
The Institute for Behavioral and Household Finance



White Paper Series

*Household Retirement Behavior in the United States and the United Kingdom: A Cross Country Analysis**

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White Paper No. 2-2015

May 2015

The Institute for Behavioral and Household Finance

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*This work was supervised by Dr. Vicki Bogan and was completed in partial fulfillment of the requirements for the Degree of Master of Professional Studies at Cornell University.

Overview

As the baby boomers approach retirement, financing retirement is becoming an increasingly critical issue for a significant segment of the population. One key aspect of retirement planning is the determination of retirement timing. Retiring earlier is desirable because it increases leisure time. Retiring later can allow one to be more financially comfortable in retirement, as one would have more time to save and less time to spend. To make a wise decision, people need to take many factors into account.

There is a rich literature analyzing factors, which influence retirement behavior. Diamond and Hausman (1984) find that higher pensions and social security lead to decreased savings, but the elasticities are not high enough to support dollar-for-dollar trade-offs. Scholz, Seshadri and Khitatrakun (2004) examine the degree to which Americans are saving optimally for retirement and conclude that Americans are preparing well for retirement. Banks, Blundell, and Tanner (1998) model income and expenditure patterns and show there is a fall in consumption around the time of retirement due to the systematic arrival of unexpected adverse information. Using real world data, Blau (2008) finds that modeled drops in consumption during retirement are too small compared to the real data.

Besides saving and consumption, there are other key determinants of retirement behavior. Friedberg and Webb (2005) examine the impact

of pensions on retirement, and find that workers with defined benefit plans retire almost two years earlier, on average, compared to workers with defined contribution plans. Hanel and Riphahn (2009) investigate the responsiveness of individual retirement decisions to changes in financial incentives and find that people with low education respond most strongly to an increase in the price of leisure. Gruber and Wise (2002) study the relationship between social security systems and retirement decisions and show that social security retirement incentives have very large effects on employees in all countries. Heijdra and Romp (2009) use simulations of changes in the pension system to show that pension reform must be drastic to have any effects on the retirement behavior of workers.

Age, health status, income, and economic conditions all have been shown to impact retirement timing. Using labor market data from the Organization for Economic Co-operation and Development (OECD) countries, Blöndal and Scarpetta (1999) examine the main determinants of the decision to retire and the role of social security systems in driving down the labor force participation rate of older people. They show that pension systems in OECD countries in the mid-1990s made it financially unattractive to work after the age of 55. Montalto, Yuh and Hanna (2000) use models to analyze the determinants of planned retirement ages and find that planned retirement age increases

substantially as people get older, and increases with higher non-investment income. In the context of the post financial crisis, Bosworth and Burtless (2010) find that the recession affected the timing of retirement through two channels: a weaker job market and losses in household wealth. Oksanen and Virtanen (2012) find that health is central to the timing of retirement.

Burtless (2008) investigates trends in retirement behavior in 21 rich countries.¹ The results suggest that exit rates from paid work declined among older citizens starting in the 1990s. Ekerdt (2009) analyzes cross-national patterns of retirement and finds a general late 20th century trend toward earlier retirement with a more recent reversal of that trend, chiefly due to government efforts to discourage early exit. Tang, Choi, and Goode (2012) review changes in labor force participation and withdrawal in the U.S. and find that an increasing number of older adults remain in the paid labor force passed the traditional retirement age. Yet, there is evidence that the labor force withdrawal or retirement exits increase dramatically at the Social Security eligibility ages of 62 and 65. Chomik and Whitehouse (2010) analyze pensionable ages in OECD countries and show the average pensionable age in OECD countries dropped by nearly two years during the second half of the

20th century despite the fact that life expectancy after the normal pension age is projected to reach 20.3 and 24.6 years (for men and women respectively) by 2050.

Banks and Smith (2006) study the retirement situation in the U.K. and find that for the top of the wealth distribution, early retirement has typically been influenced by private, occupational pensions. At the bottom of the wealth distribution individuals are more likely not to be working in their 50s, but do not typically define themselves as retired. Using data from the English Longitudinal Study of Ageing, Smith (2007) presents estimates of the impact of wealth and accrual incentives in defined contribution schemes on retirement. The results suggest that defined contribution pension wealth does not affect retirement in the same way as defined benefit pension wealth. However, defined contribution accrual does appear to be meaningful for retirement decisions. Laun and Wallenius (2013) study the role of social insurance in accounting for the differing labor supply patterns of older individuals across OECD countries and find the incentives for older workers differ hugely across countries. Burtless, Whitehouse, and Toft (2012) study how the different policies in the U.S. and European Union (EU15) countries have impacted the labor supply and labor participation of older people. In the 1950s, the labor market participation of older people was similar on both continents. However since the

¹ Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom and United States.

1970s, a substantial gap developed between the EU15 as a whole and the U.S. They argue that the substantial gap between the rates can largely be explained by differences in retirement age policy.

To better understand the connections between retirement timing and various influences, this paper analyzes recent trends in average retirement age and factors that could affect the retirement timing decision. We investigate data from both the United States and the United Kingdom. As a first step, we review the current retirement systems in each country.

The U.S. Retirement System

The official U.S. Social Security website claims that 96 percent of American workers are covered under Social Security.² When a person works and pays Social Security taxes, (s)he may earn “credits” which lead to qualification for Social Security benefits. Those who were born in 1929 or later need 40 credits (10 years of work) in order to be eligible for benefits. The amount of retirement benefit received is based upon how much is earned in one’s career and the age of retirement. The ages to start receiving full Social Security benefits range from 66 to 67, depending on the year in which the retiree was born. Early retirement will result in a reduction of benefits. To provide a general idea of the level of benefits, a person who was born in 1950 and has

current annual earnings of \$40,000 would receive \$1,175 monthly for the rest of his or her life.³

In addition to the government pension system, there are two main types of private retirement savings vehicles: personal plans and employer-sponsored plans. There are several types of personal retirement plans called Individual Retirement Accounts (IRAs). The most common type of IRA is the Traditional IRA. Anyone who has taxable compensation during the year and will not reach age 70.5 by the end of the year may establish and contribute to a Traditional IRA. Annual contributions to a Traditional IRA are limited. The contributions may be tax deductible when the IRA owner’s income falls below certain limits or if the owner does not have access to an employer-sponsored pension plan. The owner defers paying taxes on the earnings in the account until retirement, when he or she most likely will be in a lower tax bracket. The Roth IRA has the same contribution limits as those for a Traditional IRA, but the Roth IRA contributions are not tax deductible. With Roth IRAs, the assets grow on a tax-free basis. Simplified Employee Pension (SEP) IRAs,⁴ Savings Incentive Match Plan for Employees (SIMPLE) IRAs,⁵ Salary Reduction Simplified

³<http://www.socialsecurity.gov/OACT/quickcalc/index.html>

⁴A retirement plan that employers or self-employed individuals may establish. Tax deduction is allowed for contributions made by the employer to the plan.

⁵A retirement plan that allows employees and employers to make contribution to traditional IRAs set up for employees.

²<http://www.ssa.gov/pubs/EN-05-10035.pdf>

Employee Pension Plans (SARSEP)⁶ and Payroll Deduction IRAs⁷ are also commonly used types of IRAs.

Employer-sponsored plans are offered by employers to their employees at no or a relatively low cost. A widely adopted type of employer-sponsored plan is a qualified plan, which could be either a defined-benefit plan or a defined-contribution plan. In defined-benefit plans, employee benefits are calculated based upon factors such as salary history and duration of employment. Benefits upon retirement are known to the employees. In recent years, many companies have shifted away from defined-benefit plans in favor of defined-contribution plans, which include 401(k) plans. With defined-contribution plans, the employers' responsibility is to contribute a certain amount of money to the account every year. The eventual benefits to each employee are uncertain, as benefits are determined by the investment earnings of the account.

The U.K. Retirement System

Similar to the U.S., there are three major types of pensions in the U.K.: state pensions, occupational pensions and personal pensions. Although they have different names, these

categories are very similar to their American counterparts.

Under the U.K. Pension Act of 2014, which will affect people reaching state pension age on or after April 6, 2016, a new single-tier, flat-rate state pension was introduced to replace the previous pension system. A person's new state pension is based on his or her national insurance record when the person reaches state pension age. Ten qualifying years are generally required for one to get a new state pension. If self-employed or employed and earning over £153 a week from an employer, a person may get credit for a qualifying year as long as (s)he is paying national insurance in that year. Those who earn between £111 and £153 a week from an employer and those who cannot work - e.g. because of illness, disability, being a care-taker (a person who is looking after one or more people for at least 20 hours a week), or being unemployed may still gain a qualifying year without paying national insurance. Although the actual formula remains to be set, it is assured that the full new state pension will be no less than £148.40 per week. The earliest age a person can claim a state pension is currently 65 for men and 62 for women. However, the age for women is going to rise gradually to become 65 by 2018, equalizing the state pension age across genders. Subsequently, the state pension age for both men and women is set to increase to age 67. The whole process is expected to be concluded in 2028.

⁶A SEP plan that permits employee salary reduction contributions.

⁷An IRA that is allows the employees to establish it with a financial institution and authorize a payroll deduction amount for it.

The occupational pensions in the U.K. are also categorized as defined-benefit plans or defined-contribution plans. The common arrangement for defined-benefit plans is that the employer offers a fixed proportion of the final salary of the employee. The proportion itself is based on the duration of employment under that employer. Since the 1990s, the occupational pension system in the U.K. has also undergone a shift towards defined-contribution plans due to changes in pension regulation and accounting.

Individuals also may establish personal pension accounts with other institutions (such as insurance companies). These accounts enjoy tax advantages similar to occupational pensions. The amount of contributions is also limited. Generally, withdrawals can be made at any time after age 55, or even earlier in case of illness. There are two types of personal pension schemes: insured personal pensions and self-invested personal pensions (SIPPs). Insured personal pension schemes allow the account owner to have a set range of investment fund options from which to choose. The SIPP allows the owners to make their own choices over which assets should be bought, kept, or sold. Individuals can even borrow up to 50 percent of the net value of their pension to make investments.

Retirement Timing

Trends

Using 1991-2012 data from the U.S. and the U.K. we analyzed recent trends in retirement behavior. The retirement age and health status data are from the OECD Statistics.⁸ The U.S. and U.K. Consumer Price Indexes (CPIs) are from the World Bank.⁹ Unemployment rate data are from the U.S. Labor market statistics and the U.K. Office for national statistics.¹⁰ Other U.K. specific data are from U.K. national statistics.

Consistent with the OECD data, we define a country's average effective age of retirement as a weighted average of (net) withdrawals from the labor market at different ages over a 5-year period for workers initially aged 40 and over.¹¹ Figure 1 shows the average retirement age of men in the U.S. from 1991 to 2012 is quite stable with a range from 64.1 years of age to 65.0 years of age. For women, Figure 1 shows a similarly stable trend. Although average retirement ages of both men and women start to rise in 2002, the U.S. women's average retirement age exhibits a sharper rise in 2006.

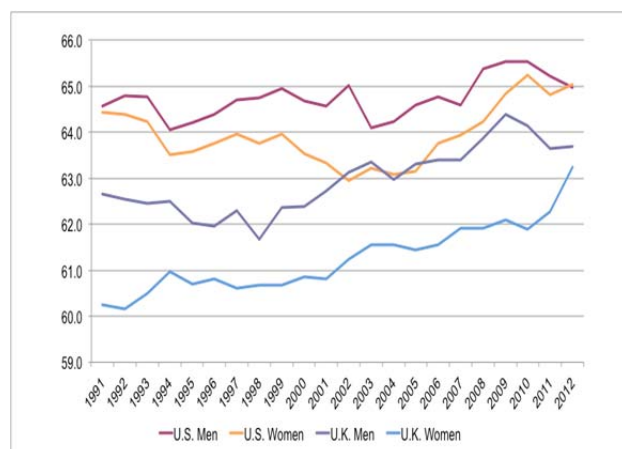
⁸<http://stats.oecd.org>

⁹<http://data.worldbank.org/indicator/FP.CPI.TOTL.ZG>

¹⁰US Labor market statistics; UK Office for national statistics

¹¹<http://www.oecd.org/pensions/public-pensions/ageingandemploymentpolicies-statisticsonaverageeffectiveageofretirement.htm>

Figure 1: Average Effective Age of Retirement Trends (1991-2012)¹²

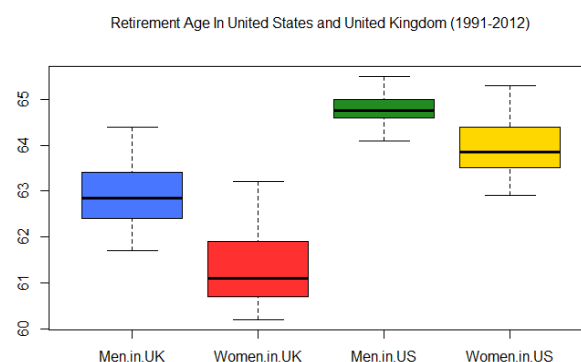


In Figure 1, the U.K. women and men average retirement age data shows a steady increase for the U.K. women retirement age with the lowest age being 60 years old in 1992. The U.K. men's average retirement age changes from 62.7 to 63.7 by 2012. We also observe that while the retirement ages for men and women are rising in the early 21st Century, the average retirement age for U.K. women has a sharp increase after 2010, while the average men's retirement ages in the two countries fell slightly, after 2009.

A box plot of U.S. and U.K. average effective retirement ages (Figure 2) shows U.K. women retire the earliest followed by U.K. men then U.S. women, with U.S. men having the oldest average effective retirement age. Generally speaking, the U.S. has an older average retirement age than the U.K., regardless of gender. Also, the U.K. average retirement age

has a larger dispersion than the average retirement age in the U.S.

Figure 2: Box plot of U.S. and U.K. Average Effective Age of Retirement (1991-2012)



The summary statistics in Table 1 show that U.K. men and women seem to have greater divergence in retirement ages than U.S. men and women, with the interquartile range spanning across a wider range of ages. The divergence is especially significant for women in the U.K. from 1991 to 2012. The difference between the men's and women's retirement ages seems to be due to the country specific retirement policies discussed previously. In the U.K., the earliest age one can claim a state pension is currently 65 for men and 62 for women.

In addition to government guidelines and policies, retirement timing is a personal decision that is influenced by individual differences and preferences. While many factors can influence retirement timing, we focus on three factors that

¹²Data Source: OECD website, Ageing and Employment Policies - Statistics on average effective age of retirement

Table 1: Summary Statistics - Average Effective Age of Retirement (1991-2012)

Men in UK		Women in UK		Men in US		Women in US	
Min.	61.70	Min.	60.20	Min.	64.10	Min.	62.90
1st Qu.	62.42	1st Qu.	60.70	1st Qu.	64.60	1st Qu.	63.50
Median	62.85	Median	61.10	Median	64.75	Median	63.85
Mean	62.95	Mean	61.26	Mean	64.75	Mean	63.94
3rd Qu.	63.40	3rd Qu.	61.83	3rd Qu.	65.00	3rd Qu.	64.35
Max.	64.40	Max.	63.20	Max.	65.50	Max.	65.30

have been prominent in recent policy debates: individual health status (Oksanen and Virtanen, 2012); the business cycle measured by CPI (Bosworth and Burtless, 2010) and the unemployment rate (Bosworth and Burtless, 2010).

Health and Retirement Timing

Since health status is a key factor that can affect retirement age, we look at differences in health status between the U.S. and U.K. populations. From the OECD statistics, we use the percentage of people aged 65+ that have a self-reported health status of good or very good. Comparing the two countries by gender, we can see there exists a significant difference (Figure 3). The percentage of healthy people in the U.K. population age 65+ is at least 10 percent less than in the U.S. After 2011, the gap between the two countries increased, due to a drop in the percentage of healthy U.K. people age 65+.

Column 1 of Table 2 shows the retirement age correlations with health status. The correlation between retirement age and health is higher in the U.S. than in the U.K. Further, within each country, men have a stronger correlation than women. The largest health status correlation coefficient is 0.5794, which describes the U.S. men's retirement age and health status relationship. Additionally, the coefficients for the U.K. are only slightly above zero. Thus, there is limited evidence of a strong linear relationship between retirement age and health status.

Figure 3: Percentage of Good/Very Good Health Status in Population Aged 65+¹³

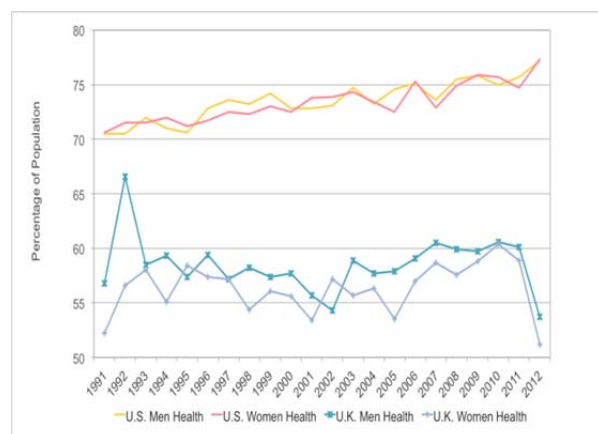


Table 2: Average Effective Age of Retirement Correlations with Health Status, CPI, and Unemployment rate (1991-2012)

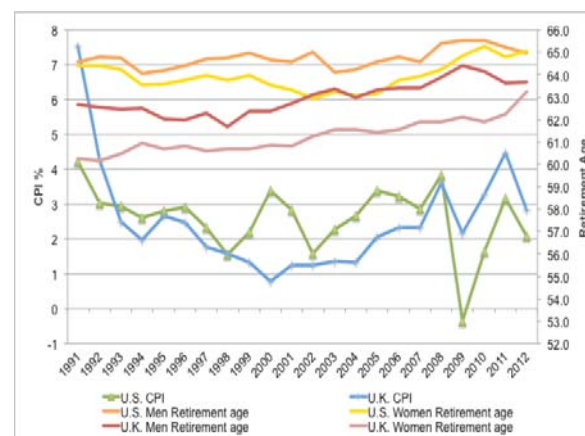
	Health	CPI	Unemp. Rate
U.S. Men	0.5794	-0.3619	0.5383
U.S. Women	0.3994	-0.1945	0.7641
U.K. Men	0.0846	0.1544	-0.1910
U.K. Women	0.0670	-0.0544	-0.2452

Business Cycle and Retirement Timing

Since macroeconomic conditions might also influence personal wealth and further influence retirement saving and consumption behaviors, we analyze trends in retirement age and the business cycle. In Figure 4, we use the CPI as our macroeconomic indicator of the business cycle and compare the CPI data with our retirement age data. Figure 4 shows generally a negative relationship. From 1991 to 2012, the

CPI showed a decline, while the average retirement age gradually increased.

Figure 4: Inflation - Measured by Consumer Price Index (annual %) (1991-2012)¹⁴



Retirement age generally is thought to exhibit a negative relationship with the CPI. When CPI is high, people will retire early. This relationship makes sense since a high CPI usually indicates an economic boom and people will gain more nominal wealth growth during these periods. Regardless of the effective wealth growth rate, people will feel financially prepared for post-retirement life due to money illusion. Column 2 of Table 2 shows a weak negative correlation between the CPI and average retirement age. All of the correlation coefficients are smaller than 0.5 in absolute value.

Unemployment and Retirement Timing

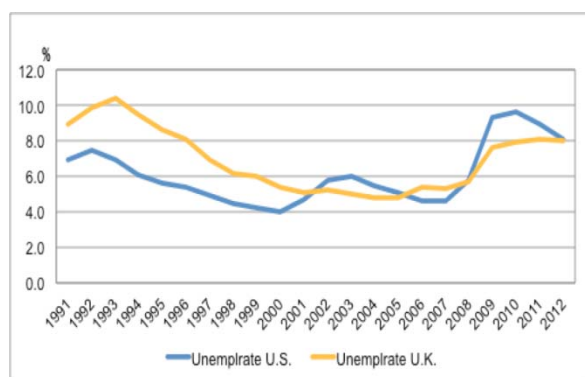
Next, we investigate the relationship between the unemployment rate and retirement age. In

¹³Data Source: OECD StatExtracts

¹⁴Source: World Bank

Figure 5, we can see similar trends in the change of the U.S. and U.K. unemployment rates. From 2010, the unemployment rate in the U.S. had a sharp fall, which is similar to the retirement age data of the U.S.

Figure 5: Unemployment Rate (annual %) (1991-2012)¹⁵



From column 3 of Table 2, we notice that the unemployment rate change is strongly positively correlated with the change in the U.S. retirement age, with correlation coefficients of 0.5383 and 0.7641 (for men and women respectively). When U.S. unemployment rates are high, U.S. people tend to retire later. In contrast, there is a negative relationship between the unemployment rate and the retirement age in the U.K..

Conclusion

Though the retirement systems in the U.S. and the U.K. are different in some aspects, there are many similarities. Both countries have three

major types of pensions: social and state pensions, employer-based pensions, and personal pension accounts. The qualification standards for these types of pensions in the U.S. and the U.K. are also similar. Given the similar systems and economies, one may hypothesize that the average retirement ages should be close to each other, but there is a considerable gap between the retirement ages in the U.S. and the U.K.

We analyze specific factors that are known to affect the retirement age, namely health status, the CPI, and the unemployment rate. In the U.S., a higher unemployment rate is accompanied by a higher average retirement age. However, within the U.K. data, the correlation coefficients are all quite small. Further, in the U.K., the unemployment rate has a negative relationship with average retirement age. The general health status of the population is also related to retirement timing in the U.S. When a larger portion of the population is in good health, there is a higher average retirement age.

In general, people in the U.K. seem to retire earlier than people in the U.S. Given our correlation results show weaker relationships than have been previously reported, we believe the identified differences between the two countries and between genders within each country are largely due to policy differences. In the U.S., the ages to start receiving full Social Security benefits range from 66 to 67. In the

¹⁵Data Source: US Labor market statistics; UK Office for national statistics

U.K., the age a person can claim a state pension is currently 65 for men and 62 for women. Given the crucial influence of retirement policies on average retirement age, it is important that policy makers clearly understand the relative strength of the relationship between retirement policies and retirement behaviors.

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