17.2	14.5	16.6
65 to 70	15.3	25.0	8.9	20.0
Married	70.5	74.7	77.0	74.1
Foreign born	8.3	8.9	6.5	6.2
Health status				
Excellent	17.1	25.3	9.0	10.9
Very good	38.0	34.7	34.3	36.7
Good	31.8	29.0	39.5	37.4
Fair	11.3	9.6	15.2	13.3
Poor	1.8	1.4	2.0	1.7
Works part time	17.1	32.1	35.1	35.2
Income				
Quartile 1 (low)	6.7	10.6	7.0	12.7
Quartile 2	15.8	11.8	15.1	17.5
Quartile 3	30.5	21.0	33.0	27.3
Quartile 4 (high)	47.0	56.7	44.9	42.6
Wealth				
Quartile 1 (low)	20.0	11.5	15.8	8.7
Quartile 2	28.4	13.4	26.6	16.8
Quartile 3	27.9	25.8	29.1	25.8
Quartile 4 (high)	23.7	49.3	28.5	48.7
Sample size (N)	3,480	1,006	1,906	466

NOTE: Sample is individuals age 55 to 70. Percentages have been calculated using HRS and ELSA sampling weights.

SOURCE: Authors' calculations using the 2002 waves of HRS and ELSA.

Table 4—Pension Coverage by Employment Class and Self-Employment Category in the HRS and ELSA

(percent distribution)

Pension measure	United States			England		
	By employment class			By employment class		
	Wage and salary	Self-employed	All workers	Wage and salary	Self-employed	All workers
Has pension on current job	63.5	11.9	52.1	60.8	39.2	56.4
Pension type given that have a pension						
Defined contribution	42.6	63.7	43.7	44.9	95.8	51.8
Defined benefit	35.3	13.6	34.2	44.2	2.5	38.4
Both	19.0	9.1	18.5	4.0	1.0	3.5
Don't know	3.1	13.6	3.7	7.0	1.0	6.3
Sample size (N)	3,446	996	4,442	1,897	464	2,361

NOTE: Sample is individuals age 55 to 70. Percentages have been calculated using HRS and ELSA sampling weights. In the HRS (ELSA), 34 (9) wage workers and 10 (2) self-employed workers having values for pension ownership.

SOURCE: Authors' calculations using the 2002 waves of HRS and ELSA.

Table 5—Regression Results for Transition to Retirement in the HRS and ELSA,
Fully Interacted Model by Employment Class and Country

| | United States | | | | England | | | |
| | Self-employed | | Wage | | Self-employed | | Wage | |
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
Class of worker & country intercept	17.247	11.261	5.014	4.816	2.938	16.312	10.046	7.109
Demographics, health, wealth, pension:								
Male	-0.028	0.025	-0.002	0.013	-0.049	0.038	-0.033	0.018
Married	0.011	0.029	0.003	0.016	0.049	0.037	0.014	0.018
Health excellent	-0.025	0.025	-0.029	0.014	-0.050	0.033	-0.050	0.016
Health fair/poor	0.064	0.036	0.046	0.020	0.096	0.048	0.092	0.021
Wealth Q1, Income Q1	0.207	0.061	0.043	0.033	0.042	0.092	0.083	0.041
Wealth Q1, Income Q2Q3	0.091	0.053	-0.027	0.020	0.007	0.074	-0.036	0.027
Wealth Q1, Income Q4	0.121	0.082	-0.100	0.040			-0.046	0.044
Wealth Q2Q3, Income Q1	0.081	0.054	-0.020	0.037	0.067	0.068	0.104	0.041
Wealth Q2Q3, Income Q4	-0.068	0.037	-0.027	0.018	-0.028	0.050	-0.011	0.021
Wealth Q4, Income Q1	-0.115	0.092	0.232	0.132	0.053	0.079	0.036	0.066
Wealth Q4, Income Q2Q3	-0.029	0.042	0.035	0.030	-0.097	0.050	0.026	0.032
Wealth Q4, Income Q4	-0.066	0.031	-0.040	0.020	-0.008	0.043	-0.006	0.022
Pension DC	-0.070	0.050	-0.052	0.017	-0.116	0.035	-0.127	0.020
Retirement ages and interactions:								
ERA or NRA at PEA or PNA	-0.011	0.120						
ERA & NRA < PEA	-0.119	0.060						
P1. ERA & NRA < PEA			0.080	0.033			-0.007	0.132
P2. ERA < PEA, NRA at PEA & < PNA			-0.111	0.062			-0.043	0.034
P3. ERA < PEA, NRA ≥ PNA			0.015	0.056			-0.056	0.054
P4. ERA and NRA at PEA & < PNA,			-0.008	0.078			-0.143	0.062
P5. ERA at PEA & < PNA, NRA ≥ PNA			0.103	0.094			-0.075	0.075
P6. ERA and NRA ≥ PNA			0.046	0.091				
P7. Missing ERA, NRA < PEA			0.019	0.075			-0.096	0.094
P8. Missing ERA, NRA at PEA & < PNA			-0.049	0.125			-0.122	0.031
P9. Missing ERA, NRA ≥ PNA			-0.090	0.103			-0.141	0.052
P10. Missing ERA & NRA			-0.054	0.034			-0.071	0.040
P1*PEA			0.040	0.072				
P2*PEA			0.190	0.106			-0.067	0.079
P3*PEA			0.010	0.111			0.006	0.105
P4*PEA			0.287	0.080			0.215	0.108
P5*PEA			0.013	0.106			-0.043	0.126
P6*PEA			-0.037	0.098				
P7*PEA			0.052	0.167				
P8*PEA			0.014	0.204			0.234	0.060
P9*PEA			0.053	0.204			0.002	0.094
P10*PEA			0.058	0.058			0.075	0.080

**Table 5—Regression Results for Transition to Retirement in the HRS and ELSA,
Fully Interacted Model by Employment Class and Country, Continued**

| | United States | | | | England | | | |
| | Self-employed | | Wage | | Self-employed | | Wage | |
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
P1*PNA			-0.140	0.074				
P2*PNA			0.378	0.145				
P3*PNA			0.014	0.137			0.012	0.187
P4*PNA			0.328	0.086				
P5*PNA			0.229	0.135			-0.055	0.213
P6*PNA			0.131	0.092				
P7*PNA			0.120	0.166				
P8*PNA			0.290	0.305				
P9*PNA			0.083	0.157			0.189	0.124
P10*PNA			0.018	0.051			0.272	0.147
Age and age interactions:								
Age	-0.609	0.393	-0.178	0.169	-0.098	0.587	-0.369	0.256
Age squared	0.005	0.003	0.002	0.001	0.001	0.005	0.003	0.002
Age at PEA and < PNA	-80.280	212.786	28.615	111.079	-7.660	16.744	-13.593	7.227
PEA*age	2.634	6.757	-0.860	3.528	0.231	0.597	0.466	0.259
PEA*age squared	-0.022	0.054	0.006	0.028	-0.002	0.005	-0.004	0.002
Age ≥ PNA	-17.885	11.430	-2.985	5.235	3.979	17.331	-2.567	8.586
PNA*age	0.623	0.397	0.129	0.178	-0.085	0.608	0.165	0.289
PNA*age squared	-0.005	0.003	-0.001	0.002	0.000	0.005	-0.002	0.002
Health insurance and RHB:								
Employer HI no RHB and age<65	-0.002	0.048	0.001	0.025				
Spousal HI and age<65	0.078	0.050	0.035	0.027				
Other HI and age<65	0.087	0.048	0.059	0.029				
Employer HI with RHB and age<65			0.011	0.030				
Employer HI without RHB and age 65+	-0.012	0.035	-0.023	0.023				
Spousal HI and age 65+	0.059	0.049	-0.007	0.036				
Other HI and age 65+	0.070	0.046	-0.006	0.031				
Employer HI with RHB and age 65+			0.088	0.049				

NOTES: Columns do not represent separate equations, but rather coefficients refer to the covariate in each row interacted with a variable for the country and class indicated in the column heading. Results based on fully interacted model. Sample size is 8,989. Model R-squared is 0.315. Indicates coefficient is statistically significant at the ***1 percent, **5 percent, and *10 percent level. PEA=Public early eligibility age, PNA=Public normal (standard) eligibility age.

SOURCE: Authors' calculations using the 2002 and 2004 waves of HRS and ELSA.

Figure 1—Pension Plan NRA for Wage Workers in the HRS and ELSA

NOTE: Sample is individuals age 55 to 70. Percentages have been calculated using HRS and ELSA sampling weights. DK=don't know.

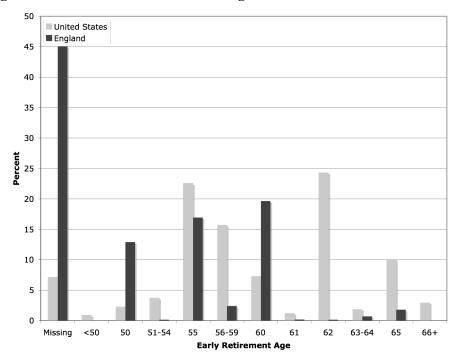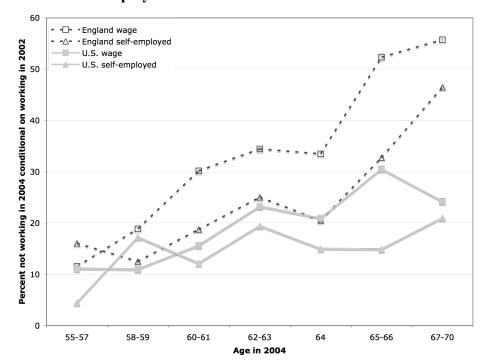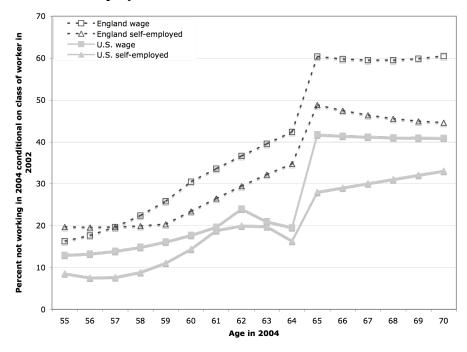SOURCE: Authors' calculations using the 2002 waves of HRS and ELSA.

Figure 2—Pension Plan ERA for Wage Workers in the HRS and ELSA

NOTE: Sample is individuals age 55 to 70. DK=don't know.   Percentages have been calculated using HRS and ELSA sampling weights.

SOURCE: Authors' calculations using the 2002 waves of HRS and ELSA.

Figure 3—Observed Percentage Transitioning to Retirement Between Waves by Employment Class in the HRS and ELSA

NOTE: Results are plotted for individuals age 55 to 70 in 2002. Percentages have been calculated using HRS and ELSA sampling weights.
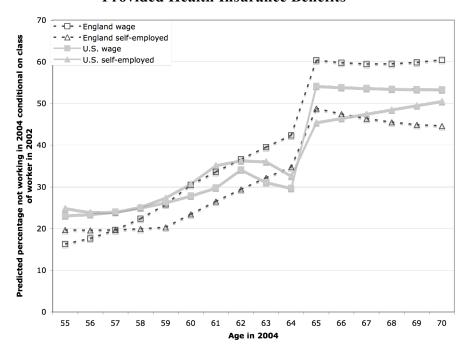
SOURCE: Authors' calculations using the 2002 and 2004 waves of HRS and ELSA.

Figure 4—Predicted Percentage Transitioning to Retirement Between Waves by Employment Class in the HRS and ELSA
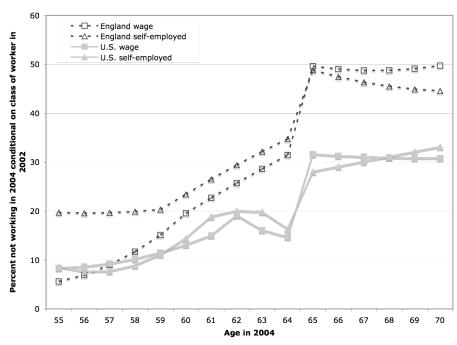

NOTE: Predicted probabilities based on regression results reported in Table 5.

SOURCE: Authors' calculations using the 2002 and 2004 waves of HRS and ELSA.

Figure 5—Predicted Percentage Transitioning to Retirement Between Waves by Employment Class in the HRS and ELSA: Assuming All Have Access to Non-employer Provided Health Insurance Benefits
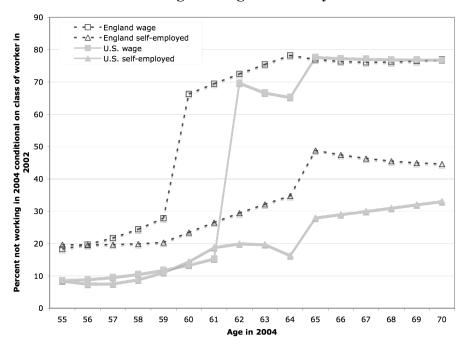

NOTE: Predicted probabilities based on regression results reported in Table 5.
SOURCE: Authors' calculations using the 2002 and 2004 waves of HRS and ELSA.

Figure 6—Predicted Percentage Transitioning to Retirement Between Waves by Employment Class in the HRS and ELSA: Assuming All Workers Have DC Pensions

NOTE: Predicted probabilities based on regression results reported in Table 5.
SOURCE: Authors' calculations using the 2002 and 2004 waves of HRS and ELSA.

22

Figure 7—Predicted Percentage Transitioning to Retirement Between Waves by Employment Class in the HRS and ELSA: Assuming All Wage and Salary Workers Have DB Pensions

NOTE: Predicted probabilities based on regression results reported in Table 5.
SOURCE: Authors' calculations using the 2002 and 2004 waves of HRS and ELSA