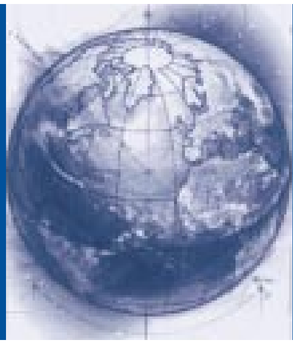


Research Highlights
in the Demography and Economics of Aging

Issue No. 2 June 1998

Social Security and Retirement Around the World

Population aging has placed enormous financial pressure on social security systems around the world. This pressure — which already threatens the financial viability of many programs — has been compounded by an international trend toward younger retirement. Social security systems are not only supporting retirees who are living longer, but also retirees who are leaving work earlier. Research results from a new project, funded by the National Institute on Aging (NIA) and taking place at the National Bureau of Economic Research (NBER), suggest that the trend toward earlier retirement has been induced by the social security systems themselves. Because of their benefit structure, many social security programs provide substantial incentives for earlier retirement, thereby exacerbating the financial problems that they face.

The NBER Project

The NBER project on *Social Security and Retirement Around the World* is a cooperative international research effort involving economic scholars in eleven industrialized countries: Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Spain, Sweden, the United Kingdom, and the United States. Directed by Jonathan Gruber and David Wise, the project has produced a set of parallel studies describing the social security systems, their incentives, and retirement behavior in each of the eleven countries. The studies have been completed with a uniform template, producing comparable descriptive data and analytic calculations for each country. The eleven country studies, and an overview by Gruber and Wise, are contained in a forthcoming volume on *Social Security Programs and Retirement Around the World*, published by the University of Chicago Press. A summary of the project also appears in the *American Economic Review (May 1998)*.

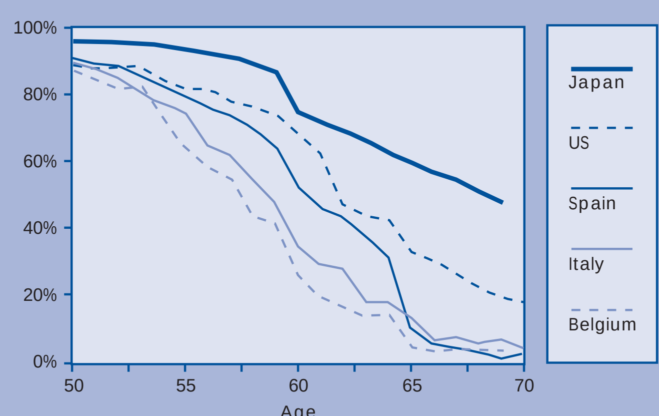
Project findings on social security and retirement are presented both within the individual country studies, and in the cross-national summaries that integrate them. Within countries, one finds that people retire more often at ages when it is financially beneficial, as defined by the benefit provisions of the social security system in each country. And policy reforms that have changed the benefit structure in particular countries appear to have caused corresponding changes in when people retire in those countries. Making comparisons across countries, one finds earlier retirement in the countries with social security systems that "tax" continued work more heavily. So in countries where the general tax burden on work at older ages is large, many more older persons choose retirement, rather than continued work.

This issue of *Research Highlights* summarizes the differences in retirement behavior in different countries, the differences in incentives in their social security systems, and the relationship between them. While the summary papers by Gruber and Wise (and this summary report) are based on data for men, the individual country papers present parallel data for men and women, and it is clear that the incentive effects of social security provisions are important for both.

Earlier Retirement

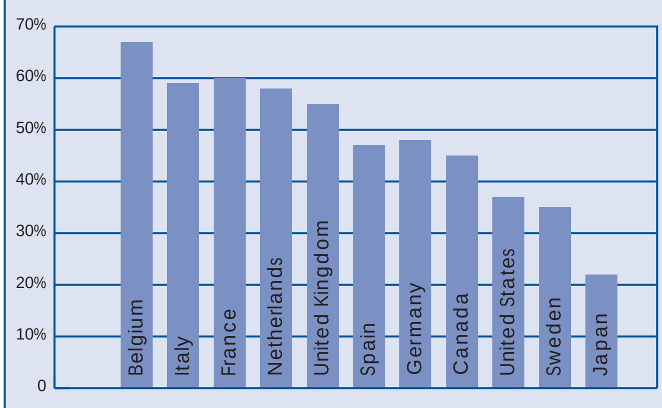
In every country in the study, there is a trend toward younger retirement. The trend is most evident for men, but the labor force participation of older women is also declining, in spite of large increases in work among younger women. In the early 1960's, over 70 percent of men between ages 60 and 64 were working in all but one of the countries, and over 80 percent were working in several countries. By the mid 1990's, this rate had fallen to below 20 percent in Belgium, Italy, France, and the Netherlands; to about 35 percent in Germany; and to 40 percent in Spain. Although analysts in the United States have often emphasized the 'dramatic' fall in work at older ages in the U.S. population, the decline from 82 percent to 53 percent was modest in comparison to these European countries. Japan stands out with the smallest decline of all the countries, from about 83 percent to 75 percent. Figure 1 shows current labor force participation rates of men by age in several of the countries. It highlights the significant difference across countries in labor force participation rates after age 55.

Fig. 1 LABOR FORCE PARTICIPATION RATE BY AGE



Gruber and Wise have used the cross-country data on labor force participation to develop a consolidated measure of "unused productive capacity" in each country. The measure corresponds to the percentage of the population in a particular age range (such as age 55 to 65) that is not working. (The investigators emphasize that this is only a relative measure; there is no reason to assume that everyone who is not working should, or could, work.) Figure 2 shows the unused productive capacity measure for age 55 to 65 for each of the eleven countries in the study.

Fig. 2 UNUSED PRODUCTIVE CAPACITY, AGES 55-65



Countries that have low labor force participation rates at older ages (such as Belgium, Italy, France, and the Netherlands) have correspondingly high measures of unused productive capacity. Belgium has the highest unused capacity measure, at 67 percent. The United States has somewhat more labor force participation and, consequently, a lower level of unused productive capacity. Japan has by far the lowest levels of unused productive capacity, at 22 percent. The final section of this report illustrates a strong relationship between the incentive effects of the social security system in each country and the unused productive capacity measure described here.

The Implicit Tax on Work

The most important component of the NBER project is the detailed computation of retirement incentives in different social security systems. The retirement incentives in each system result in part from the initial age of eligibility for social security payments, and in part from the benefit formulas used to calculate social security payments for workers retiring at different ages.

Social security systems generally define an "early" retirement age, which is the youngest age when a person can begin to receive retirement income payments. In some social security systems, such as the United States Social Security program, the benefit payment rate is increased for older workers who postpone retirement beyond the early retirement age. In these systems, one gives up an immediate payment and, in return, gets larger future payments. This adjustment has a direct effect on the work and retirement incentives of the program. If continuing to work leads to a large increase in the benefit payment, it will be more attractive for workers to postpone retirement. At the opposite extreme, if the benefit payment rate is unchanged by continuing to work, then postponing retirement would involve a complete sacrifice of immediate benefit payments with no offsetting increase in future benefits. This benefit structure acts as a large "tax" on work, and creates a financial incentive to retire. The Gruber and Wise group has developed precise measures of this tax by comparing the *longer* stream of future benefit payments that a worker would receive by retiring today with the *shorter* stream of (possibly larger) future payments that a worker would receive by postponing retirement.

Fig. 3 IMPLICIT TAX RATES ON WORK

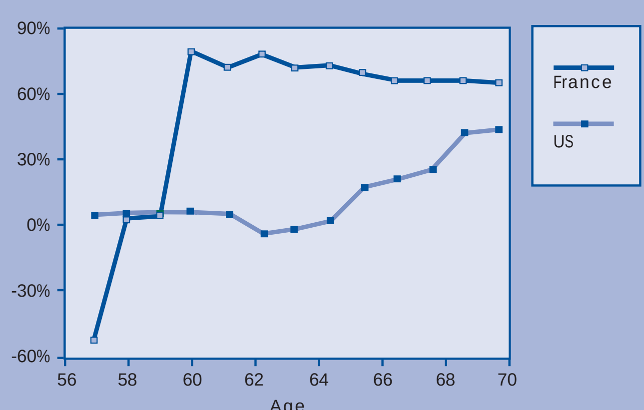


Figure 3 shows the implicit tax rate by age for a median income worker in France and the United States. In France, social security benefits are first available at age 60, and there is no increase in the benefit payment rate for delaying retirement after age 60. Thus workers who postpone retirement give up their social security payment, which is quite high relative to the United States, with no compensating increase in future benefit payments. The tax rate on continued work after age 60 in France is about 70 percent. In the United States, Social Security benefits are first available at age 62. But those postponing Social Security benefits after age 62 receive a compensating increase in their future payment rate, so there is little or no tax on continued work at age 62. The benefit adjustment becomes somewhat smaller after age 65 (the "normal" retirement age), and this is reflected in higher implicit tax rates after age 65. (A gradual increase in the adjustment formula for postponing retirement after age 65 is in process in the United States.) Comparing the two countries, the social security system in France has a much stronger incentive to retire at age 60, while the United States policy is more age-neutral in its influence on retirement.

Fig. 4 AGE-SPECIFIC RETIREMENT RATES

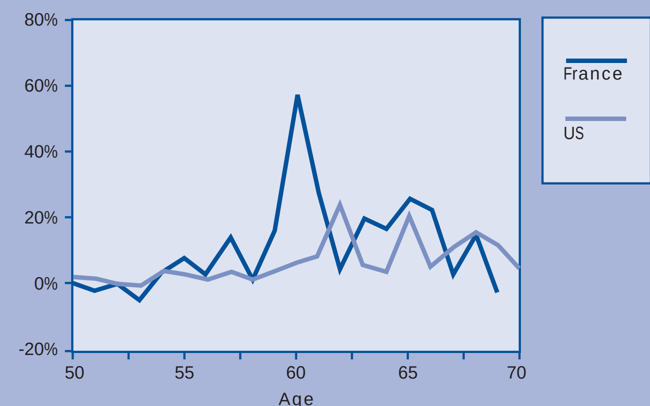
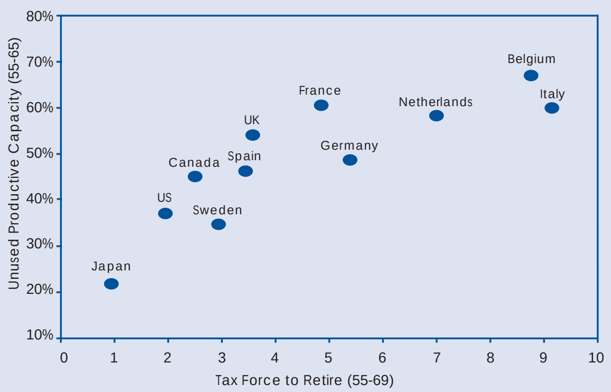


Figure 4 shows retirement rates by age in France and the United States, based on those who have continued working up until each age. In France, the age-specific retirement rate jumps to about 60 percent at age 60, suggesting the very strong influence of these policy incentives. In the United States, age-specific retirement rates are more level, as would be expected of a more "age-neutral" retirement program.

The Tax Force to Retire

While there is no completely satisfactory way to summarize the country-specific incentives for early retirement, Gruber and Wise calculate an illustrative measure of the "tax force to retire," which is the total of the annual tax rates on work between ages 55 and 69. The measure ranges from less than 1 in Japan to over 9 in Italy. The relationship between this tax force to retire and unused labor capacity in each country is shown in figure 5.

Fig. 5 TAX RATES AND UNUSED CAPACITY



As shown, there is a strong correspondence between the tax force to retire and unused labor capacity. At the extremes, Italy and Belgium have the highest tax rates on work after age 55, and among the lowest labor force participation rates between ages 55 and 65. Japan has the lowest tax rates on work after age 55, and the highest labor force participation rates between ages 55 and 65. This cross-country comparison reinforces the results suggested by the individual country studies. The financial structure of social security systems is strongly related to the ages of retirement. While these results are highly suggestive of a causal relationship from policy design to retirement behavior, the authors caution that some part of the relationship may result instead from the implementation of early retirement benefits in countries that already had poor labor market conditions, and large numbers of unemployed persons in their 50's and 60's. Still, the correspondence between policy incentives and labor market participation is striking. It will be explored further in continuing project research.

International Participants

This NBER project has been a cooperative international effort, consisting of parallel analyses in each of eleven countries. The country studies were conducted by:

- *Pierre Pestieau and Jean-Philippe Stijns (Belgium)*
- *Jonathan Gruber (Canada)*
- *Didier Blanchet and Louis-Paul Pelé (France)*
- *Axel Börsch-Supan and Reinhold Schnabel (Germany)*
- *Agar Brugiavini (Italy)*
- *Takashi Oshio and Naohiro Yashiro (Japan)*
- *Arie Kapteyn and Klaas de Vos(Netherlands)*
- *Michelle Boldrin, Sergi Jimenez and Franco Perachi (Spain)*
- *Mårten Palme and Ingemar Svensson (Sweden)*
- *Richard Blundell and Paul Johnson (United Kingdom)*
- *Peter Diamond and Jonathan Gruber (United States)*

REFERENCES

Jonathan Gruber (MIT and NBER) and David Wise (Harvard and NBER), *Social Security Programs and Retirement Around the World*, University of Chicago Press, forthcoming.

Jonathan Gruber and David Wise, "Social Security and Retirement: An International Comparison," *American Economic Review*, May 1998.

The National Institute on Aging supports nine research centers on the demography and economics of aging, based at the University of California at Berkeley, the University of Chicago, Duke University, Johns Hopkins University, the University of Michigan, the National Bureau of Economic Research, the University of Pennsylvania, RAND Corporation, and Syracuse University. *Research Highlights in the Demography and Economics of Aging* is prepared for NIA as a cooperative activity of these NIA research centers. The managing editor is Richard Woodbury. For information on the Centers, call Lora Myers at 734-998-8693; for NIA programs in the demography and economics of aging, call 301-496-3138; for the series editor, call 207-847-9300.