Massachusetts Institute of Technology
Department of Economics
Working Paper Series

PENSIONS FOR AGING POPULATION

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Working Paper 05-33
December 1, 2005

Room E52-251
50 Memorial Drive
Cambridge, MA 02142

December 1, 2005

Pensions for an Aging Population[1]

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For many national pensions systems, anticipated revenues are not sufficient to pay all of anticipated benefits under current rules. In some countries, reform proposals to achieve financial balance have generated a great deal of controversy. On the other hand, there is wide agreement among analysts about some principles for reform. Today, I want to consider two non-controversial issues, issues that are, nevertheless, relevant for France. In particular, I will consider the incentives to continue working beyond the earliest age at which a worker can claim a retirement benefit and (very briefly) the encouragement of adequate voluntary savings for workers who will have longer life expectancies, and, most likely, longer retirements.

Context

Viewed in the setting of a century or two, economically advanced countries have experienced two striking changes – large increases in average life expectancy and large decreases in the average age at which (long-career) workers stop working (or stop holding full-time jobs) (Costa, 1998). This trend has been accompanied by a drop in the length of the average working year as well. Trend growth in real earnings plays a central role in these phenomena. Higher earnings and tax-financed higher public expenditures contribute to longer lives by providing a higher standard of living and by financing improvements in public health and in medical knowledge and its application. Higher

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[1] Presented at IDEI Annual Conference, Toulouse, November 2, 2005. I am grateful to Nick Barr, Olivier Blanchard, Didier Blanchet, Helmut Cremer, Jean Marie Lozachmeur, Georges DeMenil and Alicia Munnell for comments and to Maisy Wong for research assistance.

earnings support decreased work, on both annual and lifetime time scales, by allowing higher consumption despite decreased work.

With longer lives and shorter work-lives, the average retirement period has been growing at both ends. This has occurred despite a long-term trend improvement in the health of older people and a trend decrease in the physical demands of paid labor. In some countries, the last 20 years has seen an end to the trend to earlier retirement, but with stability, not a trend reversal. Thus a key starting point for my thinking about retirement income policies is anticipation of a continued trend to longer lives and no comparable (proportional) trend in the length of working lives (barring radical decreases in the support of retirement incomes).

While the trends suggest a powerful role for what economists call income effects, it is also clear that the rules governing access to retirement pensions and the rules relating the size of monthly retirement benefits to the age at which they start also play an important role in determining retirement behavior. One source of evidence for this conclusion comes from following the labor force experience in particular countries when the countries change the rules governing public provision of pensions. Introducing an earlier age at which workers can access benefits results in considerable numbers of workers retiring earlier. This was evident when the US lowered the earliest age at which men could claim benefits from 65 to 62, enacted in 1961. Such a response is likely to be present whether the pension system is defined benefit or defined contribution.

A complementary source of evidence for the importance of pension rules comes from comparing experiences across countries with similar economic standing. I begin by describing one such analysis, done by Jonathan Gruber and David Wise (1999), based on a collaborative project that has been analyzing pensions and retirement in 11 countries, including France.

Incentives to retire

When younger workers earn, they pay taxes on their earnings, they make contributions to retirement programs, and they increase the anticipated value of future retirement (and disability) pensions. All three of these implications of higher earnings affect the incentive to be in the labor market and the incentive to seek higher earnings. Once a worker is eligible to start receipt of a retirement pension, two additional factors affect the incentive to continue working. One is pension income that would not be paid if the worker does not stop working, or, perhaps, reduce earnings or change employers. Second is the increase in future pension benefits that will occur if the start of benefits is delayed as a consequence of continued earnings. Economists have studied how these financial incentives are important among the factors that affect work and retirement decisions.

A simple way to measure the incentives inherent in pension rules is to calculate an implicit tax on earnings; that is, the decrease in expected lifetime income as a consequence of the pension rules should a worker continue earning for another year. The studies in the Gruber-Wise volume calculated such implicit taxes for each of the 11 countries in the project. And they defined a variable they named the "tax force" by adding up the implicit taxes from the age at which a male worker becomes eligible to claim a retirement benefit up to age 70.[2] In a crude, aggregate way, this variable measures the extent to which the design of the pension system contains a financial incentive to do less work.

To see how this measure of retirement incentives is related to retirement across their sample of countries, they used a simple aggregative labor supply measure. For each age between 55 and 65, they calculated the fraction of the male population not in the labor force and then added up these fractions over these ages. They named the variable "unused productive capacity." Figure 1, copied from their book, shows the scatter diagram of tax force and unused productive capacity for each of the countries in their

[2] The focus here on male labor force experience recognizes that increases in female career patterns that have marked many countries in recent decades have varied in timing and size across countries, making it harder to isolate the impact of pension rules on labor supply by analysis across countries.

sample. They also reported other measures to confirm that their results were not sensitive to the particular definitions. Figure 2 shows a regression line of unused productive capacity on the logarithm of the tax force, using their data, with the coefficients reported in Table 1. As you can see there is a strong correlation and a sizable, statistically significant coefficient.[3] Moreover, time series evidence and analyses based on individual data suggest that at least a large part of this correlation is causation from implicit tax incentives to early retirement.[4]

Good incentives to retire

Countries need taxes in order to have government expenditures and in order to support the incomes of those less well-off financially. While some (particularly in the US) seem to view all taxes as bad, economists recognize the vital role played by taxes. Economists are concerned with structuring taxes in a way that does less harm to the efficiency of the economy while addressing the country's goals of revenue raising, income distribution and the provision of social insurance. While economists disagree on the extent of efficiency costs associated with different taxes, they agree that when tax rates on earnings get too high, the costs become too large.

This conclusion holds as well for the implicit taxes associated with retirement pensions – for those eligible for retirement benefits, the pension system's implicit tax on continued work should not be very large. The underlying logic is that some workers enjoy their work and want to continue working beyond what many consider a suitable retirement age. Others no longer enjoy their work (if they ever did) and are eager to stop working as soon as they can afford a decent retirement. A good retirement income system will not overly discourage the first group from continuing to work at ages at which the second group will indeed retire. This view is widely, perhaps nearly

[3] At the mean, the elasticity of unused capacity with respect to tax force is 0.36.

[4] It is appropriate to search for reasons why there may be reverse causation. One possible story of how the causation might go the other way is that a country that had a lot of early retirement simply did not bother designing the pension incentives to preserve the incentive to work. A taste for early retirement does not represent a good economic reason for ignoring retirement incentives, but could conceivably influence the political process.

universally, held by economists. However, some (too many) non-economists believe that encouraging early retirement is valuable for its impact on the unemployment of younger workers.

Early retirement and unemployment

If the level of employment in an economy at each time were independent of the retirement incentives in the national pension system, then inducing an older worker to retire would provide a job to some other worker. But in a market economy (or a planned economy for that matter) the level of employment demand is not independent of the willingness of older workers to retire. Firms seek to hire more workers when it is expected to be profitable to hire more workers. Anticipated profitability depends on anticipated revenue from sales. But it also depends on the ease of finding suitable workers and the anticipated cost of hiring them relative to their productivity. When more workers are available, firms are more willing to hire because suitable labor is easier to find and equilibrium earnings tend to be somewhat lower. Thus the number of jobs is variable, depending on the number of workers available – implicit-tax-induced early retirement can result in a decrease in jobs so that no simple link exists between earlier retirements and lower unemployment. While that is the basic theory, it is important to examine the empirical evidence, as was done for the impact of pension incentives on labor force participation.

As noted above, from a long historic perspective, developed countries have seen a strong trend decrease in the average retirement age. Yet unemployment rates have not shown a similar trend decrease, as would be the case if earlier retirement reduced unemployment. This shows a strong tendency to a rough (and only rough) balance between labor demand and supply – decreased availability of workers decreases the availability of jobs. If we tried to examine this issue in time series analysis for a single country, we would need to pay attention to the fact that the business cycle tends to impact both unemployment and early retirement – among those losing their jobs in a recession, some workers retire rather than continuing to search for employment. Thus, a simple

positive correlation between early retirement and unemployment would not, by itself, disprove the fallacy that more early retirement decreases unemployment.

To get around this issue, I use the tax force variable of Gruber and Wise together with data on male unemployment rates in the same countries. To hold down the importance of the business cycle for the analysis, unemployment will be measured by a decade long average unemployment rate. In addition, rather than relating unemployment directly to the retirement of older workers, measured by their unused capacity, I will relate unemployment rates to the log of tax force, which is not directly affected by the business cycle. This linkage can be interpreted in two ways. One is to show directly that large implicit taxes to encourage early retirement do not succeed in lowering unemployment rates. A second interpretation is that the log of tax force is being used as an instrument in an instrumental variables regression of unemployment on early retirement, as measured by unused productive capacity. Figure 3 shows the regression of unemployment rates on the log of tax force, as reported in Table 2. Table 3 shows the instrumental variables regression.

Under both interpretations, this empirical evidence shows no systematic pattern whereby countries that encourage early retirement have lower male unemployment.[5] Of course, one must also consider the possibility that the empirical findings are coming from the reverse causation, that following mistaken policies, countries that have consistently high unemployment set high implicit taxes on continued work. The presence of a coefficient that is very close to zero suggests that this interpretation would require a balancing of the direct causation and the reverse causation. While I can not rule out this possibility, it does seem unlikely. Future work by the international team working with Gruber and Wise should be able to explore this link between retirement policies and unemployment in great detail making use of incentive measures and unemployment rates year-by-year.

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[5] Use of total unemployment results in a considerably larger coefficient, but one that is positive, not negative, and still statistically insignificant by a wide margin, as reported in Appendix Table 1. Moreover, as noted above, country differences in trend and level of female labor force participation, makes the use of male-only data somewhat cleaner.

Thus it is a mistaken policy to have very high implicit taxes that strongly encourage early retirement (and which may affect the pension system long term) as a response to unemployment which is generally shorter term and not systematically improved long-term. Discouraging work by high implicit taxes is an example of large inefficiencies (deadweight burdens) which do not accomplish social goals and should be avoided.

Good incentives to retire

I conclude that pension systems should avoid high implicit taxes on continued work past the age at which retirement benefits can first be claimed. Low (or zero) implicit taxes happen automatically with a defined contribution system and can be part of the design of a defined benefit system. For example, Sweden has adopted a form of defined benefit system called a notional defined contribution system, which parallels a funded defined contribution system in benefit rules but need not be funded (or fully funded). Such a system has low implicit taxes on continued work. By relating benefit levels to the age at which they start, a defined benefit system can have low implicit taxes without being a notional defined contribution system. For example, the U.S. avoids high implicit taxes at early retirement ages by sufficiently large actuarial reductions for benefits claimed early. That is, in the US continued work past age 62 lowers the extent to which benefits are reduced because of retirement before the age for full benefits. The change in the reduction for early retirement is sufficient to roughly balance the delay of benefits for a year for the average worker.

The Swedish and US approaches differ in that the Swedish system has an automatic adjustment process based on realized mortality rates while the US sets the adjustments for delay by legislation.[6] Thus adjustments that make sense when first legislated can get out of line with actual (interest rate and) mortality experience even

[6] One can have an automatic adjustment for the change in benefits with work beyond the earliest entitlement age without necessarily having an automatic adjustment for benefits at the earliest entitlement age. Sweden has both.

when they are set right to begin. And I should note that while the US has had low implicit taxes at younger retirement ages, this has not been the case at higher ages.

With a defined contribution system, assuming no change in interest rates or cohort mortality expectations or degree of price competition in annuitization, the change in the level of monthly benefits from a delayed start in benefits would be roughly "actuarially fair." That is, the expected present discounted value of benefits would be roughly the same whether or not the pool of annuitants who are combined in a single risk classification delay claiming benefits. Continued contributions while working would raise the benefit level as would a delayed start in benefits. As noted above, defined benefit systems can adjust benefits to achieve the same end.

However, it is worth noting that being exactly actuarially fair is not, in general, a necessary condition for an optimal adjustment. Deviations from exact actuarial fairness can improve economic outcomes in realistic settings. Life expectancies vary among workers retiring at the same age and subject to the same pension rules. Given the uncertainty of employment opportunities (which are subject to asymmetric information) a positive implicit tax on continued work is part of a good design of insurance about the quality of employment opportunities in the range of retirement ages. Moreover, in the US, and I suspect more widely, earlier retirees tend to have had lower earnings and tend to have higher mortality rates. An adjustment in implicit taxes can reflect this fact even if the benefit formula itself is proportional to lifetime earnings, rather than being a progressive formula, as is the case in the US. But examination of these reasons for deviation from exact actuarial fairness does not lead one to favor large implicit taxes.

Increasing life expectancy and pension rules

Populations are aging as a consequence of both decreased fertility rates and decreased mortality rates. I want to focus on the latter. In thinking about how pension systems should be modified to deal with increases in life expectancy, it is helpful to examine how a worker would sensibly react to a change in life expectancy, if that worker

relied only on his or her own resources. On learning that he or she will live longer than previously expected, an individual worker would realize that the previously planned length of career would not be sufficient to finance the previously planned level of consumption. The worker could restore lifetime financial balance by a mix of three changes: consuming less before retirement (that is, saving more), consuming less during retirement, or working longer. A sensible approach would likely involve all three. That is, I do not think that job opportunities and work difficulty will evolve so that it would be optimal to adjust working life and earnings in proportion to life expectancy, which would then permit the same consumption as before. This view is further supported by the anticipated growth in wage rates with continued technical progress, which, as discussed above, is likely to further support less-than-proportional increases in working lives, if they increase at all.

Now, consider how a pension system relates to these three individual responses. If a pension system does not have large implicit taxes on continued work, as I have argued ought to be the case, then pension benefits are higher for those who start them at a later age. A good system thus already allows for one response to increases in life expectancy: working longer in order to enjoy higher annual benefits.

The other two elements of individual adjustment correspond to an increase in the payroll tax rate (consuming less and saving more before retirement) and a reduction in monthly benefits for any given age at retirement (consuming less during retirement). Both responses thus involve reductions in consumption, one before retirement and the other after. A good approach would include both of these, unless the current system had either much too high a tax rate and replacement rate or much too low a tax rate and replacement rate. In addition to deciding the mix of revenue and benefit changes in order to have long-run financial balance, there is the issue of whether adjustments should be automatic or not.

Different pension rules for different cohorts

Legislated systems stay in force for cohorts born over successive years, sometimes over many successive years. So, how should a system approach the problem of adjusting to differences across cohorts, differences that are anticipated and differences that develop as earnings growth and mortality rates actually evolve? This issue arises in the determination of the size of the system – how tax rates and benefit levels should vary across cohorts. As noted above, this issue also arises in the adjustments for early and late retirement

It is widely thought that mortality rates are very likely to continue to decline well into the future. However, demographers and actuaries disagree significantly about how rapid an improvement to expect. Indeed, such improvements have historically varied from year to year, and even from decade to decade. Thus we should expect significant deviations in the future from current mortality projections, even if those projections are accurate on average over long periods. That is, projections of mortality improvements are subject to considerable uncertainty. As a result, if current legislation sets future levels of taxes and benefits, they are unlikely to line up appropriately with realized mortality rates. Of course, it is always possible to change the pension parameters. But legislating change may be difficult and may be slow.

Indeed, we can think of current legislation of future pension rules as a default option. It is possible to change the rules, but the default option has a powerful effect on actual legislation and future legislation may not be enacted even if that would be advantageous. As a result, some automatic indexing of pension system parameters provides a better default option for the parameters than without indexing. In its notional defined contribution system, Sweden has included automatic indexing for both benefits at the earliest eligibility age and the increase in benefits for delayed retirement.

Such automatic changes should follow three principles. First, the rules should relate to the date of birth not the date of retirement. Otherwise many workers will retire just before a reduction in the benefit formula in response to improved mortality. Such an incentive to retire is inefficient. Second, changes should be made annually. Otherwise

the system will produce large changes in benefit levels across nearby cohorts. Such large changes are inequitable, as benefits will differ more significantly between those born in successive calendar years, some of whom are born just days apart. Large changes are also more difficult to sustain politically. And third, it is better to have explicit rules for changing benefits, rather than relying on some group to review and adjust them in light of experience. Greater predictability and decreased political pressures seem better with automatic adjustment with given rules. Nevertheless, there always remains the option of legislation to change whatever the automatic rules produce.

Automatic adjustment can be made to work without overreliance on projecting mortality, which could easily be politicized. That is, a system may function better if it adjusts benefits based on realized mortality information, not projections. In Sweden, this is done by using historic mortality data in pension calculations without any adjustment for anticipated post-retirement improvements in mortality.

A further issue is the extent to which the financial shortfall generated by improved mortality should be met by revenue increases or by reductions in monthly benefits, recognizing that increasing expected lives increases lifetime benefits. Sweden chose to do all of the automatic adjustment by reducing benefits. With no planned increase in taxes, a defined contribution system, such as in Chile, would do the same. And a similar approach was proposed for the US by a commission appointed by President Bush. In contrast, Peter Orszag and I (2005) selected a half-and-half adjustment in our proposed automatic indexing for the US since we think that with its very low tax rate and replacement rate (by international standards) the US can do better by covering part of the increase in the cost of providing benefits for longer lives through tax increases, thereby lessening the rate of decline of replacement rates that would occur with no tax adjustment. Such an increase is in keeping with how sensible individual lifetime plans would change as life expectancy increases and wages rise to reflect productivity growth.[7]

[7] Peter Orszag and I proposed the following mechanism: each year the Office of the Chief Actuary would calculate the net cost to US Social Security from the improvement in life expectancy observed in the most recent data. This would be done by comparing the cost of benefits for different cohorts, using successive mortality tables. Our proposal for the US is for

Increasing the retirement age

Discussions of adjusting pension systems for greater life expectancy often include the idea of increasing "the retirement age." This form of expression links together parameters of the pension benefit rules (one or both of the earliest age for claiming benefits and the age for full benefits) with the average age at which workers actually retire. It is important to distinguish among these three concepts. Legislation can directly change the pension benefit rules. But the link between rules and when people actually retire depends on the behavior of workers and other changes happening in the economy. So it is important to focus on the rules set by legislation.

Sweden mimics the vocabulary of a funded defined contribution system by having an earliest age at which benefits can be claimed (which is 61) without identifying a concept of an age for full benefits, often referred to as a normal retirement age. Then Sweden adjusts monthly benefits for life expectancy by calculating the level of benefits that costs the same as with shorter life expectancy. Thus if Sweden were to change the earliest age from 61 to 62 with no other changes, workers who would have claimed benefits at 61 would be without benefits for this year, but then would have larger monthly benefits for the rest of their lives. Since the system is roughly actuarially fair, this increase from 61 to 62 would have no noticeable impact on the finances of the pension system. This would hold for any system that is roughly actuarially fair. Thus choice of an earliest age needs to reflect some principle other than directly contributing to financial balance.

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half of this "net cost of increased life expectancy" to be offset by a proportional reduction in benefits, which would apply to all covered workers age 59 and younger. (Once a worker reaches age 60, the rules for his or her benefits would be finalized and would not change further in response to ongoing life expectancy changes in order to reduce uncertainty at this stage of retirement planning.) The other half of the "net cost of increased life expectancy" would be met by automatic payroll tax rate increases, meant to balance the actuarial effects of the benefit reductions over a seventy-five-year period.

Mandatory pension systems are mandatory because of a concern that left to their own devices too many workers would not save adequately for retirement. This concern does not go away as workers age and is the basis for judging what would be a good earliest age for claiming benefits. Increasing the earliest age from 61 to 62 would hurt workers who ought to start benefits at 61, given their job opportunities, financial position and life expectancy (including the position of their spouses). On the other hand, insofar as there are workers who are starting benefits at 61 but would be better off if they waited until 62, increasing the earliest age for claiming benefits helps such workers. Choice of an appropriate earliest age for claiming should balance these two factors.

If replacement rates shrink in response to longer lives, it becomes more plausible that a better earliest age is a later one. But, I have not seen any appealing simple principle for adjusting the earliest eligibility age in step with life expectancy. Such a link would need to be based on an expectation of how much longer people who retire early should work in response to lower mortality rates. But the age at which it is sensible for a worker to retire depends on more than just life expectancy. It depends as well on a worker's ability to work, interest in work, and the availability of jobs. All of these will change as mortality decreases, but not necessarily in a simple relation to life expectancy. A sensible retirement age also depends on the extent to which, because of higher earnings, workers are more interested in retiring earlier. Furthermore, the diversity in the labor force and the appropriateness (in some cases the need) for some workers to take early retirement also underscore the importance of preserving early retirement options. And future declines in mortality will widen the variance in ages at death, which is also exacerbated by income-related differences in the rates of decline in mortality rates. These factors, if anything, *increase* the importance of providing an option of early retirement for those with shorter life expectancy.

"Increasing the retirement age" can refer to increasing the age and/or years of service used to determine receipt of what is sometimes referred to as full retirement benefits. One can index the system to life expectancy by raising the age for full benefits

in some relation to life expectancy.[8] This can be done with or without indexing the earliest age at which benefits can be claimed. Increasing the age for full benefits, however, is merely an alternative method of reducing benefits, one that affects workers retiring at different ages in somewhat different ways. I illustrate this for the system in the US, where the benefit calculation does not depend on a measurement of years of service. Then I consider how an increase in years of service for a full benefit maps into benefit cuts in France.[9]

Under current legislation, the age for full benefits in the US will eventually reach 67. When that has happened, the calculation of benefits based on the individual's earnings record will be adjusted as shown in Figure 4. Here we see that at age 67 a worker receives 100 percent of the calculation based on the earnings record. Those starting benefits earlier receive less, while those starting later receive more – up to age 70. In contrast, if the age for full benefits were 70 rather than 67, the adjustment for the age at which benefits start would change, as shown in Figure 5. From the relative sizes of the bars in the figure, we can see how much benefits are reduced for any given retirement age, as shown in Figure 6.

What we see is that the size of the benefit cut depends on the pattern of adjustments for the age of starting benefits. In the case of the US, the largest cut would fall on those claiming at age 62, even though the group claiming at age 62 have had lower lifetime earnings on average than those claiming at any later age, and those claiming at age 62 have higher mortality rates than those claiming at any later age. This makes for an unattractive pattern of benefit cuts. A direct proposal to make the largest benefit cuts on the poorest group with the shortest life expectancy would not be taken seriously. Making such a proposal indirectly is no more appropriate.

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[8] Such an approach was taken in one of the plans put forth by the commission appointed by President Bush.

[9] One does need ten years of service to be eligible for retirement benefits in the US, but measurement of years of service plays no other role beyond basic eligibility.

Moreover, the induced pattern of benefit cuts for any particular country is not transparent - making the discussion of how much to cut benefits in terms of how much to increase the age for full benefits an unfortunate choice of vocabulary since it obscures rather than clarifies whose benefits are reduced. Similarly, to have the cost of benefits be independent of life expectancy, the relationship between the age for full benefits and life expectancy is not transparent either. Proposals that preserve a constant ratio of or difference between life expectancy and the age for full benefits do not necessarily accomplish the goal of preserving the cost of the system despite mortality changes.

To see the similarly working effects of increasing the years of service required for a full benefit, let us consider the rules in France. Under current legislation the required years of service needed for a full benefit will increase from 40 to 41 between 2008 and 2012 (and continue rising thereafter). An increase from 40 to 41 reduces the benefit received by someone retiring at 65, which is proportional to the ratio of actual years of service to years of service needed for a full benefit (referred to as proratization).[10] Replacing 40 by 41 in the denominator of this ratio would then be a 2.4 percent benefit cut (based on 40/41). Someone retiring at age 65 would receive a benefit 2.4 percent lower than if the years of service for a full benefit had not increased. This number is the same for any number of actual years of service 40 or below. The calculation is similar for different numbers of required years of service.

Someone retiring before age 65 would have benefit cuts from two sources. One is the same 2.4 percent cut related to proratization. In addition there would be an increase in the benefit reduction for having fewer than the full number of years of service, referred to as décote.[11] This reduction is linear in the gap to the years needed for a full benefit for any given rate of benefit reduction . Thus it is a larger percentage cut the fewer the number of years of service. The penalty (décote) for fewer years was 10 percent per year (2.5 percent per trimester) in 2004, but is decreasing in the future, being 7.5 percent in 2008, 5.5 percent in 2012 and then stabilizing at 5 percent. Someone retiring with 40

[10] Since there is a maximum of one in the ratio, the decrease happens only for people with 40 or fewer years of service.
[11] The cuts are not additive, but one minus the cuts are multiplied to give the new benefit level.

years of service when required years were 40 had no reduction. Change the required number of years to 41 when the penalty rate is 5.5 percent per year and a person receives a 5.5 percent reduction along with the 2.4 percent reduction for everyone – receiving a 7.8 percent cut from the increase in required years of service, ignoring the decrease in the penalty rate. Someone with 39 years of service receives an 8.1 percent cut. And so it goes, the fewer the years of service the larger the percentage benefit cut from increasing the required years of service, as shown in figure 7. Combining the decrease in the penalty rate with the increase in the required years of service would give a different pattern, but still one that is highly variable across different years of service in a way that has no apparent logic.

Since changes to the full benefit age or full benefit years of service are a less transparent mechanism for reducing benefits than a direct reduction, a directly indexed adjustment of benefit levels for life expectancy seems preferable. More generally, I think that systems would be better understood without the concept of a normal retirement age, relying on an earliest age for claiming and the increases in benefits as a consequence of a later start in benefits.

Encouragement to save

Insofar as the mandatory pension system reduces replacement rates as part of adapting to longer lives, workers are likely to need additional voluntary savings if they are to have adequate replacement rates.[12] Both employers and government can play a major role in assisting and encouraging workers to save for retirement. In the US, employer organized pension plans encourage workers to save by providing a mechanism for automatic retirement savings from earnings and, often, matching worker contributions. Increasingly, US pension plans have been defined contribution plans, not defined benefit plans. While some analysts are concerned with the shift in the US (and the UK) to greater reliance on defined contribution plans, I am not among them. I have

[12] Longer life expectancies are likely to be accompanied by a greater variance in life expectancy, and so in optimal individual savings rates. This may enhance the value of the role for voluntary savings relative to mandatory savings.

long thought that voluntary corporate defined benefit plans are not a good design given the problems associated with labor mobility and the regulation and insurance of adequate funding. Particularly when supplementing a national defined benefit plan, defined contribution plans seem a better solution for both employees and employers. Employer organized plans can be supplemented by individual retirement plans with financial intermediaries. And the US gives a tax advantage to retirement savings organized through employers or individual arrangements.

One important principle from the perspectives of both worker well-being and capital market efficiency is that preferential tax treatment accorded such savings should be similarly available for different financial institutions that add similarly to national savings. Favoring insurance companies over mutual funds or vice versa is not good for workers and not good for the economy.

Recently, there has been an explosion of analyses of how workers respond to employer-provided retirement savings opportunities (Beshears et al, 2005). Much has been learned about how poorly many workers do in selecting a savings rate and in selecting an asset portfolio. Moreover, much has been learned, drawing on behavioral economics, on how to induce workers to do better. I do not have the time to go into this in detail, but key elements are the use of opt-out rather than opt-in for such plans, use of a high-quality default portfolio, and opportunities for changes in savings rates that begin in the future. By choosing suitable defaults, workers who do not respond through inertia or other reasons can be guided toward a sensible savings rate and a sensible portfolio. Legislation may be needed to allow employers to follow such an approach without undue financial risk.

Since individual arrangements with both insurance companies and mutual funds are far more expensive than when arrangements are done by larger institutions, both employers and the government have an important role to help workers get a better return on their savings. I stress this point since it is easy to underestimate the extent to which administrative costs lower the accumulation available for retirement over the course of a

40-year career. This issue is quantified in Table 4 which shows how much accumulations are reduced by annual charges. For example, a worker who is charged one percent of balances each year will have an accumulated balance at retirement nearly 20 percent smaller than if those charges were fully avoided. Indeed, the ratio of the reduction of the accumulation over a 40-year career to annual charges on assets is roughly 20 to one, since over a 40-year career, deposits remain in accounts for roughly 20 years on average. While government- and employer-organized accounts can not avoid administrative charges, they can drastically reduce them. This opportunity should be pursued.

While much controversy surrounds approaches to reform of national pension systems, let us hope that any reform will include good design features about which there is little controversy.

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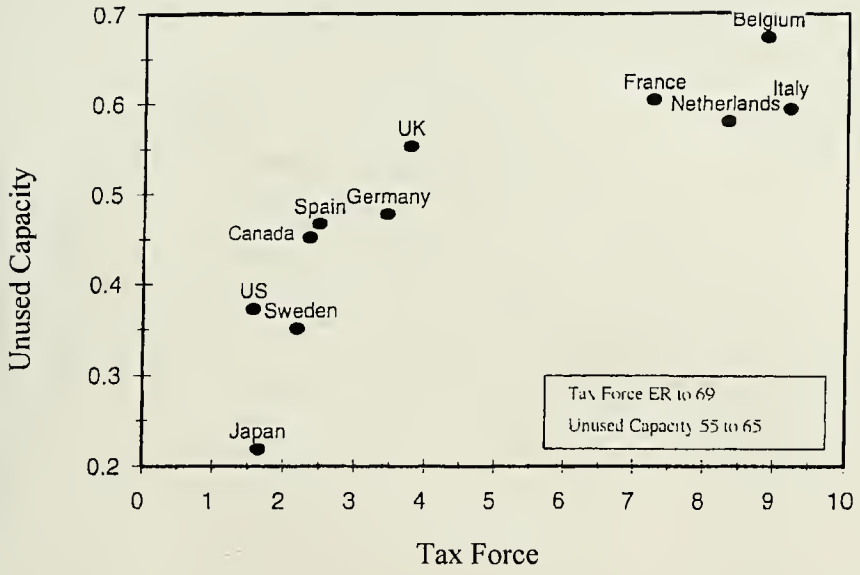
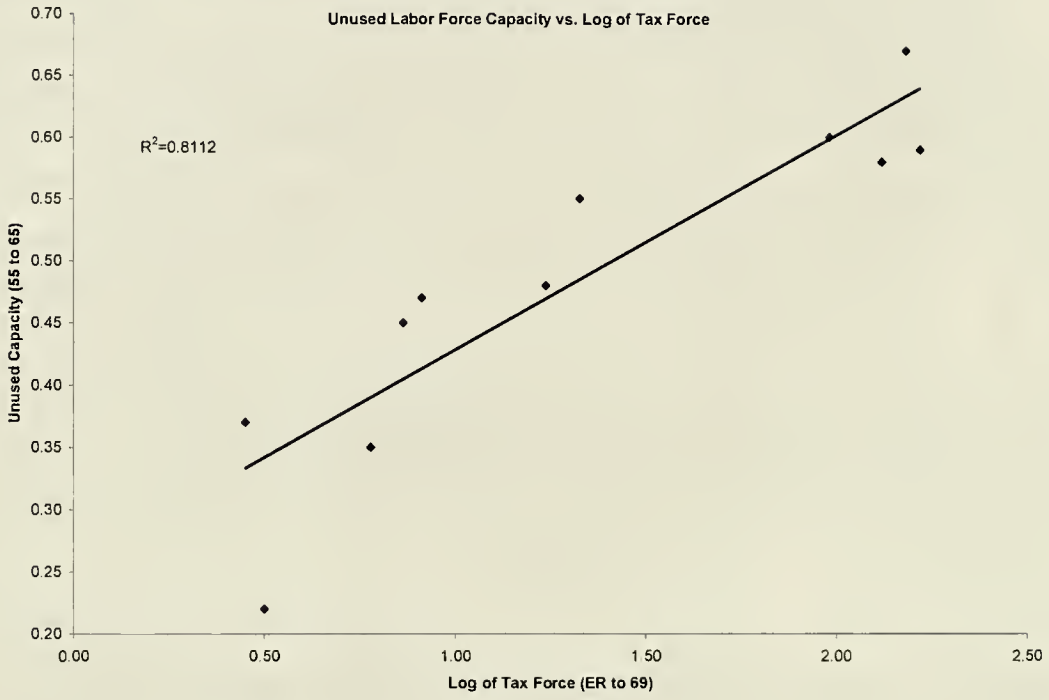
Figure 1: Unused productive capacity vs. tax force



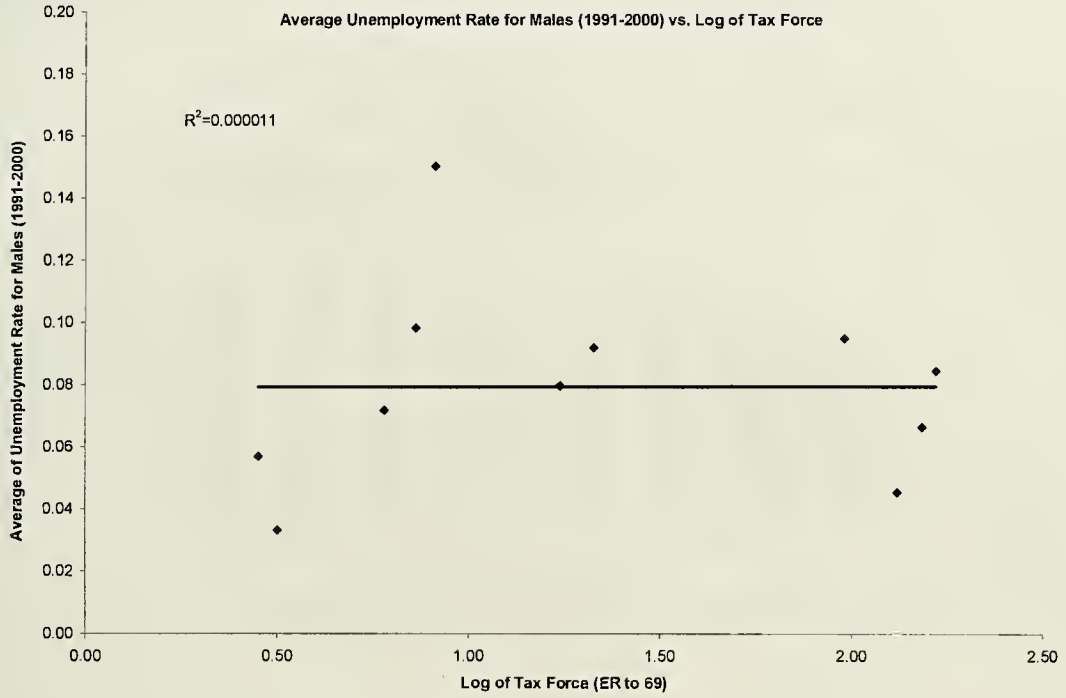
Source: Social Security and Retirement around the World, Gruber and Wise eds., University of Chicago Press, 1999, pg 32.

Figure 2: Unused labor force capacity vs. log of tax force



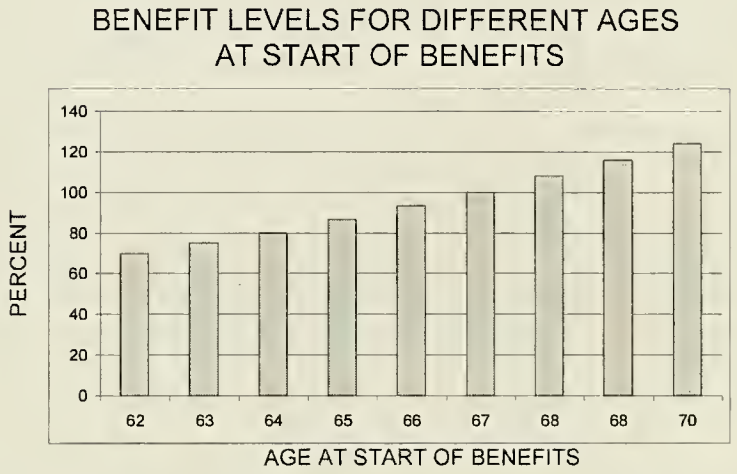
Source: Gruber and Wise (1999)

Figure 3: Average male unemployment rate vs. log of tax force



Source: Gruber and Wise (1999), LABORSTA (ILO)

Figure 4. Benefit levels for different ages at the start of benefits in the US with the age for full benefits (normal retirement age) at 67



For an age for full benefits (normal retirement age) of 67.

Figure 5. Benefit levels for different ages at the start of benefits in the US with the age for full benefits (normal retirement age) at 67 and at 70

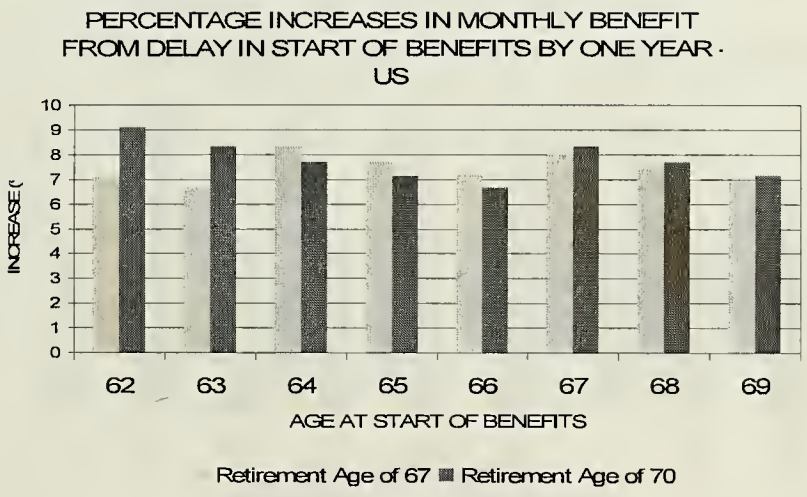


Figure 6. Benefit reductions in the US from increasing the age for full benefits (normal retirement age) from 67 to 70

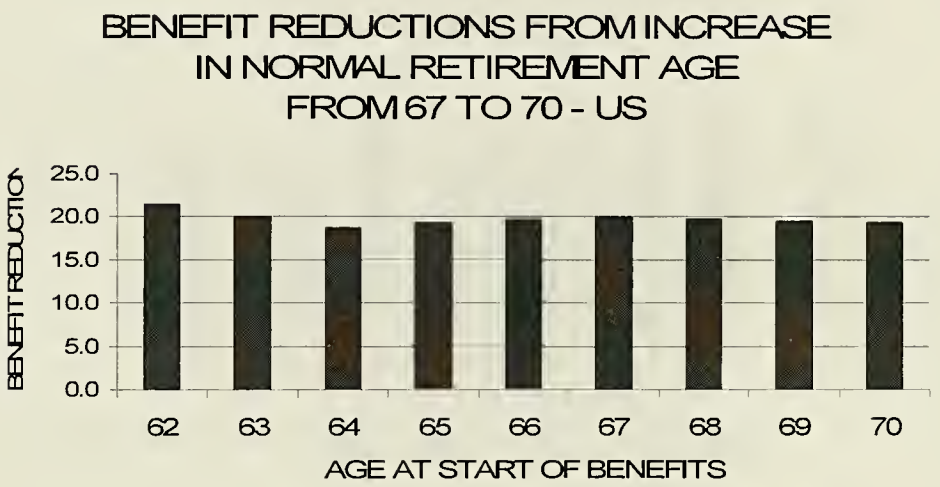


Figure 7. Benefit reductions in France from increasing the years of service for full benefits from 40 to 41

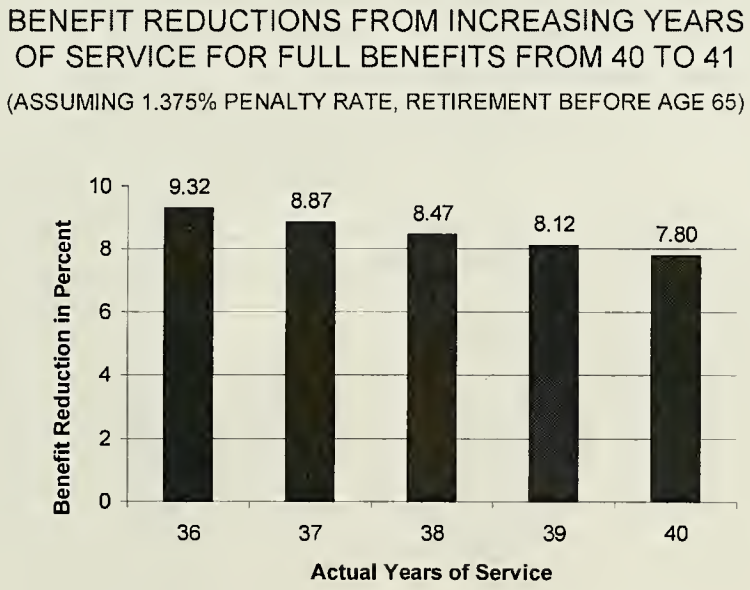


Table 1: Regression Output (Early Retirement):

Unused Labor Capacity = $\alpha + \beta$ ln(Tax Force)

	α	β
Coefficient	0.2551	0.1732
Standard error	0.0412	0.0279
t-stat	6.1938	6.2178
R^2	0.8112	

Table 2: Regression output Male unemployment):

Average MaleUE91_00 = $\gamma + \delta$ ln(Tax Force)

	γ	δ
Coefficient	0.0791	0.0002
Standard error	0.0224	0.0152
t-stat	3.5243	0.0102
R^2	0.0000	

Table 3: Instrumental variables regression output:

Average MaleUE91_00 = $\phi_0 + \rho_0$ Unused Labor Capacity

	ϕ_0	ρ_0
Coefficient	0.0788	0.0009
Standard error	0.0436	0.0875
t-stat	1.8099	0.0102
R^2	0.0021	

First stage:
Unused Labor Capacity = $\phi_1 + \rho_1$ ln(Tax Force)

	ϕ_1	ρ_1
Coefficient	0.2551	0.1732
Standard error	0.0412	0.0279
t-stat	6.1938	6.2178
R^2	0.8112	

Table 4. Decline in Value of Accounts Due to Fees After a 40-Year Work Career [a]

Type and level of fees	Percentage decline in account value due to fees
Front-load fees (percent of new contributions) of:	
1 percent	1 %
10 percent	10 %
20 percent	20 %
Annual management fees (percent of account balance) of:	
0.1 percent	2.2 %
0.5 percent	10.5 %
1.0 percent	19.6 %

a. Assuming real wage growth of 2.1 percent and a real annual return on investments of 4 percent. With a larger difference between the rate of return and the wage growth rate, the charge ratio with annual management fees is slightly larger, and conversely.

Appendix

Appendix Table 1: Regression output (Unemployment):

Average TotUE91_00 = $\gamma_a + \delta_a$ ln(Tax Force)

	γ_a	δ_a
Coefficient	0.0758	0.0098
Standard error	0.0303	0.0205
t-stat	2.5030	0.4794
R^2	0.0249	

Appendix Table 2: Data:

	Unused Labor Capacity (55-65)	Tax Force, ER to 69	Average of Unemployment Rate for Males, (1991-2000) (%)
Belgium	67	8.87	6.64
Canada	45	2.37	9.81
France	60	7.25	9.47
Germany	48	3.45	7.96
Italy	59	9.20	8.44
Japan	22	1.65	3.31
Netherlands	58	8.32	4.54
Spain	47	2.49	15.01
Sweden	35	2.18	7.16
United Kingdom	55	3.77	9.19
United States	37	1.57	5.68

Source: Gruber and Wise (1999), LABORSTA (ILO)