

How Well Have Retirement Systems Adapted to Longer Life?

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Introduction

Many formal retirement programs started with retirement ages around 65. As the programs progressed, people had access to social insurance systems and retirement plans, and retirement ages gradually dropped. Many people were retiring in their late 50s or early 60s. In recent years, however, labor force participation at higher ages has increased, and work is being accepted as part of retirement, and, in the past 100 years, the United States and other nations have experienced major increases in life spans. Some social insurance systems have gradually increased their retirement ages, but far less than the increase in life spans. In the United States, Social Security normal retirement ages have been increased to 67, and the limits on earning and collecting benefits after normal retirement ages were repealed more than a decade ago.

Retirement systems have not been adequately adjusted to changing life spans, leading to the perception of huge systemic longevity risk, including unsustainable defined benefit (DB) retirement plans and other social insurance systems. If retirement ages indexed to changes in population mortality were incorporated into DB retirement plans, longevity risk would be shared much more with participants but could still be pooled. The solution adopted by many plan sponsors has been to freeze or terminate their DB plans and shift all risk to participants.

If retirement ages are indexed in DB plans, it could lead to later retirement. Without increases in actual retirement age, increases in normal retirement age requirements are a reduction in monthly benefits paid at time of retirement. Without indexing of retirement ages, the value of monthly pension benefits starting at a fixed age increases as life spans increase. With indexing, their value would be much closer to remaining the same as life spans increase.

However, this will depend on there being adequate opportunities for older workers. In the United States, nearly half of retirees have retired earlier than planned, often due to job loss or health problems. Of those who retired voluntarily, a number retired because of difficulties with work rather than because of wanting to be retired (Society of Actuaries 2013).

History of Retirement

A number of factors have influenced the history of retirement, including longer life spans, the shift from an agricultural to an industrial society and the development of systems to provide economic support during retirement. Costa (1998) provides us with a history of retirement in the United States from 1880 to 1990, focusing primarily on men. Some highlights from the history follow.

- The prevalence of retirement among men 65 and older rose rapidly from about 25 percent at the beginning of the 20th century to over 80 percent at the end of the 20th century.
- In earlier periods, many more retirees were dependent on children and family and the community. Retirement usually did not occur until people were no longer able to work.
- The nature of retirement changed from a time of withdrawal from all activities to a period of discovery, personal fulfillment and relative independence.

- Retirement shifted from an opportunity available only to the relatively wealthy to an option available to many more workers.
- The earliest large-scale old age pension in the United States was the Union Army Pension, payable at age 65 and first available as a pension in 1890.
- Retirement from agricultural roles was much more likely to be gradual than retirement from an industrial job.
- People retired both because of economic incentives that enabled them to retire, such as Social Security, pensions and growing income, and because of factors that drove them out of the labor force, such as poor health and poor job opportunities.
- Age 65 was established as the retirement age in the Union Army Pension Plan. The 1910 Massachusetts Commission on Old Age Pensions defined the old as those 65 or older. In 1920, post office letter carriers and clerks became eligible for pensions at 65. The Commission on Economic Security decided in 1934 that 65 should be the pension age for the Social Security program.
- The first private pension plan was founded by American Express in 1875, but the growth in pension plans was slow. Twelve private pension plans existed in 1900. By 1930, 2.7 million employees, about 10 percent of all private wage and salary workers, were covered by retirement plans. The tax incentives included in the Revenue Act of 1942 led to the expansion of pension plans after World War II, so that 41 percent of private sector wage and salary workers were covered by 1960, and nearly half by the mid-1980s.

Establishment of the Social Security system in the mid-1930s led to significant increases in retirement and acceptance of 65 as a common retirement age. Benefits were small and significantly liberalized in the 1950s (Costa 1998). The conditions for payment were also made less strict. Initially, Social Security required full withdrawal from the labor force to collect benefits. Later, these conditions were loosened, first with an earnings test that allowed some earnings while collecting benefits. In 2000, the earnings test was repealed for beneficiaries older than 70 (Martin and Weaver 2005).

The Social Security early retirement age of 62 was added later. Since 1956, women could receive monthly benefits as early as age 62. Since 1961, men could receive monthly retirement benefits as early as age 62 (American Academy of Actuaries 2010). The normal retirement age of 65 was increased in 1983, with an implementation plan that would slowly move the normal retirement age to 67. The 1983 change was the only legislated change in normal retirement age.

Where Bismarck Fits In

Otto von Bismarck, German chancellor from 1862–90, has been credited with establishing 65 as the retirement age. This is a myth. Under his reign, 70 was the retirement age. It was reduced to 65 in 1916, long after Bismarck's death. According to Social Security Administration (2013), "This myth is important because Germany was one of the models America looked to in designing its own Social Security plan; and the myth is that America adopted age 65 as the age

for retirement benefits because this was the age adopted by Germany when they created their program.”

“Germany was the first nation in the world to adopt an old-age social insurance program in 1889. ... The idea was first put forward, at Bismarck’s behest, in 1881 by Germany’s emperor, William the First, in a ground-breaking letter to the German parliament. William wrote: ‘Those who are disabled from work by age and invalidity have a well-grounded claim to care from the state’ ” (Social Security Administration 2013).

The U.S. Social Security archives continues: “Bismarck was motivated to introduce social insurance in Germany both in order to promote the well-being of workers in order to keep the German economy operating at maximum efficiency, and to stave-off calls for more radical socialist alternatives.” The system provided contributory retirement and disability benefits.

Signals about Retirement Age

The Social Security early and normal retirement ages are “signals.” For the general public, they are indicators that it is acceptable to retire at that time. For private sector DB pensions in the United States, the Employee Retirement Income Security Act (ERISA) generally requires a normal retirement age not older than 65(American Academy of Actuaries 2013). This is also a signal, as are the provisions of the employer-sponsored plans in which people (as well as their family members) participate. The failure to adjust these ages has helped create the expectation that retirement ages do not change with changes in life expectancy.

Social Security was not the only benefit program that supported early retirement before age 65. In 2001, most DB plans allowed early retirement at age 55 or earlier, generally with a provision that reduced the monthly benefit to reflect the longer period of payment. However, in 2001, many DB pension plans allowed retirement with full benefits at age 60 or 62 (Wiatrowski 2001).

While retirement is widely accepted in many businesses, there are other groups that seem to have no expectation about retirement. Supreme Court justices, members of Congress, symphony conductors and some in the entertainment field are examples of highly visible people who continue working to much higher ages. It is unclear what this signals to the rest of society and what influence it has on decisions made about work at higher ages. These signals could influence public policy, employers and individuals.

In 1967, the Age Discrimination in Employment Act (ADEA) prohibited discrimination on the basis of age up to 65. ADEA permitted involuntary retirement provisions so long as they were not imposed prior to age 65 (Wiatrowski 2001). In 1979, a U.S. Department of Labor Interpretive Bulletin allowed DB plans to stop accruing benefits for employees who worked past the plan’s normal retirement age (Wiatrowski 2001). These two actions reinforced 65 as a standard retirement age.

Further developments started to change that. The ADEA was amended in 1978 to extend age discrimination in employment protection to 70. Employers were required as a result to amend their DB plans to eliminate involuntary retirement prior to age 70. In 1983, Social Security was amended to eventually increase the normal retirement age to 67. And in 1986, ADEA again was

amended, removing any age limit. Involuntary retirement was then banned (Wiatrowski 2001). DB plans with involuntary retirement provisions provided strong signals that retirement was not only acceptable but expected and employees were required to leave their long-term jobs. In many situations, the prohibition of mandatory retirement did not change the notion that retirement at a specific age was accepted and expected. One exception to this is university faculty. Many faculty members continue to higher ages.

Social Security changes also offered signals about work as a part of retirement. The earnings tests indicated that earning a small amount of money was an accepted part of the system, and the repeal of the earnings test indicated that work was a much more accepted part of retirement.

Retirement Age Provisions in Private Plans

In the United States, private sector DB plans subject to ERISA may not have a normal retirement age greater than 65 and completion of five years of service. Many traditional DB plans offer early retirement, often with benefits that are more generous for the retiree than the actuarial equivalent benefit. An analysis of 187 larger plans by the Bureau of Labor Statistics (BLS) showed how the retirement-related requirements of these plans changed between 1974 and 1983 (Bell and Marclay 1987). Figure 1 shows the normal retirement age requirement, i.e., the age when unreduced benefits become available.

Figure 1. Bureau of Labor Statistics' analysis of normal retirement age provisions in 1974 and 1983

Age requirement for normal retirement	1974		1983	
	Number of plans	Percent	Number of plans	Percent
Plans with age and/or service requirement	176	94	162	87
Age 62 or earlier, or no minimum age	91	49	123	66
Greater than age 62	85	45	39	21
Plans with sum of age and service requirement	11	6	25	13
Age 62 or earlier, or no minimum age	11	6	25	13
Greater than age 62	0	0	0	0
Total plans	187	100	187	100

BLS analysis shows that retirement ages were liberalized. The analysis also included a calculation of average benefits at various pay levels for three earnings levels and three types of employees. That analysis showed that pension benefits in this set of 187 plans were improved between 1974 and 1983 (Bell and Marclay 1987). Another paper from the *Monthly Labor Review* indicated that as of 2001, retirement ages had remained very consistent since the early 1980s (Wiatrowski 2001).

A note about different types of plans and employee populations

Labor force data generally covers the entire civilian labor force and is not limited to employees of specific employers. Individuals who retire from a job and then work at something else are counted in the labor force participation rates, as are individuals who gradually phase into retirement. Retirement plan level data is generally limited to more specific universes. BLS data generally covers private employers subject to ERISA. Some groups do surveys of public employee plans and multiemployer plans. Plan level surveys can have very different samples.

My impression is that public employee plans have considerably earlier retirement ages than private sector plans. Public safety officers have much earlier retirement ages, but general public employees also have had early retirement ages. My impression is also that multiemployer and negotiated plans have earlier retirement ages than plans in companies with there is no union representation. I have not located a data set to verify this point. The *Monthly Labor Review* article (Wiatrowski 2001) that provides a history of retirement ages does not distinguish by plan type, although it is likely the paper was focusing on private plans similar to those regularly surveyed by the Department of Labor.

A 2012 National Conference of State Legislatures report documents increases in retirement ages in 2009–11 for state employee plans. However, in most cases, the changes only affect future hires so that they will be phased in over a very long period. The report separates general state employees and public safety officers (Snell 2012). Some of the highlights of their findings for general state employees include:

- Before the reported changes, seven plans allowed normal retirement at ages 50–59, and six of the seven required at least 30 years of service. After the changes, only two of the seven continue to allow normal retirement at these ages.
- The number of plans offering 60 as a normal retirement age was reduced to five from 15. Various service periods apply.
- The number of plans offering normal retirement ages of 62–66 went from 21 to 20.
- At the end of the study period, five states had set a normal retirement age of 67, whereas none had an age greater than 66 at the beginning of the study period.

A number of plans increased their retirement age requirements for public safety officers (Snell 2012).

Involuntary Retirement

As DB plans developed, many included involuntary retirement provisions. Wiatrowski (2001) describes such provisions. The paper focuses on provisions that allow continued employment on a year-by-year basis subject to certain conditions and also retirement ages where there is totally compulsory retirement. As discussed above, the paper also cites the history of the ADEA and the ultimate ban on mandatory retirement as result of the 1986 amendments.

Pension plans helped make retirement possible, and many employers required retirement at a certain age. They can no longer do this, but many employees still end up retiring earlier than planned. The Employee Benefit Research Institute (EBRI) Retirement Confidence Survey series has shown that nearly half of employees end up retiring before they planned to. (Helman et al 2013). And 2013 focus groups from the Society of Actuaries (SOA) indicate that many of the

employees who retired voluntarily did so because their jobs had become difficult, their family life necessitated it or they no longer felt welcome (Society of Actuaries 2013).

Societal and Demographic Trends

Life spans have increased while retirement ages declined and then took a modest turn upward. The period of retirement has increased by a great deal in the last century. At the same time, other forces contributed to the landscape.

As societies industrialized and people lived longer, public programs to offer support for the aged emerged. The family and community were once the support system for the elderly; they still play important roles for some. Social benefit programs adopted throughout the industrialized world enabled people to retire despite a trend toward moving away from their families.

During this time, employers established pension and retirement programs, which often included early retirement benefits. DB plans were the most common form of retirement benefit in the United States. The types of pension benefits varied by country. In the United States, and most places where DB plans were common, there has been a major shift to defined contribution (DC) plans.

U.S. private sector DB plans were not allowed to increase normal retirement age beyond 65. Those who shifted from final-average pay plans to cash-balance plans often gradually eliminated the incentives for early retirement. By shifting from DB to DC plans, many organizations are no longer incenting retirement at a specific age, and depending on benefit levels, they may be making it more difficult for people to retire early.

Changes in Life Expectancies

There have been long-term increases in life expectancies in many countries. These changes are widely documented throughout the Living to 100 project. Figure 2 provides historical data on United States life expectancies at birth. The specific number of years of life expectancies depends on what population is considered, but the key point here is that there has been a great deal of improvement, especially among females. Figure 3 shows that the Social Security Administration actuaries are projecting further increases in life expectancy.

Figure 2. U.S. life expectancy at birth, by sex, in selected years (in years)

Years	Total	Males	Females
1900–02	49.2	47.9	50.7
1919–21	56.4	55.5	57.4
1939–41	63.6	61.6	65.9
1969–71	70.8	67.0	74.6
1989–91	75.4	71.8	78.8
2002	77.3	74.5	79.9
2003	77.5	74.8	80.1

Source: Shrestha 2006, table 1

Note: The Congressional Research Service (CRS) compiled data from National Center for Health statistics.

Figure 3. SSA projected life expectancies in selected years (in years)

Year	Male, at birth	Female, at birth	Male, at 65	Female, at 65
2005	74.8	79.6	16.2	19.0
2025	77.0	81.2	17.5	20.0
2050	79.4	83.2	18.9	21.4
2075	81.3	84.9	20.2	22.7

Source: Shrestha 2006, table 4

Note: CRS compiled data from the “2005 Annual Report of the Board of Trustees of Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds,” Table V, A3. The table refers to SSA’s intermediate-range period life expectancies.

Key points with regard to life expectancies

- There has been a huge improvement in the last 100 years.
- Continued improvement is expected.
- Even though life expectancies vary by country, there are similar trends in many countries.
- Women have longer life expectancies (by about three years).

Longevity is also influenced by wealth level and education. There are very large differences in longevity between different demographic groups. These differences have raised concerns about policy and practice changes that would otherwise be more easily accepted.

Labor Force Participation Rates

The United States has experienced a major long-term decline in employment rates of men 55 and older. Munnell (2011) provides a brief history and explanation of the long-term decline. She points out that the notion of retirement as a distinct and extended stage of life is a recent innovation. She looks at data starting in 1880 for ages 55–64 and 65 and older for men. Labor force participation rates were over 75 percent for both groups. She concludes that up to the end of the 19th century, people generally worked as long as they could, and that they typically had about two years of ill health after they ceased working. Work was also very demanding. In their prime, men put in 60 hours of work each week.

Around 1880, the percentage of the older male population at work began to decline sharply. Munnell explains that experts attribute the declines in labor force participation to the development of various pension systems and sources of support, starting with an unexpected and substantial stream of income that appeared in the form of old-age pensions for Civil War veterans, followed much later by Social Security and Medicare (2011). Shifts in employment and shifts in benefits led to lower labor force participation rates at higher ages and to a culture that included an acceptance of longer periods of retirement.

The very long-term decline in labor force participation at higher ages reversed in the mid-1980s (Munnell 2011).

Figure 4 shows labor force participation for men, which have been estimated from 1850 forward and showed little change from 1850 to 1890. Estimates for years prior to 1940 are based on

census data and gainful employment. Gainful employment measures the proportion of individuals who claim to have had an occupation in the year before the census was taken (Costa 1998).

Figure 4. Labor force participation rates of men after age 55 (in percentages)

Year	Age 55–64 (gainful employment)	Age 55–64 (current method)	Age 65+ (gainful employment)	Age 65+ (current method)
1850	92.2		76.6	
1860			76.0	
1880	95.2		78.0	
1890			73.8	
1900	91.0		65.4	
1910	91.1		58.1	
1920	89.1		60.1	
1930			58.0	
1940	82.2	86.1	43.5	41.8
1950	88.1	85.8	47.0	41.4
1960	83.8	84.6	40.8	30.5
1970	86.7	81.5	35.2	24.8
1980	77.4	71.9	24.7	19.9
1990	67.0	67.6	18.4	16.3

Source: Costa 1998, appendix 2A, table 2A.1

Note: Some values are available only for selected years. Values given are as shown in source. Current method refers to the current method of measuring labor force participation.

Some comparative data is provided for selected years. In Figure 5, data is shown for men 65 and older for some years in Britain, France and Germany as well as the United States.

Figure 5. Labor force participation rates of men 65 and older (in percentages)

Year	United States	Britain	France	Germany
1850	76.6			
1860	76.0			
1880	78.0			
1881		73.6		
1882				59.0
1890	73.8			
1891		65.6		
1895				58.0
1896			54.1	
1900	65.4			
1901		61.4		
1907				52.0
1910	58.1			
1911		56.9	51.1	
1920	60.1			
1921		58.9	53.5	

Year	United States	Britain	France	Germany
1925				47.4
1930	58.0			
1931		47.9	48.1	
1933				29.7
1936			42.7	
1939				29.5
1940	43.5			
1950	47.0			26.8
1951		31.1		
1954			36.2	
1960	40.8			
1961		24.4		22.9
1962			27.8	
1970	35.2			17.2
1973		18.6		
1975			10.6	
1980	24.7			
1982			5.0	
1985		8.2		5.1
1989			3.5	
1990	18.4			

Source: Costa 1998, appendix 2A, table 2A.1

Note: Values are available only for selected years. Values given are as shown in source.

As shown in Figure 6, longer-term trends in labor force participation rates show that participation rates for men at 55 and older decreased for many years, bottomed out in the 1990s, and since then have been slowly increasing for more than a decade. Patterns for women are completely different. Women have been increasing their labor force participation over the long run, and the difference between participation of men and women has narrowed a great deal.

Figure 6. Labor force participation rates by age group, 1950 to 2008 (in percentages)

	25–54	55–64	65+
Men			
1950	96.5	86.9	45.8
1960	97.0	86.8	33.1
1970	95.8	83.0	26.8
1980	94.2	72.1	19.0
1985	93.9	67.9	15.8
1990	93.4	67.8	16.3
1995	91.6	66.0	16.8
2000	91.6	67.3	17.5
2002	91.0	69.2	17.8
2005	90.5	69.3	19.8
2006	90.6	69.6	20.3
2007	90.9	69.6	20.5

	25–54	55–64	65+
2008	90.5	70.4	21.5
Women			
1950	36.8	27.0	9.7
1960	42.9	37.2	10.8
1970	50.1	43.0	9.7
1980	64.0	41.3	8.1
1985	69.6	42.0	7.3
1990	74.0	45.2	8.6
1995	75.6	49.2	8.8
2000	76.8	53.0	9.7
2002	76.0	55.1	9.9
2005	75.3	57.0	11.5
2006	75.5	58.2	11.7
2007	75.4	58.3	12.6
2008	75.8	59.1	13.3

Source: Purcell 2009, table 2

A look at more recent data shows that while total labor force participation rates have been falling slightly, rates at ages 55 and older have been steadily rising, indicating later retirement. Figure 7 provides labor force participation rates at older ages for 1990 to 2020 (projected) (Toossi 2012).

Figure 7. Civilian labor force participation rates, 1990, 2000, 2010 and 2020 (projected) (in percentages)

	1990	2000	2010	2020 (proj.)
Total, 16+	66.5	67.1	64.7	62.5
Men, 16+	76.4	74.8	71.2	68.2
Women, 16+	57.5	59.9	58.6	57.1
Older ages total				
55–59	67.0	68.9	73.3	76.3
60–61	55.1	57.1	62.5	64.2
62–64	38.0	40.2	49.8	58.5
65–69	21.0	24.5	31.5	37.8
70–74	11.3	13.5	18.0	22.8
75–79	6.1	7.5	10.9	15.2
Men at older ages				
55–59	79.9	77.1	78.5	78.6
60–61	68.8	66.0	67.4	62.9
62–64	46.5	47.0	54.6	63.4
65–69	26.0	30.3	36.5	41.4
70–74	15.4	18.0	22.0	27.0
75–79	9.5	10.7	14.5	18.2
Women at older ages				
55–59	55.3	61.4	68.4	74.1
60–61	42.9	49.0	58.0	65.4

	1990	2000	2010	2020 (proj.)
62–64	30.7	34.1	45.3	54.1
65–69	17.0	19.5	27.0	34.5
70–74	8.2	10.0	14.7	19.2
75–79	3.9	5.3	8.2	13.0

Source: Toossi 2012, table 3

The percentage of older workers working part time increases by age, and is higher for women than men in all age groups. As Figure 8 shows, the percentage of workers in the age group working part time has been declining, particularly at ages older than 65 for men and women.

Figure 8. Workers age 55 and older working part time, 1990 to 2009 (in percentages)

	Employed	Employed full time	Employed part time
Men 55–61			
1990	72.0	91.2	8.8
2000	71.3	92.3	7.7
2009	69.4	90.0	10.0
62–64			
1990	42.3	76.6	23.4
2000	47.2	77.9	22.1
2009	52.0	79.8	20.2
65–69			
1990	25.9	55.6	44.4
2000	30.4	60.5	39.5
2009	33.3	68.6	31.4
70+			
1990	9.7	47.2	52.8
2000	12.3	48.5	51.5
2009	14.0	54.4	45.6
Women 55–61			
1990	50.0	70.8	29.2
2000	58.1	77.2	22.8
2009	62.0	78.2	21.8
62–64			
1990	28.1	60.5	39.5
2000	34.6	61.4	38.6
2009	41.0	66.7	33.3
65–69			
1990	16.6	43.6	56.4
2000	19.7	44.2	55.8
2009	24.5	53.6	46.4
70+			
1990	5.0	32.8	67.2
2000	5.9	36.3	63.7
2009	7.9	38.6	61.4

Sources: Purcell 2009, tables 3 and 4; Shrestha 2006

Key points with regard to labor force participation at higher ages

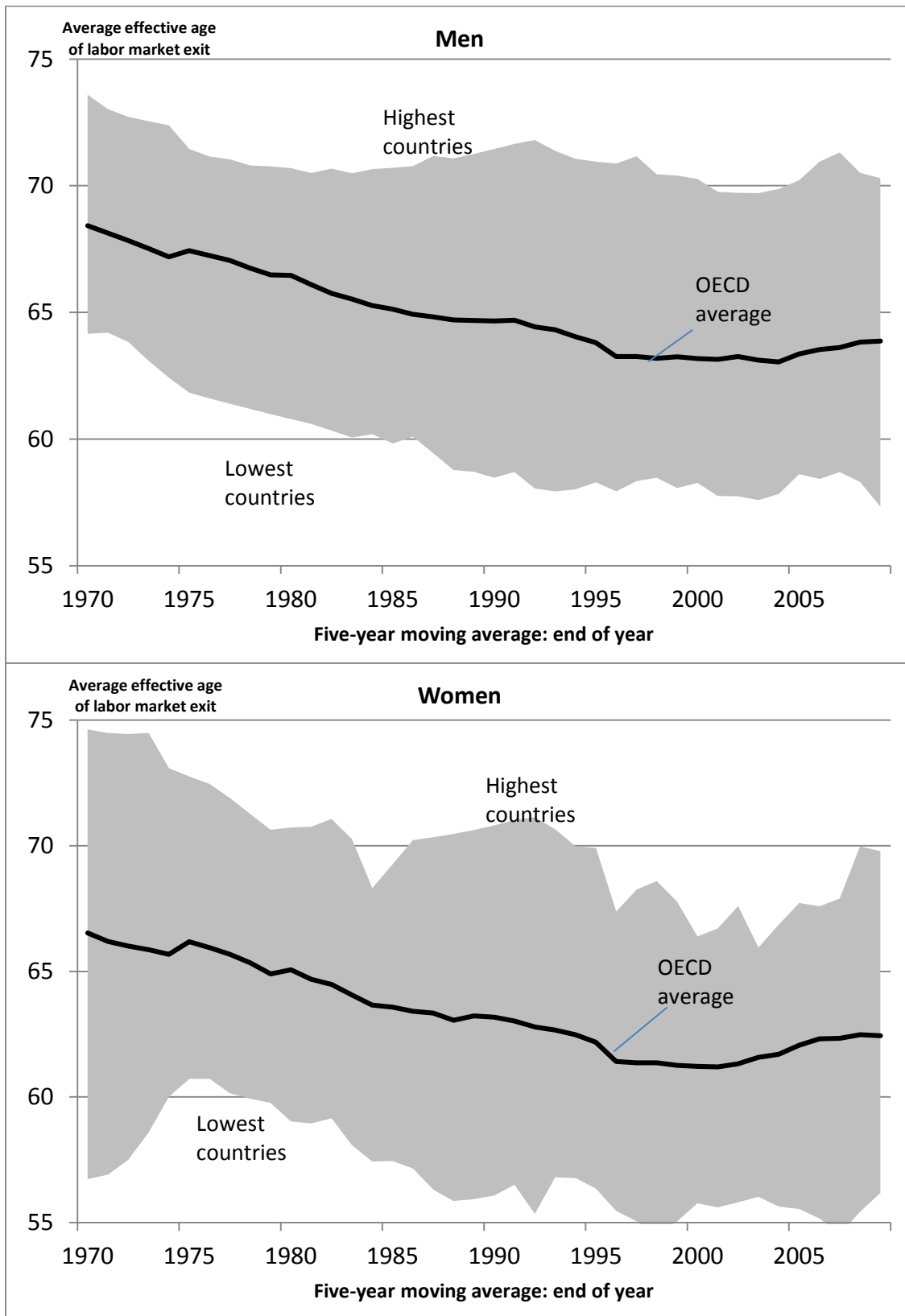
- Men have experienced a substantial long-term decline in labor force participation at higher ages in the United States. This has reversed recently, but the reversal does little to counteract the long-term trend.
- Women are different and have experienced increased labor force participation. Older women have shifted to more full-time work and have had a decline in part-time work as a percentage of the total.
- In the long term, changes in ADEA and the Social Security benefit eligibility and earnings test contributed to the upturn in employment at the higher ages.
- Britain, France and Germany have also shown declines in male labor force participation at ages over 65, and they have lower rates than the United States. The difference is larger in more recent years.

Retirement Age Trends

Labor force participation provides an indication of retirement age trends. Retirement age can be defined in various ways but labor market exit is a useful definition, particularly for comparison purposes.

The Organisation of Economic Co-operation and Development (OECD) publishes data on labor market exit, indicating retirement age trends. Retirement ages vary significantly by country, and have seen a long-term decline in many countries. Figure 9 shows the average effective age of labor market exit, and the high and the low, to show the range of observations for OECD countries from 1965 to 2007. More than 30 countries from around the world are OECD members, including Australia, Germany, Italy, Mexico, Turkey and the United States.

Figure 9. Average labor market exit age in OECD countries, 1965–2007



Source: Organisation of Economic Co-operation and Development 2011, figure 2.4

In almost all OECD countries, the effective retirement age has declined substantially since 1970, but this has been reversed more recently. Over the past decade, the average retirement age flattened out followed by a small increase. Nevertheless, the effective retirement age remains well below the levels of the 1960s and 1970s in most OECD countries (exceptions are Japan and South Korea). For men, the average effective retirement age fell from 68.6 in the late 1960s to 63.5 in the five years prior to 2009. For women, the average age of labor market exit dropped from 66.7 to 62.3 over the same period (Organisation of Economic Co-operation and Development 2011).

Over the long run, life expectancies have increased and average years in retirement have increased even more. The modest increases in retirement ages in the last few years do little to reduce the growth in length of retirement.

The Expert Commission on the Future of the Quebec Retirement System has observed that in 1970, expected work life was 46 years, and the expected retirement period was 13 years. By 2009, expected work life was 38 years and expected retirement was 23 years. The eight-year drop in expected work life was the result of an increase in expected age of entry to the labor force from 19 to 22, and a drop in the expected retirement age from 65 to 60. The 10-year increase in expected retirement was the result of a five-year decrease in expected retirement age and a five-year increase in life expectancy (Expert Commission on the Future of the Quebec Retirement System 2013).

Key points

- In many countries, people live increasingly longer in retirement.
- A fairly common trend among older men has been long-term decline in labor force participation followed by modest increases in recent years.
- There are large differences in actual retirement ages by country.
- A number of countries have challenges related to the growing length of retirement.

Work as Part of Retirement

Increasingly in the United States, work is being considered part of retirement planning. The 2011 SOA Risks and Process of Retirement Survey included retirement timing and preferences as an area of emphasis (Society of Actuaries 2012). Some highlights of the findings of that survey include the following.

- Thirty-five percent of pre-retirees say they don't expect to retire.
- Retirees have retired at a much earlier age than pre-retirees expect to retire. There has been a similar finding in the prior surveys. Many pre-retirees fail to consider the possibility of retiring earlier than planned because of poor health or job loss.
- Pre-retirees and retirees offer different reasons for retirement timing. Among the retirees, the most important reason for retirement timing was health problems and disability.

Among pre-retirees, the biggest reason for expected retirement timing was having enough money.

- In 2011, 44 percent of pre-retirees expect to stop working all at once, whereas 18 percent expect to gradually reduce hours, 31 percent to continue working part time and 3 percent to continue working full time.
- Retirees already working in retirement and pre-retirees expecting to work in retirement give the following major or minor reasons as shown in Figure 10.

Figure 10. Reasons given for working in retirement (in percentages)

	Retirees	Pre-retirees
Wanting to stay active and engaged	77	89
Wanting additional income	74	87
Wanting to preserve or build up savings and investments	59	80
Keeping employee benefits, such as health insurance	33	61

Source: Society of Actuaries 2012

Changes in Social Security may account for part of the difference in the way people think about work as part of retirement. Retirement benefits under the 1935 Social Security Act were to be paid only if the individual was no longer engaged in regular paid employment. In 1939, the retirement earnings test was introduced to test if benefits could be paid. These amounts were changed later. In 2000, the earnings test was repealed for work after the Social Security full benefit age (Martin and Weaver 2005). An earnings test still applies if benefits are collected before the full benefit age. In 2013, a retired beneficiary who had not reached full retirement age could earn \$15,120 in gross wages for the year before the earnings test started to reduce benefits. If a beneficiary earned more than \$15,120, \$1 in benefits was deducted for every \$2 earned above \$15,120. These changes made a significant contribution to creating an expectation about working in retirement.

Research about retiring at different times shows gaps in personal knowledge. Questions in the SOA post-retirement risk surveys have been included to enable understanding of perceptions with regard to the impact of working three years longer. Respondents were asked, “Suppose you retired three years later than you did/plan. Do you think this would make your retirement...” Responses are shown in Figure 11.

Figure 11. Perceptions of the impact of retiring three years later would make retirement (in percentages):

	Retirees	Pre-retirees
A lot more secure	14	10
A little more secure	35	49
No more secure	46	37

Source: SOA 2012

Note: Data is from the 2009 survey because question was not repeated in 2011.

The only factor that scored high on making retirees a lot more secure was continuing to receive employee health insurance. Sixty-two percent of pre-retirees and 28 percent of retirees said that continuing to receive employee health insurance would make them a lot more secure.

There appears to be a significant gap between expectations about working in retirement and what actually happens. More people expect to work in retirement than actually do (Pew Research Center 2006). Pew found that while 77 percent of workers say they expect to work in retirement, only 12 percent of current retirees in their survey were working for pay at the time of the survey. There is a similar gap in expectations about retirement age and actual retirement ages. The SOA risk surveys have consistently shown that retirees retired earlier than pre-retirees expected to retire (Society of Actuaries 2012). As shown in Figure 12, the Congressional Research Service found that the percentage of people working in retirement varies by age.

Figure 12. Percentage of pension recipients who are employed, 1990–2008 (in percentages)

Age group and year	Men	Women
55–64		
1990	37.1	26.5
2000	37.5	33.1
2008	37.2	32.2
65+		
1990	10.4	7.0
2000	11.8	8.0
2008	13.2	8.9

Source: Purcell 2009, Table 6

Working in retirement does not necessarily mean working at the same job or on the same schedule. Of those working at higher ages, some work part time (Batelsmit et al 2013). Some work using the same skills they used before retirement whereas others do something entirely different. Phased retirement is a term often used to describe gradually moving from full-time work to total exit from the labor force. Phased retirement can be supported by employers or it can be something totally worked out by the individual. Most employer-supported phased retirement is based on informal arrangements rather than formal programs. An exception to this is in universities, where formal programs are much more common (Rappaport and Young 2007) (Batelsmit et al 2013).

Key points

- Significantly more people expect to do paid work as part of retirement than actually do.
- More than one-third of male pension recipients age 55–64 were employed in recent periods, and more than 10 percent of those older than 65 were employed. The percentages are lower for women.
- Phased retirement options are an alternative to retiring all at once, and are a good alternative for many people, particularly if they want to work longer.

Retirement Ages and Sustainability

Discussions of retirement systems today often focus on sustainability, or the ability of sponsoring entities to maintain the system in light of changing demographics and life spans. This has been an important concern of the SOA Retirement 20/20 effort. (Society of Actuaries 2009) Part of that effort was the development of a measurement system to evaluate plan designs for their viability in the future. The 2013 Pension Research Council symposium focused on sustainability as well. One of the focuses of Retirement 20/20 was signals. The research recognized that signals create expectations with regard to retirement, and can influence the choice of when to retire. Several retirement signals are discussed earlier in this paper.

Raising the retirement age would substantially help the U.S. Social Security system restore the balance between contributions and benefits. How much it would help depends on how much the ages are raised and how it is done (American Academy of Actuaries 2010). Within the United States, there has been significant controversy over further increases in the Social Security retirement ages. The American Academy of Actuaries and noted economist David John both have advocated for further increases in Social Security retirement ages (American Academy of Actuaries 2010; John 2010).

The Melbourne Mercer Global Pension Index is a system for rating retirement systems in a number of different countries on various aspects of adequacy, sustainability and integrity. The Australian Centre for Financial Studies (2012) observes that challenges common to many countries include the need to “increase the state pension age and/or retirement age to reflect increasing life expectancy, both now and into the future, and thereby reduce the level of costs of the publicly financed pension benefits, [and] promote higher labor force participation at older ages, which will increase the savings available for retirement and reduce the length of retirement.” The analysis supporting the index included a calculation of the difference between life expectancy at birth and the existing state pension age. The minimum difference shown in their study was 7.0 years in India, compared to 12.8 years in the United States, 20.7 in South Korea and 21.2 in Japan. When these results were projected to 2035, the range was from 12.0 in India to 22.3 in France (Australian Centre for Financial Studies 2012). Average periods of retirement for those who reach retirement age and retire will be greater than these values, which are calculated comparing retirement ages with life expectancy at birth. (The reason is that the latter averages include zero years for people who do not reach retirement age.)

Longevity Risk

The 2013 Pension Research Council Symposium, “Recreating Sustainable Retirement: Resilience, Solvency and Tail Risk,” focused on longevity risk as a major problem for DB pension plans. The discussion focused on capital market solutions to hedge longevity risk, but very little attention was paid to the issue of whether retirement ages should have been adjusted to share longevity risk with participants. By not adjusting retirement ages, plan sponsors have permitted plans to become continually more generous. Adjusting retirement ages was discussed in the symposium wrap-up panel. If life spans are increasing and retirement ages are not adjusted, plan benefits in a DB plan continue to grow more generous. If retirement ages are adjusted, depending on the adjustment method, benefits can become generous or stay about the same. Another method of dealing with longevity risk is projected mortality tables. They can enable calculations to provide for appropriate funding, including the mortality changes, but this does not deal with the issue of ever-growing benefits.

Capital market solutions to longevity risk have accompanied freezing DB plans and have in some cases involved plan termination. Figure 13 shows examples of some of the solutions in the market today.

Figure 13. Capital market solutions for plan sponsors’ hedging and managing longevity risk

Solution	Risks transferred or hedged	Comments
Buyout or termination: Either offer lump sum to participants or terminate total plan	Longevity risk and all other financial and demographic risks	Removes pension plan from the sponsor’s balance sheet for those who accept or for entire plan if terminated Transfer risks to participant, insurance company or both
Buy-in: Use annuities to help fund plan	Longevity risk and all other financial and demographic risks for annuitized benefits	Annuities become pension plan assets, and the plan remains on the sponsor’s balance sheet
Longevity swap: Capital market vehicle	Longevity risk only	Exchanges actual pension benefit payments (based on realized longevity) for a fixed set of payments (Out-of-the-money longevity swap is a variation that hedges greater increases in life expectancy) (Can also be done with insurance)
q-Forward: Capital market vehicle	Longevity risk only	Exchanges a payment based on a realized mortality rate for a fixed payment

Source: Roundtable discussion at “Recreating Sustainable Retirement: Resilience, Solvency and Tail Risk,” Pension Research Council symposium, 2013

More on Addressing Longevity Risk

Use of annuities for retirement payouts is recommended as a method of helping participants address longevity risk. Claiming Social Security later is a related solution. Neither of these solutions addresses the issue of benefits getting continually more generous, but both make sense for individuals. They do not remove the need for sensible retirement ages.

One solution proposed for today's retirement challenges is longevity insurance. Longevity insurance helps individuals meet the risk of living too long, at a modest cost. An expert commission in Quebec proposes as part of the solutions for creating sustainability a mandatory longevity pension starting at age 75 (Expert Commission on the Future of the Quebec Retirement System 2013). Such a pension would not directly change retirement ages, but it provides an added layer of income starting at age 75. In the United States, John Turner of the Pension Policy Center has been advocating for an increase in Social Security benefits through a special minimum benefit at age 82 (Turner 2013). Poverty rates rise at older ages, and this proposal would reduce older-age poverty. These proposals do not directly address the issue of retirement ages. Longevity insurance can also be included in a portfolio of solutions offered by an employer who offers a range of retirement solutions.

Conclusions

Retirement was introduced as part of the life cycle for some people starting in the late 1800s, and support for retirement became widespread by the late 1900s. Retirement at 65 emerged in the earliest plans, and then retirement ages dropped as more programs included early retirement provisions. During this period, there have been major changes in life spans, leading to drastic increases in expected retirement periods. There have been modest increases in retirement ages in public programs recently, but these increases account for only a fraction of the increases in life spans. In combination, these trends have led to a steadily increasing expected period of retirement. Retirement age adjustments have not kept up with changes in life spans, and existing retirement ages are contributing to concerns that existing systems are unsustainable.

As we think about solutions to the challenges raised by longer life without very much change in retirement ages, there are additional points to be kept in mind.

- It is more difficult to work at later ages than people expect, and this may be due in part to the difficulty of getting jobs.
- The pattern of “working in retirement” contributes to ambiguity in the definition of retirement.
- Many people do not understand the impact of working longer.
- About four in 10 people end up retiring earlier than they had planned.
- Access to health insurance has been an important factor in many retirement decisions and a barrier to early retirement for some. The implementation of President Obama's

Affordable Care Act will create new options and change the landscape with regard to this important issue(Rappaport et al 2011)

Private plan sponsors are coping with these challenges by shifting to DC plans. Individuals are poorly equipped to deal with these risks. A far better solution would be to look for retirement plan designs that preserve risk pooling but adjust retirement ages and enable adequate prefunding of the improving longevity risks. Such solutions should be tested to see how well they meet the needs of the range of stakeholders.

The retirement plan challenges discussed in this paper are only one part of a complex situation looming for retirees. Other parts include a weak economy, low interest rates, and ever-growing costs for medical care and long-term care. In that context, reforming retirement policy and opening up new options to the private sector is an important place to begin addressing the challenges. Opening up older worker employment opportunities is another critical area for action.

References

- American Academy of Actuaries. 2010. "Raising the Social Security Retirement Age." American Academy of Actuaries Issue Brief (October).
- . 2013. "Rethinking Normal Retirement Age for Pension Plans." American Academy of Actuaries Issue Brief (March).
- Australian Centre for Financial Studies. 2012. *2011 Melbourne Mercer Global Pension Index*. Melbourne: Australian Centre for Financial Studies.
- Bajtelsmit, Vickie, Anna Rappaport, and LeAndra Foster. 2013. "Improving Retirement Outcomes: Timing, Phasing and Benefit Claiming Choices." Society of Actuaries, Schaumburg, IL.
- Bell, Donald and William Marclay. 1987. "Trends in Retirement Eligibility and Pension Benefits, 1974-1983." *Monthly Labor Review* 124 (April): 18-25.
- Costa, Dora L. 1998. *The Evolution of Retirement: An American Economic History 1880-1990*. Chicago: University of Chicago Press.
- Expert Committee on the Future of the Quebec Retirement System. 2013. "Innovating for a Sustainable Retirement System: A Social Contract to Strengthen the Financial Security of all Quebec Workers." Report to the Quebec government.
- Helman, Ruth, Nevin Adams, Craig Copeland and Jack VanDerhei. 2012. "The 2014 Retirement Confidence Survey: Confidence Rebounds-for Those with Retirement Plans." *EBRI Issue Brief* 397 (March).
- John, David C. 2010. "Time to Raise Social Security's Retirement Age." Background report 2492, The Heritage Foundation, Washington, DC.
- Martin, Patricia P., and David A. Weaver. 2005. "Social Security: A Program and Policy History." *Social Security Bulletin* 66 (1).
- Munnell, Alicia H. 2011. "What is the Average Retirement Age?" CRR Issue Brief 11-11, Center for Retirement Research at Boston College, Chestnut Hill, MA.

- Organisation of Economic Co-operation and Development (OECD). 2011. "Trends in Retirement and in Working at Older Ages." In *Pensions at a Glance 2011: Retirement Income Systems in OECD and G20 Countries*. OECD Publishing.
- Pew Research Center. 2006. "Working After Retirement: The Gap Between Expectations and Reality." Social Trends Report, Pew Research Center, Washington, DC.
- Purcell, Patrick. 2009. "Older Workers: Employment and Retirement Trends." Congressional Research Service Report for Congress 7-5700, CRS, Washington, DC.
- Rappaport, Anna M., and Mary B. Young. 2007. "Phased Retirement After the Pension Protection Act." Research Report R-1402-07-RR, The Conference Board, New York.
- Rappaport, Anna M., Steven Wojcik, and Michael Baxter. 2011. "The Impact of Health Care Reform on Older Workers, Retirees and Employers." *Benefits Quarterly* 27 (1).
- Shrestha, Laura B. 2006. "Life Expectancy in the United States." Congressional Research Service Report for Congress RL-32792, CRS, Washington, DC.
- Snell, Ronald K. 2012. "Changes in Age and Service Requirements for Normal Retirement in State Retirement Plans, 2009-2011." National Conference of State Legislatures report, Washington, DC.
- Social Security Administration. 2013. "Otto von Bismarck." Social Security History archives. <http://www.ssa.gov/history/ottob.html>.
- Society of Actuaries (SOA). 2009. "Headlines from the Conference: Defining the Characteristics of the 21st Century Retirement System." Retirement 20/20 project report, SOA, Schaumburg, IL.
- . 2012. "Key Findings and Issues: Working in Retirement." 2011 Risks and Process of Retirement Survey Report, SOA, Schaumburg, IL.
- . 2013. "The Decision to Retire and Post-Retirement Financial Strategies: A Report on Eight Focus Groups", SOA, Schaumburg, IL.
- Toossi, Mitra. 2012. "Employment Outlook: 2010–2020. Labor Force Projections to 2020: A More Slowly Growing Workforce." *Monthly Labor Review* 135 (1) 43–64.
- Turner, John A. 2013. "Longevity Insurance: Strengthening Social Security for Older Retirees." *John Marshall Law Review* 46: 843–915.
- Wiatrowski, William J. 2001. "Changing Retirement Age: Ups and Downs." *Monthly Labor Review* 124 (April): 3–12.