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## **INCREASING WORK LIFE: THE ROLE OF THE EMPLOYER**

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## **I. Introduction**

A natural consequence of increasing life expectancy is the desire of individuals to rebalance the ratio of years working to years in retirement by extending the time spent in productive capacity at career jobs, i.e., delaying retirement until older ages. However, extending an individual's working career involves the actions and preferences of three economic agents – workers, governments, and firms. Each of these agents has different objectives surrounding the optimal age of separation from career jobs. Considerable economic literature has focused on the preferences and behavior of individuals as they seek to maximize lifetime utility subject to a variety of constraints, including age-specific death rates. Most of these studies have been conducted by labor economists with the focus on estimating retirement ages. Other analysts have examined the policies of governments and how public policies are influenced by population aging in an effort to maintain a balance between annual benefits and the tax revenues needed to finance these programs. These studies tend to focus on how government expenditures for

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programs like Social Security and Medicare are influenced by retirement ages and ages of eligibility for benefits.<sup>1</sup>

In contrast, relatively less attention has been paid by economists to the employers' perspective and how firms and organizations determine the optimal age structure of their labor force. A profit-maximizing employer that considers a longer-term planning horizon will be concerned with the distribution of employees' skill, the pay structure, and its own ability to attract, retain, and retire workers at times that are optimal for efficient production. The primary question addressed in this analysis is whether employers have preferences over the retirement ages of their workers. If employers' profitability is a function of the age structure of the labor force, do employers adopt compensation and employment policies to achieve the optimal age structure of their workforce? If employers have a desired retirement age, how will they respond if workers seek to delay retirement from their career jobs and there are no other market changes?<sup>2</sup> Will employers be concerned about the impact on labor cost, productivity, the changed age structure of their workforce, and their ability to attract appropriate numbers of new

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<sup>1</sup> With low fertility rates and longer life expectancies, retaining older individuals in the labor force is a key factor in sustaining economic growth. Clark et al (2008) demonstrate the importance of high labor force participation rates among older person on the future economic growth in Japan.

<sup>2</sup> Four and five decades ago, the baby boom cohort entered the labor creating a sharp increase in the number of young workers. This increase in supply of young workers pushed down the relative wage for new employees (thus raising the relative wage of older workers). This change in labor supply coincides with the introduction of early retirement incentives associated with defined benefit pension plans (Quinn, Burkhauser, and Myers, 1990; Kotlikoff and Smith, 1983), the spread of mandatory retirement policies, and the introduction of retiree health plans. Thus, as relative prices of young and old workers changed, employers altered compensation in an effect to adjust the optimal age structure of their labor forces. In addition, the growth in real income and wealth allowed individuals the resources to retire at younger ages (Costa, 1998)

workers? Employer responses will be directly related to whether these impacts are positive or negative and whether they are significantly large. If the potential effects of delayed retirement are negative, firms will not be neutral in their reactions to trends towards older retirement ages. Facing this situation, what policies can firms adopt to offset adverse impacts and thus accommodate the desire by older workers to extend working careers?

This paper examines issues that influence the demand for older workers and how this demand is influenced by the relative productivity and cost of older workers. We consider the substitutability of workers of different ages and different vintages of human capital. Our analysis is based on a wide ranging review of the literature on optimal age composition in firms, including a discussion of the age gradient in earnings, total compensation, and productivity. Employers seeking to maximize profits must determine the optimal size and age composition of their workforce and then develop compensation policies that will allow them to achieve the desired labor force. Employers may be constrained in their policies by anti-discrimination laws, employee benefit protections, and general labor market forces. Higher retirement ages could impact an employers' productivity and expenditures. Thus, while employee and government incentives point towards longer careers, employer incentives to accommodate later retirements are less clear-cut.

Of course, the extension of the work life of individuals does not necessarily require the increase in the duration of their career employment. Instead, individuals may need to plan for transitional or bridge jobs as they move from full-time employment in their career job to complete retirement at a later age (Quinn, 1999; Ruhm, 1990; Cahill, et al, 2006) or into self-employment (Blau, 1987; Giandrea et al., 2008; Zissimopoulos and Karly, 2007, 2008).

Successful transitions to bridge jobs may be the key to extending work life.<sup>3</sup> Workers may need to plan in advance for new careers and engage in increased human capital investment to prepare for new jobs (Clark, et al., 2013 forthcoming). Firms will need to consider the productivity of workers who are changing jobs in their 60s and 70s and how these workers can be paid an appropriate wage. Given Social Security and Medicare, such workers eligible for government benefits and those who have earned retirement benefits from previous jobs may be less interested in in-kind employee benefits on their bridge jobs and more interested in cash compensation. Thus, the restructuring of compensation to attract second career workers may result in greater employment opportunities for older workers. Will age discrimination policies allow such innovations so that employers are more likely to promote longer careers for their employees?

This analysis examines costs and productivity factors that will affect employers' willingness to reorganize the workplace to accommodate the extension of work life. The framework of our discussion is based on a series of important assumptions which define employer responses to the desire by employees to delay retirement past the age that the firms believes is optimal.

1. Older workers are different than younger workers. They have a lifetime of work experiences that may have enhanced their productive through new investments in human capital and on-the-job training. They have different vintages of human capital compared to younger employees who have just completed their formal education. These differences do not mean that older workers are necessarily better or worse employees, just that they are different.

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<sup>3</sup> Clark and Ogawa (1997) describe the transition from career jobs to new employment that occurs in Japan.

2. Because older workers have different skills and human capital, individuals of different ages are not perfect substitutes. Therefore, employers may seek to maintain a certain proportion of their labor force composed of both young and older workers. Key concepts are the cost and productivity of workers of different ages and how closely they resemble each other.
3. Employment contracts, employee benefits, and government policies may result in costs differences between young and older workers. An important consideration for many employers is the cost of health insurance, which increases sharply as workers age. These cost differences may or may not accurately reflect productivity differences. We argue that it is not enough to align age profiles of earnings and productivity because the relative demand for young and old workers depends on their total compensation compared to their marginal productivity.
4. Because employment costs and employee productivity vary with age, theoretically employers can calculate an optimal age structure of their labor force. Based on the desire to achieve this optimal age structure, firms will develop their compensation packages to provide the appropriate incentives to attract, retain, and, ultimately, retire workers.
5. External changes in market conditions will alter the optimal age structure of a firm's labor force. In particular, the relative cost of older workers could be reduced by changes in government policies or market wages. Additionally, technological changes could alter the value of the human capital of older workers relative to younger workers.
6. Our analysis is not based on a fixed level of employment in the aggregate but instead focuses on the demand for workers by individual firms. If product demand is unchanging, the demand for workers should remain relatively constant unless input prices

are altered. An essential aspect of considering the role of employers in accommodating delayed retirement is whether the total cost of employing older workers declines relative to younger workers. This could occur due to changes in labor market conditions, such as increases the labor supply of older workers and a resulting lowering of their relative cost, or changes in government policies that reduce employer costs of hiring older workers.

We first examine prior studies on each of these points and seek to unify the various components in to an integrated assessment of how employers might respond to changes in preferred retirement ages.

## **II. Background: Why increase work life?**

The most common perspective considered when discussing delayed retirement is that of the worker. Economists believe that individuals seek to maximize lifetime utility subject to budget constraints. One might anticipate that as lifetimes increase, workers would plan to divide these additional years of life between longer periods in paid labor and longer periods of leisure in full retirement.<sup>4</sup> Moreover, individuals may make slower transitions into retirement and work part-time at their career or a post-career employer during a partial retirement. Lifecycle models clearly indicate that in order to achieve the same level of annual income in retirement, workers with a greater life expectancy must either save more during their working years or retire at older ages. Besides their own preferences, workers' decisions will ultimately depend on compensation and employers' human resource policies and on government policies and programs.

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<sup>4</sup> It should be noted that for much of the 20<sup>th</sup> century, life expectancy increased and labor force participation of older persons, especially men, declined sharply. The increase in early retirement was in response to increases in wealth, the expansion of public and private retirement programs, and the availability of younger workers.

While individuals might want to work longer as life expectancy increases, the *opportunities* for continued employment depend on the actions of governments and employers. If the government provides a pay-as-you-go pension or health insurance scheme (as in Social Security and Medicare in the United States), then the government has an incentive to reduce the period of time a worker spends in retirement and increase the time a worker spends paying into the systems. Butrica, et al. (2006) estimated that the government would raise \$180 billion in additional tax revenue in 2045 if all workers delayed retirement by one year. Furthermore, as the average age in the population increases and the cost of national entitlement programs increase, governments have attempted to encourage later retirement through higher ages of eligibility and lower benefits in such programs as Social Security.<sup>5</sup> Delayed retirement should reduce the cost of national retirement programs and help maintain per capita GDP in an aging society.<sup>6</sup>

If a firm has designed an optimal compensation scheme to attract, retain, and retire workers, then firms might seek to offset changes in national retirement programs by adjusting age-specific compensation (if allowed by law) or by increasing the retirement incentives in their own compensation packages. For example, if the normal retirement age of Social Security is raised to 70, employers could restructure their own retirement plans so that working to age 70 is necessary to provide an adequate retirement income. Alternatively, employers could modify their own retirement plans to offset the changes in Social Security so that workers continue to retire at the optimal age from the company's perspective.

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<sup>5</sup> Past changes include the raising of the age for full benefits by the 1983 Greenspan Commission, along with changes in the earnings test and delayed retirement credits (Schieber and Shoven, 1999).

<sup>6</sup> Clark, et al. (2010) illustrates the impact of delayed retirement and higher labor force participation rates for older men and women on the future growth rate of the Japanese economy.



### **III. Optimal Age Structure Within a Firm**

Basic economic theory assumes that profit-maximizing firms seek to produce output using the most efficient mix of inputs given existing technology and factor prices.<sup>7</sup> A simple model for this analysis assumes a production function where output is produced using capital, young workers, and older workers and that the elasticity of substitution between young and older workers is not infinite.<sup>8</sup> Prices for both types of workers are set by the labor markets; however, firms can determine the composition of compensation between wages and benefits subject to certain government laws and regulations and market conditions. Within this framework, how does the firm determine the optimal size and age distribution of its labor force? Let us consider several key factors that influence their decisions and what economists and others have found on these issues.

#### ***Productivity and Earnings Profiles and the Cost of Production***

The demand for workers of different ages and/or vintages will depend on two basic factors: age specific rates of compensation and of productivity. Both of these topics have received considerable attention including whether compensation is determined in spot markets or reflect long term employment contracts. We now consider these topics and how they affect the willingness of employers to accommodate later retirement ages.

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<sup>7</sup> This discussion also applies to government employers and nonprofit organization that have different objective functions.

<sup>8</sup> Maestas and Zissimopoulos (2010, p. 151) argue that “overtime, older workers are becoming closer skill substitutes for younger workers.” This conclusion is based on the declining differences in educational attainment between young and older cohorts of workers and the reduction in the physical requirements of jobs.

Economists have long observed that wages tend to rise with age and increased job tenure but typically the rate of increase declines with age (Ben-Porath, 1967; Mincer 1974). These observations led to the development of human capital theory by Schultz (1963) and Becker (1964) that linked investments in education and on-the-job training to increases in productivity that were rewarded by employers in the form of higher wages in the post-investment years. Becker (p. 153) wrote “Most investments in human capital – e.g., formal education, on-the-training, or migration - raise observed earnings at older ages because returns are part of earnings then, and lower them at younger ages, because costs are deducted from earnings at that time.” A similar conclusion was reached by Schultz (1963) when he concluded that “except for some pure rent (in earnings) for differences in inherited abilities, most of the differences in earnings are a consequence of differences in the amounts that have been invested in people.” These early studies focused exclusively on cash earnings and are based primarily on a spot market theory that indicated that workers were paid their productivity at each age. Thus, continued gains in earnings with age reflect rising productivity. In other words, wages continue to equal productivity so that higher paid older workers do not represent a higher unit cost to employers.

A decade later, labor economists began to focus more closely on the long-term employment relationship between workers and firms. Rather than spot markets where wages equal productivity in every period, these models predicted that firms might tilt the age earnings profile relative to the age productivity profile so that workers were underpaid early in their careers but then overpaid relative to their productivity in the final years of their employment (see Lazear, 1979 and 1981). The basic tenet was that workers essentially posted a bond early in their careers and the company repaid workers with excess compensation later and that this arrangement reduced turnover, helped to sort workers, and enhanced the profits of the firm.

However, such contracts required an end point (retirement) where the present value of lifetime compensation equaled the present value of lifetime productivity. Given that workers are being paid more than their productivity during their later working years, these models provided a rationale for mandatory retirement policies and pensions which provided strong economic incentives for workers to retire at specific ages.<sup>9</sup>

Economists have found it difficult to test these competing theories due to a lack of adequate information on worker productivity and how it changes over time. Medoff and Abraham (1980, 1981) use performance measures by supervisors as an indicator of productivity and conclude that increases in productivity with increases in job tenure explain only a small component of wage gains. Kotlikoff and Gokhale (1992) use data on new hires at Fortune 1000 firms and conclude that productivity exceeds earnings for young employees but that for older workers, earnings are greater than productivity. These studies support the notion that older workers are paid more than their value to firms and as a result, employers have a desire to encourage older workers to retire. In contrast, Hellerstein and Neumark (1995) and Hellerstein, Neumark, and Troske (1999) find that age profiles of earnings and productivity are very similar providing some general support of the human capital theory of earnings growth. If their findings more accurately describe the labor market, firms will be indifferent to the retirement patterns of workers.

One method of testing these relationships is to observe how earnings or compensation profiles change in response to government and employer policy shifts. Studies of the Japanese

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<sup>9</sup> Hutchens (1989) and Skirbekk (2008) provide nice summaries of the alternative theories explaining the growth of earnings with age and review the evidence on how productivity changes with age. Readers should also examine the articles in the *Labour Economics* (June 2013) Supplement: Ageing and Productivity.

labor market provide some evidence on these points. Hashimoto and Raisian (1985) found that the age earnings profile of Japanese workers was steeper than that for workers in the United States. Clark and Ogawa (1992a) showed that when the age of mandatory retirement was increased across the Japanese economy, the slope of the earnings profile flattened which is consistent with Lazear's model of long term employment contracts. Defined benefit pension plans, health insurance for active workers, and retiree health plans provide additional backloading to total compensation and typically include economic incentives to retire at specific ages. The widespread adoption of these plans provides further support for the prevalence of long term contracts during the 1960s and 1970s. However, the significant shift away from defined benefit plans to greater utilization of defined contribution plans and the rapid decline in the incidence of retiree health insurance provision may imply that long term employment contracts are no longer the norm, compensation is being restructured to more closely reflect a spot market, and workers have more flexibility to postpone retirement (Munnell, Cahill, and Jivan, 2003; Friedberg and Webb, 2005; Hurd and Rohwedder, 2008).<sup>10</sup>

This limited and mixed evidence on the link between earnings and productivity leaves open the question of whether older workers are overpaid relative to their productivity; however, research on related points tend to support the idea that total compensation may be backloaded so that the cost of older workers relative to their productivity has been one reason why firms have encouraged older workers to retire. Much of this analysis is based on the significant backloading of benefits associated with defined benefit pension plans. These plans typically base benefits on

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<sup>10</sup> Greater worker mobility may indicate that workers are now less interested in a long term relationship with a single employer. More frequent layoffs and plant closing also provide a signal to employees that employers may renege on such contracts.

final average salary, as a result, the implied cost of a year of additional work is much greater for older career employees compared to those who have been hired more recently. Health insurance acts in much the same way with all workers getting the same policy and paying the same premium even though the cost of older workers of health care exceeds that of younger workers.

### ***Optimal Age Structure of a Firm's Labor Force***

The previous discussion is largely based on the concept that there is only one type of labor, just differences in productivity across workers due to differences in investment in human capital over time. This implies that if older workers are more productive than younger workers, employers could just hire additional young workers to make up for the loss of a more productive older worker through retirement. Alternatively, if older workers delay retirement, employers could respond by hiring fewer younger workers to maintain a constant level of productivity.

But what if older workers are actually different in their skill sets based on years of experience and institutional knowledge. In fact, they might be sufficiently different that the employer considers them two distinct types of labor, i.e. the elasticity of substitution between the two labor inputs is not infinite. Thus, employers would desire to maintain a sufficient number of older workers who provide the experience necessary for the organization to operate smoothly. Similarly, if young workers bring a new vintage of human capital and skills that older workers cannot match, firms will have a strong demand to maintain an adequate level of new hires. Therefore the age structure of a firm's labor force matters and employers will develop their compensation to provide economic incentives that help them attract, retain, and retire workers in a manner that produces the optimal age structure of their workforce.

In such a model, employers would determine the total number of workers and the age composition of their workforce based on the cost and productivity of each type of labor input.

How will firms respond to changes in market conditions due to changes in the desired retirement age or shifts in total labor supply between young and older workers? Evidence from Japan indicates that as the population aged increasing the supply of older workers relative to those entering the labor force, the relative wage of older workers declined thus flattening the age earnings profiles (Clark and Ogawa, 1992b). Reductions in the cost of older workers would tend to increase the demand for these workers and make employers more likely to accommodate a desired increase in retirement ages. As noted earlier, raising the age of mandatory retirement had a similar effect on the age earnings profile in Japan (Clark and Ogawa, 1992a).

If workers of different ages are fundamentally different in the tasks that they can accomplish based on the vintage of their human capital and their labor market experiences, we would expect firms to have an optimal age structure of their workforce and employers would develop compensation and employment policies that would achieve the desired size and age structure. The optimal age structure is also a function of the cost of workers of different ages and employment costs are determined in part by the supply of workers of different ages including the desired retirement age. As the population age structure changes in response to increased life expectancy, compensation should adjust which should then alter the proportion of older workers that firms seek to employ.

### ***Promotion and Time in Grade***

If an employer accommodates the desired for later retirement ages of its older workers and there is no change in the demand for its product, total employment would remain unchanged but the rate of new hiring would decline and the workforce would become older. Will such changes affect the firm's ability to hire quality younger employees and will it affect their turnover rates? How will this change in employment conditions affect the perception of this

employer by young workers? Using population lifetables, Kefitz (1973) developed a demographic model illustrating how lower rates of population growth and hence the aging of the population would slow the rate of mobility up the employment hierarchy. Cantrell and Clark (1980, 1982) expanded this model using a worklife table to further illustrate the impact of population aging, elimination of mandatory retirement, and changes in labor force participation rates on promotional prospects.<sup>11</sup>

It seems clear that if workers delay retirement, there will be fewer promotional opportunities for younger employees. Will longer times in grade make employment in firms with higher retirement ages make jobs less appealing to younger workers? One should remember that young employees ultimately become older workers and will then reap the advantage of being able to retire at later ages. The decline in upward mobility can be moderated if older workers do not remain in top jobs as they extend their working careers. This can be accomplished through reductions in job responsibilities or entering into phased retirement. Phased retirement is providing new opportunities to older workers to keep working at reduced levels. The availability of phased retirement depends on the firm's willingness to offer this opportunity which varies across sectors of the economy (Allen, Clark, and Ghent, 2004). Passage of the Pension Protection Act of 2006 has stimulated a greater interest in phased retirement as it legalized the in-service payment of pension benefits under certain conditions.

#### **IV. Will Firms Accommodate the Desire by Older Workers to Remain on the Job**

Employers would be more willing to extend working life if compensation, costs, and working conditions are altered (see Henkens and van Dalen, 2011 and references therein). Such

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<sup>11</sup> Specific examples of how this change would play out in the academic labor market are provided by Clark and Cantrell (1986) and Clark and Ghent (2010).

changes could also reduce labor market rigidities that hinder employees from reducing hours worked or otherwise transitioning into retirement (Hurd, 1996). In this section, we consider a series of employer and governmental policies that would enable employers to accommodate individuals attempting to delay retirement.

### ***Age Discrimination***

To protect older workers from employer discrimination, US law prohibits the use of a worker's age in making an employment decision (hiring, promotion, compensation, and retention). Employers may be constrained by the need to treat all workers equally in adjusting wages or providing alternative end-of-career work arrangements (see Neumark 2008 for a detailed discussion). Employers may be concerned that any modifications in job titles, responsibilities, and compensation that would make older workers more attractive to retain would be considered age discriminatory.

Employers may be hesitant to hire older workers that may only have a short time horizon before retirement because of the added cost and difficulty in subsequently inducing them to retire. Johnson and Mommaert (2011) find that, although raw numbers indicate younger workers are more likely to be laid off than older workers, controlling for job tenure older workers are actually at a higher risk. Further, once separated from a job, older workers have a significantly harder time finding reemployment. These observations indicate that employers are not always willing or able to accommodate employees desire to extend working life or phase into retirement for fear that they will be in violation of discrimination rules and regulation.

### ***Phased Retirement and Flexible Work Hours***

Employers might be more willing to retain workers until older ages if employment conditions could be modified. To allow for promotional opportunities for younger workers,



employers could reduce the responsibilities and/or shift the titles of old workers. Similarly, if an employer allows employees to gradually reduce hours or develops phased retirement options this could help accommodate older workers' desire to extend worklife. Interestingly, such changes might also be desirable from the worker's perspective.

Phased retirement allows one to extend worklife by enabling a worker to remain at a career job but transitioning into working fewer hours. An employer's ability to accommodate a phased retirement depends on the nature of the work and employment structure. In addition, a defined benefit pension plan may prove a hindrance if the final years of salary are part of a benefit formula or IRS restrictions do not allow for the collection of pension benefits while still actively employed. Hutchens and Grace-Martin (2006) consider what characteristics of employers are associated with a willingness to allow employees to have phased retirements. They find that employers with more flexible work schedules for all employees (e.g., flexible start times and part time work) are also more willing to accommodate phased retirement. However, they find no evidence that the presence of a defined benefit pension plan was associated with a reduction in the probability of allowing phased retirement.

### ***Changes in Government Policies***

Changes in federal policies concerning Social Security and Medicare could substantially reduce the cost of employing older workers. First, the government could eliminate the payroll tax for Social Security and Medicare once workers have reached the ages for full Social Security benefits (currently age 66) and the age of eligibility for Medicare (age 65). This change would immediately make older workers more competitive by lowering their cost by 7.65 percent of

earnings. In addition, these policy changes would increase the take home pay of older workers by an equal amount.<sup>12</sup>

Second, making Medicare the primary payer for medical expenses for workers over age 65 would further reduce the cost of employing older workers in those companies that provide health insurance to their employees. Prior to 1980, Medicare was the primary payer for persons 65 and older whether they were active workers or retirees; however the Medicare Secondary Payer Act shifted this responsibility for actives from Medicare to employer plans. Currently, company health plans are the primary payer of medical costs for workers over the age of 65. A change in policy making Medicare the primary payer would lower the cost of employing individuals age 65 and older as the premium for Medicare-eligible workers would be lower. If Medicare rule changes such as this were in place, this could result in a savings of 5 to 10 percent of payroll costs.<sup>13</sup> Thus, these Social Security and Medicare policy changes would lower the cost of retaining many older workers by approximately 15 percent based on the elimination of the payroll taxes and making Medicare the primary payer for workers over the age of 65.

### ***Flattening the Age Earnings Profile***

In the long run, a slower rate of wage growth with job tenure would result in a flattening of the age earning profile so that the relative cost of older workers would decline and the demand for their services would rise. Such a change would be the natural consequence of a later

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<sup>12</sup> The 6.2 percent cost saving from eliminating the Social Security payroll tax apply full only to those individuals who annual earnings are below taxable maximum; however, the 1.45 percent payroll tax for Medicare covers all earnings.

<sup>13</sup> The Kaiser Family Foundation (2013) reports that the average employer cost for family health insurance coverage in 2013 was \$11,786. Similarly, the employer costs for individual coverage was \$4,885 for individual. In 2012, the full-time year round earnings of men with earnings was reported by the U.S. Census Bureau (2013) to be \$49,398 with women having median earnings of \$37,791.

retirement age in a Lazear-type model. As entering cohorts of new workers want to work until older ages, will they be receptive to a flatter earnings profile? At the same time, workers intending to work longer and their employers should invest more in training and building human capital throughout their careers, thereby increasing productivity into later ages (Clark, Ogawa, and Matsurkra, 2013).

### ***Early Retirement Incentives***

When mandatory retirement policies became illegal, firms were left with limited options to encourage older workers (who may be earning above their marginal productivity) to retire. One such option remaining to employers is the early retirement incentives that can be imbedded into defined benefit pension plans, retiree health plans, and other types of compensation policies. Defined benefit plans typically have strong economic incentives for workers to retire at specific ages (the age of eligibility for unreduced retirement benefits and the earliest age one is eligible for a reduced benefit). When a worker reaches these ages, the value of an additional year of work declines sharply providing a worker with an economic incentive to retire that is very similar to a cut in annual earnings. Many economic studies have shown a large increase in retirement rates at these ages.<sup>14</sup> Recent studies of early retirement incentives for teachers show these programs can be both very generous, and very effective (e.g., Fitzpatrick and Lovenheim, 2013; Mahler 2013). However, these policies may be costly and may have limited effectiveness for employers without a defined benefit pension plan.

### ***Retiree Health Insurance***

An important component to a secure retirement is access to affordable health care. Workers without another way to access health insurance in retirement might postpone retiring

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<sup>14</sup> Kotlikoff and Wise (1987) provide an early study illustrating the retirement incentives in defined benefit plans.

(e.g., Mermin et al., 2007). If an employer wants to encourage earlier retirement, then one strategy is to provide retiree health insurance, thereby reducing the need for the employee to work in order to have access to affordable health insurance. Previous studies have documented a strong link between access to retiree health insurance and earlier retirement ages (e.g., Shoven and Slavov, 2013; Robinson and Clark, 2010). Fitzpatrick (2013) and Leiserson (2013) provide causal evidence that the introduction of retiree health insurance for public school teachers in led to significantly earlier retirements and a stronger responses to the retirement incentives in the defined benefit pension plans.

While providing retiree health insurance may be an effective strategy for encouraging earlier retirements, it is a costly benefit and is rapidly disappearing. Kaiser Family Foundation (2013) reports that only 28 percent of firms with 200 or more workers that offer health benefits to their active employees extend this coverage to retirees. This is down from 66 percent in 1988. Accounting rules (FASB 1989 in the private sector, GASB 2004 in the public sector) that forced the acknowledgement of unfunded liabilities associated with retiree health insurance are typically cited as a turning point away from retiree health insurance provision.

## **V. Conclusions**

Many analysts believe that an increasing proportion of older workers will seek to postpone retirement in the coming years. The central question posed in this paper is whether employers will adopt policies that will facilitate the extension of work life or will employers be concerned about higher costs, lower productivity, and a suboptimal age structure of their labor force? Issues that will determine willingness of firms to accommodate later retirements include:

- Is the total cost of employing older workers greater than their productivity? The answer obviously depends on the relationship between the age productivity profile and the age compensation profile.
- Are older workers close substitutes for young new hires or does experience and different vintages of human capital imply a need for employers to determine the optimal mix of both types of workers in order to have an efficient labor force?
- How does the employer cost of providing health and pension benefits change with an aging work force? Will employers continue to modify employee benefits in an effort to lower the total cost of employment?
- Will later average retirement ages but slower promotional prospects make careers more or less appealing to entry level employees?

We have reviewed a wide range of economic studies and concluded that there is no single answer to these important questions. Employer responses will likely vary across sectors of the economy and over time with changes in economic and regulator conditions; however, we can identify policy changes by the federal government, employers, and individuals that would affect the willingness of employers to accommodate the extension of work life. Employers can work with their employees to redefine job conditions, levels of responsibility, and compensation to modify and reduce any negative effects of delayed retirement. Employment policies such as phased retirement and modifications of job titles and span of responsibilities can reduce negative effects on the promotional opportunities for younger workers. Employees may need to be willing to accept these modifications in terms of employment. Changes in government policies concerning payroll taxes and primary payers for health insurance would reduce the cost of

retaining workers past age 65 or so. Finally, shifts in labor supply may alter relative prices of young and older workers in a manner that favors the retention of older workers.

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