Chapter 1 (pp. 1-40) in: 
**Passing the Torch: The Influence of Economic Incentives on Work and Retirement**
Joseph F. Quinn, Richard V. Burkhauser, and Daniel A. Myers
Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 1990

Copyright ©1990. W.E. Upjohn Institute for Employment Research. All rights reserved.
Introduction and Overview

The artful policymaker can anticipate future crises and develop plans to ameliorate them. These plans may seem puzzling to those concerned with present and past problems who do not foresee what lies ahead. No demographic phenomenon has provided a greater continuing challenge to the policymakers’ skills than the aging of the postwar baby boomers. During the 1950s, they created a demand for maternity beds and four-bedroom houses in the suburbs. As they entered school, they forced a massive increase in educational facilities and then left some painful contractions in their wake. In the 1970s, they sorely tested the economy’s ability to create jobs for young adults, and they may soon clog promotion paths as they progress up the occupational ladders. In the early part of the next century, they will contemplate leaving the labor force. Their decisions on when and how to retire will have dramatic implications for the structure of society, the economy, and the financial well-being of our public and private retirement income schemes.

The demographic projections are startling. In the United States, the population aged 65 and over—about 30 million today—will nearly double over the next 40 years. In stark contrast, the population under 65 is estimated to increase by only 12 percent. As a result, the proportion of the population over age 64 is projected to rise from 12 percent today to nearly 20 percent by the year 2030. The nation then will look like Florida today.¹

Those interested in issues of retirement finance often emphasize the aged-dependency or support ratio—the ratio of those of prime working age (20 to 64) to those of traditional retirement age (65 and over). In the United States, this ratio is nearly 5 to 1 today, but is estimated to drop to about 2.6 to 1 by the year 2030 and to 2.4 to 1 by 2060 (Aaron, Bosworth, and Burtless 1989). In fact, the actual story is even more
significant because 65 is no longer the age of normal retirement. As we will see, older workers have been leaving the labor force earlier and earlier, decreasing further the ratio of those employed to those retired. The ratio of Social Security-covered workers to old-age and survivor beneficiaries is forecast to drop from about 3.3 to 1 today to only 2 to 1 by the year 2030 (Tobin 1988).

These changes are dramatic and extremely important. But some can be predicted—like the number of older Americans—and others—like retirement patterns—can be influenced by current and future public policy decisions. The future is not exogenous. It depends on what we foresee and how we respond to it. We will argue that individual retirement decisions depend in large part on the financial structures we have built into our public and private retirement systems. These structures frequently penalize workers who stay on the job too long—or leave too early—and thereby influence labor supply decisions in important ways. The financial incentives that currently exist may have made sense in the past, but demographic trends suggest that they will not in the future. Our ability to forestall crisis depends critically on an understanding of how these financial structures work, how they affect labor supply decisions, and how they can be changed to alter retirement trends in the years ahead.

Dramatic changes in attitudes and public policy toward retirement and in the employment patterns of older workers have occurred in the United States over the past several decades. Americans are leaving the labor force earlier than ever before. As recently as 1950, nearly half of all American men aged 65 and over were employed. By 1960, this figure had dropped to a third, and by 1970 to a quarter. Today, only about one in six older men continue to work for pay.

These long-term trends in the age distribution of the population, together with large increases in real Social Security benefits and adverse economic conditions, led to a Social Security financial crisis in the 1970s. Trust funds declined and were projected to disappear by the mid-1980s, and the long-run financial stability of the system was threatened. As a result, the National Commission on Social Security Reform, headed by Alan Greenspan, was appointed to analyze the expected flows of funds into and out of the system and to propose changes
to bring these two streams into balance. Major legislation followed in 1983, which raised the level of future Social Security contributions, scheduled an increase in the normal retirement age from 65 to 67 while increasing the benefit reduction associated with retirement at age 62 (the equivalent to an across-the-board benefit cut), and made up to half of the benefits taxable for certain higher income recipients.

At the same time, Social Security, traditionally an extremely popular program among recipients and contributors alike, was subject to increased scrutiny and criticism. Some younger workers, reacting to the increased tax levy and the lower rate of return they expected to receive on their contributions, complained about continued participation in the program. Confidence in the system’s ability to pay benefits in the future waned and some analysts suggested that participation in the Social Security system should be made voluntary. 6

Retirement trends and retirement policy leapt from the back to the front page. They continue to be matters of public debate. Interest has further intensified with concern over the federal budget deficit. Since the outlay on old-age, survivors, disability and health insurance (OASDHI) constitutes almost a quarter of all federal expenditures, Social Security is part of the deficit discussion, even though many politicians consider it off limits.

Too often in this public policy debate, specific reforms are proposed without an adequate understanding of how such changes will affect labor supply and retirement decisions. A major goal of this book is to provide an overview of the American retirement system and how it influences work across the life cycle. We will do so by reviewing what economists have learned about the retirement process over the past two decades.

As we will see, much of our increased understanding comes from two outstanding longitudinal surveys of older Americans—the National Longitudinal Survey of older men (NLS), financed by the Department of Labor, and the Retirement History Study (RHS), conducted by the Social Security Administration. 7 Because of studies based on these and other data, we now have a much better understanding of the nature and magnitude of the financial incentives facing older workers. We are
convinced that Social Security and employer pensions do influence retirement decisions and that people respond to these incentives in ways that are consistent with economic theory and common sense.

We also have learned that public and private pension systems affect labor market behavior throughout the life cycle—not only at retirement, but before and after as well. As we will see, the literature on the actual retirement decision is voluminous. Much less has been written, however, on how pensions influence younger workers—long before retirement—and those who have already left career jobs. We will show that work after "retirement" (after departure from a career job) is a very common event and suggest that it may become even more so in the future. Relatively little research exists on labor force behavior during this growing portion of the life cycle—the years after departure from the career job. 8

Our review of the literature is selective. We focus on the economic determinants of retirement within a public policy framework. We chose to do so for several reasons. This is the area, we believe, in which the most important new insights have occurred. In addition, this is the arena in which we have worked and which we feel most qualified to discuss. And finally, these economic incentives can be changed through legislation. These are the policy levers that affect aggregate behavior. Our focus, however, should not imply that we think that other factors are unimportant. Mental and physical health, social support networks, attitudes toward work and leisure, and previous employment experience obviously influence the retirement decision. But we, as authors, know less about them and we, as a society, are less able to change them through direct public policy initiatives.

A substantial portion of this book, then, is a detailed review of the recent and current work of a select group of social scientists. We discuss how views about the retirement decision have changed and where we now stand. In the second part of the book we describe some shortcomings of this research and point out one direction that we think future research should take.

Most of the retirement literature focuses on who retires, when, and why. Retirement is usually modeled as a dichotomous concept—an
individual is either retired or not. Definitions of retirement vary greatly. Some researchers use labor force participation and label as retired only those who are completely out of the labor force. Others base their definitions on the receipt of Social Security or employer pension benefits, regardless of the recipient’s labor force status. To others, retirement means a substantial and discontinuous drop in earnings or hours worked. Finally, some analysts rely on subjective self-descriptions by individuals themselves. Most researchers, however, use whatever definition they adopt to classify people into two or sometimes three categories and then analyze the determinants of their retirement status.

A major theme of this book is that these traditional classifications are inadequate to describe the wide variety of labor market changes that older Americans are making. Although the abrupt transition from full-time work to complete labor force withdrawal (traditional retirement) is still the most common occurrence, many older workers are utilizing intermediate steps between the two. Some first reduce their hours of work to part-time status. Others leave a career job and then start on another, either full or part time. Sometimes this new job is in the same industry and occupation, but more often it represents a new line of work altogether. Still others decide to retire completely, but then change their minds and return to work.

Because of these diverse exit routes, the word “retirement” may well conceal more than it reveals. There are too many variations for one word to describe. The different definitions of retirement lead to confusion and seemingly contradictory research results. Our approach is not to pose the question in terms of retirement, but rather to ask how and when people leave their career jobs and what they do afterwards.

Career jobs are a very important part of most Americans’ lives. Many workers spend a substantial number of years on a single job. It is the transition from this job that we will study. If this exit were to take place at age 45, few would call it retirement. The behavioral patterns of many older workers suggest the same thing—that much of what we observe does not look like the traditional concept of retirement.

In the remainder of this chapter, we discuss the growth of our Social Security and pension systems in the postwar period and the simultaneous
changes in the employment behavior of older Americans. We document the changes in the labor force participation rates of older men and women. We also discuss patterns in full-time and part-time work and changes in the importance of self-employment. Finally, we document the importance of career jobs in America in order to motivate the approach we have chosen to take.

Growth of Social Security and Private Pension Plans

In 1935, the Social Security Act was passed to provide compulsory retirement insurance for workers in commerce and industry—about two-thirds of the workforce in those days. It was financed by a flat rate payroll tax of 1 percent, paid by both employees and employers on the first $3,000 of annual earnings. The act also mandated federal participation in the state-run old-age assistance, aid to dependent children, and unemployment insurance systems.

The American Social Security system grew directly out of the experiences of the Great Depression, when more than a quarter of the labor force was officially out of work. Many of its features were borrowed from older systems in Europe. The program is government run and mandatory for most workers. The benefits are earnings-related (and weighted in favor of lower income workers) and financed by specifically earmarked contributions. Benefits are paid as a matter of right, and there is no means or overall income test.

Much of the motivation for retirement insurance in 1935 was to permit older workers to leave the labor force and thereby to create job opportunities for the younger unemployed. For this reason, Social Security payment criteria included an earnings or retirement test. The original legislation eliminated the entire monthly benefit for anyone with any "covered wages from regular employment" (Schulz 1988). This was soon replaced by a modest monthly disregard ($15), which retirees could earn without loss of benefits. Today, as we will see, the rules are more complex, but the earnings-test philosophy remains intact.

Over the subsequent half century, this social insurance system has grown in both scope and coverage, much of which was anticipated by the
founders (Ball 1988). In 1939, the survivors’ and dependents’ programs were added. Disability insurance, which had been discussed in the 1930s, was introduced in 1956, and health insurance (Medicare) followed in 1965. Over these same years, compulsory coverage was extended to regularly employed farm and domestic workers (1950), the self-employed (1950 through 1965), members of the armed services (1956), the clergy (1967), and newly hired federal employees (1984). State and local government employees may enroll if both the employer and a majority of the employees agree. Mandatory coverage now includes 91 percent of all workers (Ycas and Grad 1987). Over 96 percent of all wage and salary disbursements are covered by Social Security or by analogous railroad or federal and state civil service programs.

At the same time that coverage was being extended, eligibility rules were being liberalized. Beginning in 1956 for women and 1961 for men, insured workers could claim retirement benefits at age 62. (Monthly payments were reduced by about 7 percent for each year they were claimed prior to age 65.) Benefit calculation rules were adjusted frequently after 1950, usually to reflect recent changes in the cost of living. In the late 1960s and early 1970s, following a decade of economic growth, a series of benefit increases was passed that far exceeded the recent inflationary experience, resulting in large real increments. These increases were then frozen in place by the introduction of automatic cost-of-living adjustments in 1975.

In the years since its initial passage, the Social Security program has grown dramatically, both in absolute terms and relative to the overall economy. Social Security payments are now the single most important source of income to aged households, providing over a third of their money income in 1987. For those in the lowest income quintile, the proportion is about 80 percent (Grad 1989). Table 1.1 provides some summary statistics, at five-year intervals, on the retirement, disability, and survivors components of Social Security (OASDI).

In constant (1989) dollars, annual expenditures have grown from about $5 billion in 1950 to over $235 billion today. The benefits are distributed to nearly 40 million Americans. The initial surges of the program, as it matured, can be seen in the real annual growth rates (averaged over
<table>
<thead>
<tr>
<th>Year</th>
<th>OASDI expenditure (current $$)</th>
<th>OASDI/GNP (percent)</th>
<th>OASDI/federal expenditure (percent)</th>
<th>OASDI expenditure (1989 $$)</th>
<th>Annual real growth rate previous 5 years (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>0.06</td>
<td>0.06</td>
<td>0.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1945</td>
<td>0.3</td>
<td>0.14</td>
<td>0.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1950</td>
<td>1.0</td>
<td>0.35</td>
<td>2.4</td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td>1955</td>
<td>5.1</td>
<td>1.25</td>
<td>7.4</td>
<td>23.5</td>
<td>35</td>
</tr>
<tr>
<td>1960</td>
<td>11.8</td>
<td>2.3</td>
<td>12.8</td>
<td>49.4</td>
<td>16</td>
</tr>
<tr>
<td>1965</td>
<td>19.2</td>
<td>2.7</td>
<td>16.2</td>
<td>75.5</td>
<td>9</td>
</tr>
<tr>
<td>1970</td>
<td>33.1</td>
<td>3.3</td>
<td>16.9</td>
<td>105.8</td>
<td>7</td>
</tr>
<tr>
<td>1975</td>
<td>69.2</td>
<td>4.3</td>
<td>20.8</td>
<td>159.5</td>
<td>9</td>
</tr>
<tr>
<td>1980</td>
<td>123.6</td>
<td>4.5</td>
<td>20.9</td>
<td>185.9</td>
<td>3</td>
</tr>
<tr>
<td>1985</td>
<td>190.6</td>
<td>4.7</td>
<td>20.1</td>
<td>219.7</td>
<td>3</td>
</tr>
<tr>
<td>1989</td>
<td>236.2</td>
<td>4.5</td>
<td>20.7</td>
<td>236.2</td>
<td>2a</td>
</tr>
</tbody>
</table>


a. Growth rate over the previous 4 years.
five-year periods) in the last column. In the early 1950s, real expenditures were growing at 35 percent per year as the coverage of the program expanded and disability insurance was introduced. The real annual growth rate then dropped to about 9 percent in the 1960s and early 1970s, and to about 3 percent, and recently 2 percent, since then. But even until very recently, this has been faster than the economy has grown, as can be seen in the third column. The retirement, survivors, and disability expenditures of the Social Security system have grown to equal 4.5 percent of the gross national product, and over 20 percent of all federal government expenditures.\textsuperscript{13}

Social Security is a major institution in the United States. Nearly all workers are covered by it or by an analogous public program, and nearly all are eligible for retirement benefits when they reach age 62. The system transfers a quarter of a trillion dollars annually (excluding Medicare) from contributors to beneficiaries. As we will see below, it does so with some very interesting incentives that penalize workers who remain in the labor force too long.

Concurrent with this growth of Social Security has been the development of the private pension system in the United States. Summary statistics for the past four decades are shown in table 1.2.

Since 1950, the number of private pension plans in the United States increased from about 12,000 to well over 800,000, while the proportion of the wage and salary population covered by a private pension plan doubled from a quarter to a half.\textsuperscript{14} Coverage of state and local government employees increased from 60 to 90 percent (Kotlikoff and Smith 1983). Most of this growth in coverage occurred in the 1950s and 1960s; the coverage ratio has increased only modestly since then. Since 1950, real private pension assets increased 25-fold, from 80 billion to almost two trillion dollars (in 1987). Private pensions now own over a quarter of the corporate and foreign bonds and a sixth of the corporate equities held by pensions, households, and other institutions in the United States (Turner and Beller 1989).

Because pension members do not receive benefits until the end of their work careers, the recipient statistics lag behind the coverage numbers. The number of pension benefit recipients has continued to
### Table 1.2
Summary Statistics
Private Pension Plans

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of pension plans (000)</th>
<th>Percentage of workers covered</th>
<th>Private pension recipients/population 65+ (percent)</th>
<th>Private pension assets (1989 $ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K&amp;S&lt;sup&gt;a&lt;/sup&gt;</td>
<td>T&amp;B&lt;sup&gt;b&lt;/sup&gt;</td>
<td>K&amp;S&lt;sup&gt;c&lt;/sup&gt;</td>
<td>T&amp;B&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>1950</td>
<td>12&lt;sup&gt;g&lt;/sup&gt;</td>
<td>24</td>
<td>16</td>
<td>79</td>
</tr>
<tr>
<td>1955</td>
<td>28</td>
<td>32</td>
<td>166</td>
<td></td>
</tr>
<tr>
<td>1960</td>
<td>64</td>
<td>40</td>
<td>286</td>
<td></td>
</tr>
<tr>
<td>1965</td>
<td>115</td>
<td>42</td>
<td>483</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>226</td>
<td>45</td>
<td>42</td>
<td>16</td>
</tr>
<tr>
<td>1975</td>
<td>441</td>
<td>340</td>
<td>49</td>
<td>43</td>
</tr>
<tr>
<td>1980</td>
<td>617</td>
<td>590</td>
<td>49&lt;sup&gt;h&lt;/sup&gt;</td>
<td>44</td>
</tr>
<tr>
<td>1985</td>
<td>805</td>
<td>45</td>
<td>28</td>
<td>1681</td>
</tr>
<tr>
<td>1986</td>
<td>846</td>
<td>45</td>
<td>29</td>
<td>1875</td>
</tr>
<tr>
<td>1987</td>
<td>870</td>
<td>---</td>
<td>---</td>
<td>1956</td>
</tr>
</tbody>
</table>

---

<sup>a</sup> Kotlikoff and Smith (1983, table 4.1.1).
<sup>b</sup> Turner and Beller (1989, table A.3).
<sup>c</sup> Kotlikoff and Smith (1983, table 3.1.2 [wage and salary workers only]).
<sup>d</sup> Turner and Beller (1989, table 13.2 [all private sector workers]).
<sup>e</sup> Turner and Beller (1989, table 13.4).
<sup>f</sup> Turner and Beller (1989, table 6.2).
<sup>g</sup> Data for 1949.
<sup>h</sup> Data for 1979.
increase up to the present. In 1986, nearly 30 percent of Americans aged 65 and over received a benefit from a private pension plan. The average annual amount was about $5,000 (Turner and Beller 1989). In 1987, pension benefits constituted about a sixth of all the cash income of households with a head aged 65 or over (Social Security Bulletin Annual Statistical Supplement, 1988).

Private pension plans are of two basic types. In *defined benefit* plans, the employer promises to pay a particular benefit, with the amount determined by an agreed-upon formula, usually based on some combination of earnings (often over the last few years of work) and years of service and age at retirement. In *defined contribution* plans, the employer makes an annual contribution to a retirement account for the worker. These funds are then invested and form the basis for benefits at retirement. The size of the benefit depends on the size of the annual contributions, but also on the performance of the fund over the years. As we will see below, the retirement incentives that economists have emphasized occur primarily in the defined benefit plans.

A new book on American pensions by John Turner and Daniel Beller (1989) documents recent trends in the coverage and composition of these plans. Between 1975 and 1985, the total number of plans more than doubled, and the number of active participants increased by about 60 percent. Despite this growth, there was almost no change in the proportion of the working population with pension coverage. This is because of growth in the labor force and because, as seen in table 1.3, about two-thirds of the growth in participants stemmed from supplementary coverage. Supplemental pensions, such as profit sharing and employee stock ownership plans, provided additional benefits to workers already covered by a primary plan. Between 1975 and 1987, the number of workers participating in two or more plans increased from 21 to 40 percent.

Most pension plans in America are small, covering fewer than 100 workers. But these small plans include only about one in 10 covered workers. In 1985, the 6 percent of the plans with 100 or more workers covered 88 percent of all participants.
### Table 1.3
Characteristics of Private Pension Plans and Participants, 1975 and 1985

<table>
<thead>
<tr>
<th></th>
<th>Number of plans (000)</th>
<th>Number of active participants (000,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fewer than 100 participants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 or more participants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defined benefit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defined contribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defined benefit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defined contribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplemental plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defined benefit</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>Defined contribution</td>
<td>45</td>
<td>100%</td>
</tr>
</tbody>
</table>

SOURCE: Turner and Beller (1989, tables 4-11 and 4-12).

a. Less than 0.5.
In primary pensions, defined benefit plans still dominate, covering over 70 percent of all participants in 1985. But this proportion has fallen significantly. The proportion of participants whose primary coverage was in a defined contribution plan increased from 13 to 29 percent between 1975 and 1985. And virtually all of the supplementary coverage (which is growing more quickly) is defined contribution. Overall, the proportion of active participants (double counting those with more than one plan) in defined benefit plans fell from 71 to 47 percent by 1985.

As we will see next, the dramatic growth of the Social Security and private pension systems coincided with a significant decrease in the labor force participation rates of older American men. There are several reasons for believing that these trends are related. While the Social Security system was maturing, the demographic structure of the population permitted the relatively small number of recipients to receive benefits that far exceeded, in an actuarial sense, the current value of the contributions they had made. These intergenerational transfers were financed by the relatively large number of Social Security contributors and resulted in a net increase in the wealth of older Americans. At the same time, real wages were rising, pension rights were accumulating and home equity was increasing in value. Older Americans reached normal retirement age wealthier than had earlier generations. According to economic theory, this should increase their demand for leisure and, among other things, result in earlier retirement.

In addition to this income or wealth effect, however, is a substitution effect. The benefit calculation rules of both Social Security and many private pension schemes alter the compensation patterns of older workers over time, and therefore change the terms of the tradeoff between work and leisure. At some ages, the rules subsidize work and provide a wage supplement. At other ages, they penalize continued employment by imposing a subtle pay cut. Much of the recent research that we discuss below focuses on understanding the nature and magnitude of the financial incentives that are embedded in these retirement systems. It strongly suggests that the growth of Social Security and employer pensions and the trend toward early retirement are related. There remains considerable disagreement, however, on the size of the effects that these incentives
have had and on their importance in explaining aggregate retirement trends.

**Trends in Employment Among Older Americans**

Much of the research interest in the retirement decision stems from the dramatic changes that have occurred in the employment patterns of older American workers during the past 50 years. Among these changes are decreases in the labor force participation rates of older men, a movement from wage and salary work to self-employment, and increases in the importance of part-time employment late in the work career.

**Labor Force Participation Rates**

*Historical Data*

It is well-known that American men are leaving the labor force much earlier than they did in the past. We will document recent trends below. What is less well-known is how long these changes have been underway; in particular, whether they began prior to the growth and development of our Social Security and pension systems.

According to the conventional wisdom, employment rates among older Americans were high as recently as the late nineteenth century, but have been dropping steadily since then. Official data originally reported by the Social Security Administration show rates of "gainful occupation" among men aged 65 and over exceeding 80 percent in 1870 and dropping to below 60 percent by 1930 (Ransom and Sutch 1986). The current labor force participation rate for this group is now about 17 percent. A graph of these long-run trends (ibid.) suggests a very steady decline over the past 110 years, from a time when retirement was extremely rare, and over 80 percent of older American men continued to work, to one today in which the proportions are almost exactly reversed. In this scenario, Social Security and employer pensions could not have started the movement toward earlier retirement, since it had
been underway for at least 50 years prior to their development. At most they might have accelerated a trend with roots much older than their own.

Recent work by Roger Ransom and Richard Sutch (1986, 1988), however, casts doubt on the accuracy of this generally accepted story. Their evidence indicates that there was virtually no change in retirement rates among American men from 1870 to 1937 and, therefore, that nearly all of the change in retirement patterns has occurred during the past 50 years, after the inception of Social Security and the dramatic growth of private pensions.

Ransom and Sutch's findings follow from two assertions: that the definition of occupation changed significantly in 1890 (and later changed back), and that the "official" statistics for 1870 and 1880 were actually based on a backwards extrapolation of trends between 1890 and 1910.  

Before 1890, persons were defined as "productively occupied" if they were "earning money regularly by labor . . . or appreciably assisting in mechanical or agricultural industry" (Ransom and Sutch 1986). This is very similar to what we now mean by labor force participation. In 1890, however, the Census Bureau dropped the definition based on active participation in production and adopted one based on sources of income. Persons whose income came from property holdings were classified as employed landlords; those with income from stock dividends or bond interest were listed as employed capitalists. Many of those individuals would have been defined as out of the labor force and retired prior to 1890, as they would again today. When Ransom and Sutch recalculated the statistics for men aged 60 and over, using a consistent definition of employment, they found labor force participation rates of 64 percent in 1870 and 1880, 66 percent in 1900, 64 percent in 1930, and 61 percent in 1937 (ibid.).

These numbers are much lower than the old official statistics, which estimated that over 80 percent of those over 65 were working in 1870. In addition, the new numbers are virtually constant between 1870 (or at least 1900) and 1937. Since then, however, the participation rate for
men over 60 has dropped precipitously, to 55 percent in 1950, 45 percent in 1960, 40 percent in 1970, and under 28 percent today. It is during the postwar period, then, when most of the action has occurred.

The long-term trend for women is very different. According to Golden (1989), participation rates for married women increased sevenfold since 1920. Despite this, average years of work experience among employed married women remained almost unchanged, since the new entrants were women with very little experience, who kept the average down.

Current Data

Monthly Current Population Survey reports allow calculation of the labor force participation rates of specific demographic groups. In figures 1.1 and 1.2, we illustrate recent trends for older men and women in four age categories, from 1964 to 1989. The decline for all four groups of older men is clear.20

For the youngest group shown—men aged 55–59—the participation has dropped over 10 points, from over 90 to less than 80 percent. The next group is particularly interesting, since the age of earliest eligibility for Social Security benefits was lowered from 65 to 62 for men in 1961 (as it had been for women in 1956). Partly in response to this change and the growing availability of early retirement options in private pensions, the participation rate of men aged 60–64 has plummeted over those 25 years, from almost 80 to 55 percent. For men 65–69, the rate remained steady through the early 1970s and then decreased by nearly 20 points. It is interesting to note that substantial increases in real Social Security benefits (on the order of 50 percent) occurred over a five-year period beginning in 1969. The 1970s were also a decade of very poor economic growth. Both of these factors may have hastened the trend already underway. Similarly, the economic recovery in the mid-1980s may be responsible for the recent slight upturn for this group. Finally, the oldest group, men aged 70 and over, has followed the same general pattern, although more dramatically in percentage terms. Their participation rate has fallen by almost half, from 20 to 11 percent, over the past 25 years.
Figure 1.1

Figure 1.2

The trends for older women reflect two major demographic phenomena—the decreased participation of older workers and the increased participation of women, particularly married women. For the youngest group shown, aged 55–59, the latter effect dominates, and the rate has risen slightly and now is 55 percent. For those 60–64, there is very little change observed. For the older two groups, a small decline is noted. For all age categories, the participation rates are lower for women than men, with the ratio of female to male rates dropping with age.

The Department of Labor has unpublished data on labor force participation rates by individual ages. Since some of the financial incentives take effect at specific ages, these data are particularly interesting. Figure 1.3 shows the trends from 1968 to 1989, for men aged 55, 60, 62, 65, and 70. All five lines drift downward over time, but the decreases are most dramatic for those aged 62 and 65. Note also the acceleration of the decline during the 1970s. Figure 1.4 illustrates the same detail for men of each age between 60 and 65. The same overall patterns are observed, as well as the sharp differences between ages 61 and 62 (the age of earliest eligibility for Social Security benefits) and between 64 and 65 (the age of full eligibility).

Both trends, over age and over time, can be seen at the same time in figure 1.5, in which we observe four cohorts of men—those aged 55 in 1968, 1973, 1978, and 1983—and follow each group through 1989. If we ignore the multiple bars at each age, the overall macro picture shows the well-known movement out of the labor market with age. The rate of exit accelerates as people move into their 60s, with particularly large decreases at ages 62 and 65. There is also a smaller, but still substantial, drop of about five points at age 60, when many pension enrollees become eligible.

The micro picture, holding age constant, is equally interesting. For nearly every single age in figure 1.5, the male participation rates decline with each successive cohort. The decreases after age 60, especially at age 62, are particularly large. This is the well-documented movement toward earlier retirement over time.
Figure 1.3

SOURCE: Department of Labor unpublished statistics.
Figure 1.4

SOURCE: Department of Labor unpublished statistics.
Figure 1.5
Male Labor Force Participation Rates by Cohort and by Age

SOURCE: Department of Labor unpublished statistics.
The macro scenario for women is similar, as seen in figure 1.6. Fewer women work at older ages. But the micro story—the record over time—is different. Successive cohorts are not retiring earlier. The pattern is much more irregular, and for many ages participation rates are on the rise.

Although the movement toward earlier retirement for men is most dramatic after age 60, it is by no means confined to those ages. Figure 1.7 charts the absolute and percentage declines in the participation rates of men between 1968 and 1989, for each age between 55 and 70. The largest absolute declines are indeed found between ages 62 and 65, which certainly suggests a role for Social Security in this drama. But in percentage terms, the size of the declines stays high after age 65—the age at which the Social Security reward for continued work decreases dramatically, as we will see below. The participation rate for men aged 62 in 1989 was a third lower than it was for men that age only two decades earlier. But at ages 65 and 68 it was over 40 percent below the 1968 figures.

Figure 1.7 also shows that the decrease in labor force activity starts long before eligibility for Social Security retirement benefits. The declines are substantial at age 60 (where a 17 percent decline in participation rates over these two decades is observed) and even at age 55 (where the decline is 9 percent).

The summary story, then, is one of a significant decline over time in the labor force participation of older men and a relative decline for older women, when compared to patterns of younger women. At several ages important for Social Security and pension eligibility, the declines are particularly large. Accompanying these statistics, however, are several other interesting and relevant trends.

**Trends in Part-Time Employment**

Not only are older Americans retiring earlier than they used to, but those who remain employed are more likely to be working part time. The proportion working part time (fewer than 35 hours per week) increases dramatically at age 65. Table 1.4 shows the distribution for persons at work in nonagricultural industries during 1989.
Figure 1.6
Female Labor Force Participation Rates by Cohort and by Age

SOURCE: Department of Labor unpublished statistics.
Figure 1.7
Decrease in Male Labor Force Participation Rates
1968–1989, by Age

Absolute Decline
(percentage points)

Percentage Decline
(percent)

SOURCE: Department of Labor unpublished statistics.
There is very little difference here between men aged 25–44 and those aged 45–64. Part-time work is rare. Only about 6 percent are employed part time and half of those are doing so involuntarily. But at age 65, the proportion working part time rises from 6 to 48 percent, and almost all of it is voluntary. Among the women, part-time work is more common, but the age pattern is the same—about 20 percent of those under age 65 (most of them volunteers) and almost 60 percent of those 65 and over.²⁵

Over the past two decades, there has been only a modest increase in the proportion of the total workforce employed part time. As can be seen in figure 1.8, part-time workers (voluntary and for economic reasons) represented about 15 percent of the employed population in the late 1960s, when these statistics began. By 1989, the percentage had risen by only three points. When one looks only at the voluntary part time, there is even less trend, from 12 (in 1967) to 14 percent (in 1989) of those at work. Among the elderly, on the other hand, there has been significant growth in part-time employment (figures 1.9 and 1.10). The proportion of men 65 and over working fewer than 35 hours per week has increased from 35 to 48 percent over the past 20 years, an increase of nearly a third. Among older women, the proportion has risen from 50 to 58 percent. In both cases, almost all of the increase has occurred among those working reduced hours voluntarily.

Despite a fairly constant percentage of part-time work in the economy as a whole, then, the significance of voluntarily reduced hours has grown among older workers. In our empirical work below, we will pay particular attention to the importance of part-time work, since this is one logical way for individuals to ease out of the labor force. We will see that it is, in fact, a popular route of labor force withdrawal, most often on a new job for wage and salary workers, and most often on the career job for the self-employed. These transitions are ignored in labor force participation statistics and overlooked in studies that treat the retirement decision as dichotomous.
### Table 1.4
Full-Time and Part-Time Status
Persons at Work in Nonagricultural Industries, 1989
(horizontal percentage)

<table>
<thead>
<tr>
<th>Group</th>
<th>Total at work (000)</th>
<th>Employed full time</th>
<th>Part time for economic reasons</th>
<th>Voluntary part time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25–44</td>
<td>32,450</td>
<td>95%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>45–64</td>
<td>15,466</td>
<td>93%</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>65+</td>
<td>1,582</td>
<td>52%</td>
<td>4%</td>
<td>44%</td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25–44</td>
<td>26,459</td>
<td>79%</td>
<td>5%</td>
<td>17%</td>
</tr>
<tr>
<td>45–64</td>
<td>12,509</td>
<td>76%</td>
<td>5%</td>
<td>19%</td>
</tr>
<tr>
<td>65+</td>
<td>1,232</td>
<td>41%</td>
<td>5%</td>
<td>53%</td>
</tr>
</tbody>
</table>

**SOURCE:** *Employment and Earnings* (January 1990, table 33).
Figure 1.8
Full-Time/Part-Time Status, All Nonagricultural Workers, 1968–1989

Percent


Year

■ Full-time  □ Part-time - voluntary  □ Part-time - economic

Figure 1.9
Full-Time/Part-Time Status, Men, Aged 65 and Over in Nonagricultural Industries, 1968–1989

Figure 1.10

Trends in Self-Employment

Older workers are also disproportionately represented among the self-employed. As shown in figures 1.11 and 1.12, the proportion of nonagricultural workers who are self-employed rises monotonically with age—from 1 percent (age 16–19) to 24 percent (65+) for men, and from 1 to 14 percent for women. In both groups, there is a large discontinuous jump between the last two age categories. Men and women aged 65 and over are 50 percent more likely to be self-employed than are workers aged 55–64, and almost three times as likely as the general population.

According to Eugene Becker (1984), the number of the nonagricultural self-employed has increased every year since 1970, rising by 45 percent between 1970 and 1983. At the same time, agricultural self-employment has been relatively constant, resulting in a steady increase in the total number of self-employed. David Blau (1987) argued that these official statistics underestimate the size of the self-employed population.

Beginning in 1967, the Census Bureau reclassified incorporated self-employed workers as wage and salary workers, since technically they were employed by their companies, not by themselves. According to Blau, they are much more like the self-employed than they are like other wage and salary workers. Using data published sporadically in the Monthly Labor Review, he pieced together an adjusted series and found that the proportion of men self-employed has risen from a low of about 10 percent in the early 1970s to near 12 percent by 1982. Over the same time period, the female self-employment rate increased from 5 to 7 percent. His empirical work suggested that this recent trend is partially due to changes in tax laws and Social Security retirement benefits.

New data from the Survey of Income and Program Participation confirm that the undercount is substantial. Sheldon Haber, Enrique Lamas, and Jules Lichtenstein (1987) included the incorporated self-employed and those who report self-employment as a secondary activity, and estimated that the percentage of workers who owned businesses was 60 to 75 percent higher than the official self-employed statistics.
Figure 1.11
Percent Self-Employed Men
in Nonagricultural Industries, by Age, 1989

Figure 1.12
Percent Self-Employed
Women in Nonagricultural Industries, by Age, 1989

The high incidence of self-employment among older workers could represent a cohort effect—the fact that these men and women began their employment experiences at a time when self-employment was more common than it is today. But this would hardly explain the discrepancy between the last two groups, born within a decade of each other. This difference must be due to two other explanations: self-employed may retire later than others, or some wage and salary workers may turn to self-employment late in life as an avenue of partial or phased retirement. Joseph Quinn (1980, 1981) found some evidence for both of these hypotheses in some early cross-sectional work with the Retirement History Study. Victor Fuchs (1982), using three waves of RHS data, confirmed them both. With the full 10 years of data now available, we will analyze the behavior of wage and salary and self-employed workers separately, and show that their retirement patterns are very different indeed.

The Importance of Career Jobs

Recent research has shown that most American men spend a considerable proportion of their work lives on long-term career jobs. This is true despite the fact that the median job tenure in the United States is quite short (3.6 years in 1978, according to Robert Hall [1982]) and completed job tenure of jobs ending at any given time is also very modest (3.9 and 2.8 years for whites and nonwhites in the early 1970s, according to George Akerlof and Brian Main [1981]). Because our research focuses on exit patterns from career jobs, it is important that we establish the importance of the career phenomenon and understand and explain the seeming contradictions above.

Research on job tenure is complicated by two issues—the distinction between current and eventual tenure and the difference between the average job and the average person on a job. The first is straightforward. Tenure on a current job is, by definition, incomplete and will eventually be longer than it now is. For example, a young person who has been in the labor market for only five years could have at most
five years of tenure on the job, even if lifetime employment were the rule. The fact that there are many young workers in the labor market is largely responsible for Hall’s median tenure of less than four years. When he looked at the current tenure of older workers (aged 55 and older), he found that one-third of them were in jobs of at least 20 years duration.

But even this figure is misleading. Some of these workers may have recently left jobs of longer duration. When we look at the longest (as opposed to the current) job of our Retirement History Study sample (aged 58-63 in 1969), we find that over half of the men and over a quarter of the women had a job that lasted at least 20 years. As seen in table 1.5, nearly a third of the men had held, or were then holding, jobs of 30 or more years duration, and nearly 80 percent had at least 10 years experience on their longest job.

Even these estimates are lower bounds, since a few of these older workers were still employed on their longest jobs, therefore adding to tenure when they disappeared from the sample or when the surveys ended in 1979. Hall uses statistical techniques to forecast the eventual tenure of his sample of men employed in 1978, and estimates that about half of those aged 40 or more were on jobs that would last at least 20 years.

With later data from the 1979 Current Population Survey, John Addison and Alberto Castro (1987) confirmed Hall’s findings that many workers enjoy long-term employment—20 or more years with the same firm. They also found that this is more likely to be true among union than among nonunion employees.

With some new data from a supplement to the 1987 Current Population Survey, Max Carey (1988) estimated occupational tenure for the American workforce. This is defined as cumulative years in an occupation, regardless of changes of employers or other interruptions, and therefore is not directly comparable to the estimates above. Carey found that current median occupational tenure for older male workers ranged from 20 years for those aged 50-54 to 31 years for those 70 and over. There was link between this and tenure with a specific employer. Of those with occupational tenure of 25 years or more, nearly half had
### Table 1.5
**Job Tenure on Longest Job**

<table>
<thead>
<tr>
<th>Number</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHS sample in 1969</td>
<td>8,131</td>
<td>3,021</td>
</tr>
<tr>
<td>-those without longest job data</td>
<td>-313</td>
<td>-353</td>
</tr>
<tr>
<td>Those with longest job data</td>
<td>7,818</td>
<td>2,668</td>
</tr>
</tbody>
</table>

#### Tenure on longest job

<table>
<thead>
<tr>
<th></th>
<th>Men (%)</th>
<th>Women (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 years</td>
<td>12%</td>
<td>29%</td>
</tr>
<tr>
<td>5-9 years</td>
<td>10%</td>
<td>15%</td>
</tr>
<tr>
<td>10-19 years</td>
<td>23%</td>
<td>27%</td>
</tr>
<tr>
<td>20-29 years</td>
<td>24%</td>
<td>17%</td>
</tr>
<tr>
<td>30-39 years</td>
<td>18%</td>
<td>6%</td>
</tr>
<tr>
<td>40 or more years</td>
<td>13%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

#### Labor force status in 1969

<table>
<thead>
<tr>
<th></th>
<th>Men (%)</th>
<th>Women (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not employed</td>
<td>19%</td>
<td>39%</td>
</tr>
<tr>
<td>Employed on longest job</td>
<td>63%</td>
<td>50%</td>
</tr>
<tr>
<td>Employed on another job</td>
<td>18%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**SOURCE:** Retirement History Study.
more than 25 years of tenure with their current employer and another quarter had 10 to 24 years.

Akerlof and Main (1981) cleared up another source of confusion. Although the length of the average job is very short, the average employee is on a job of long duration. The problem is that the "average job" statistic counts each job equally, despite the fact that some last much longer than others. A tenure-weighted measure gives quite a different picture.26

Akerlof and Main estimated the eventual completed tenure of persons employed in 1963, 1966, 1968, and 1973, and then calculated the mean tenure over these persons. They found that the average completed tenure was long (about 17 or 18 years for men, and 11 or 12 years for women) and that it changed very little over the 10-year period under study. For those aged 56 through 59, the average duration of individuals' longest jobs was over 20 years.

A career job of long duration is an important phenomenon in America. The departure from this job is therefore a significant event. It is this departure that we have studied. We will see that while many workers do leave full-time work for full-time leisure—the traditional form of retirement—many others embark on new and different careers late in life.

Outline of the Book

In the next two chapters, we review the research of selected authors who have studied the determinants of the retirement decision. We begin with the research of the Social Security Administration during the late 1930s and proceed to the present. We will see that both the research methodologies and the conclusions have changed considerably over time. The methodology has evolved from questionnaires that simply asked people why they retired when they did, to complex econometric models that draw deductions not from what people say but from what they do. The overwhelming dominance of health factors has given way to a more complex understanding of the financial environment in which retirement decisions are made. The division between chapters 2 and 3 is
chronological and therefore somewhat arbitrary. In the latter chapter, which begins in the early 1980s, we describe the current state-of-the-art in retirement research.

In chapter 4, we utilize a life-cycle model to look at factors earlier in a worker's career—long before retirement. If the economic incentives embedded in our retirement systems affect labor supply behavior late in life, as considerable research suggests they do, then they may do so earlier in the work career as well. We discuss current research on the impact of pensions on labor mobility and conclude that pensions—and to some extent Social Security—are designed to make sure that workers do not stay on the job too long (the retirement issue), but also that they do not leave too early (the mobility issue).

Chapters 5 and 6 document how a sample of older American workers actually chose to withdraw from their career jobs. We find interesting and diverse patterns. Chapter 5 provides an overview of the relatively slim literature on partial retirement and then describes the actual exit patterns of our sample. Chapter 6 discusses some simple correlates of the transitions observed and compares the new jobs with the career jobs of those who changed employment late in life.

A major theme of this book is that the public policy decisions that society has made in constructing our Social Security and employer pension systems affect work behavior throughout the life cycle—before, during, and after retirement. The organization of the book can be viewed in this way. After the introductory chapter, we focus on the retirement decision—the transition from the career job. This is when the interactions between retirement income programs and labor supply decisions are most obvious. This is also the topic of the bulk of the research. We then look earlier—prior to retirement—and ask how these financial incentives might influence younger workers. Finally we discuss the end of the life cycle—work after retirement and second careers. In the final chapter, we summarize what we have learned and look ahead to what we might expect in the future.
NOTES

1. Similar changes in the age distribution will be occurring in most other OECD nations as well (OECD 1988, chapter 2 and tables A.1 and A.2).

These forecasts use baseline mortality forecasts, in which increases in life expectancy are assumed to be modest compared to those over the past decade. When more optimistic, low mortality assumptions are used (an additional 10 years of life expectancy at age 60 by the year 2030), the growth of the proportion over 64 is much more dramatic; for example it climbs to 29 percent of the U.S. population by 2050 (ibid., table 7).

With a slight lag, the proportion aged 80 and above will increase significantly, from less than 3 percent of the population today to 6 percent by 2050 (and to 16 percent under the low mortality assumption (ibid.)).

These long-range population projections are very sensitive to the assumptions behind them. Guralnick, Yanagishita, and Schneider (1989) argue that the baseline Census projections are overly pessimistic with respect to mortality. Assuming a decline in mortality of 2 percent per year, they project that a quarter of all Americans will be aged 65 and over by the year 2040, and that the number of those aged 85 and over will increase 10-fold.

2. The early retirement trend, especially among older men, is common throughout Western Europe and North America. See Mirkin (1987) and OECD (1988) for details and some analysis.

3. Mirkin (1987) argues that one motivation for the many early retirement schemes that exist in Western developed nations was to soak up the excess labor supply that developed during the stagflation of the 1970s. These plans have now become institutionalized, and will work against societal interests if labor markets turn around and workers are in short supply.

4. Much of the short-run problem was due to an error in the benefit calculation formula. As of 1972, both the average monthly earnings (the input into the benefit calculation formula) and the formula itself were adjusting to inflation, which meant that the final benefits were overadjusted. This flaw was eliminated by the 1977 amendments. For more detail, see the U.S. General Accounting Office report (1988). In addition to this problem, the 1970s were a decade of high unemployment and slow economic growth, both of which caused Social Security revenues to fall short of benefit payments.

5. In 1946, Frances Perkins, Secretary of Labor under President Roosevelt and one of the architects of the Social Security system, wrote "even with enlarged benefits to persons reaching retirement age in the next fifteen to twenty years, there would be ample funds (in the social security system) to meet all immediate payments out of immediate income. But by any proper actuarial estimate, there would be, in the end, an accumulated deficit. The reserves would not suffice to pay benefits when those now twenty became sixty-five and eligible for retirement. . . . Perhaps in 1980 it would be necessary for Congress to appropriate money to make up a deficit." (See Perkins 1946, p. 293.) Now that is a prediction!

6. These issues are discussed by Tobin (1988). A number of proposals for radical change in the Social Security system have emerged, and many are critiqued in a recent book of essays edited by Meyer (1987). Starr (1988) has also written on the appropriate mix of public and private provision of old-age income support, and Aaron, Bosworth, and Burtless (1989) have discussed some of the implications of privatization.

7. Parnes et al. (1985) have provided a detailed description and a selection of research findings from the NLS. An analogous volume for the RHS was edited by Irelan et al. (1976).
8. This stage of life is growing because people are leaving their career jobs earlier and living longer than ever before. Chapman, LaPlante, and Wilensky (1986) report that the life expectancy of older Americans has been growing significantly. Between 1968 and 1980, for example, the life expectancy of men and women aged 65 has increased by between one and two months per year, mostly because of declines in cardiovascular mortality. Older people are living longer. What this means for work patterns is less clear, because there is some evidence that, even as life expectancies increase, the health of the elderly is deteriorating. These two trends may well be related, if the clinical successes of modern medicine have been able to prolong the survival of the chronically ill. Ycas (1987) provides an excellent overview of these issues.

9. Ball (1988) has published an excellent and concise description of the fundamental principles and later developments of the American Social Security system.


11. In 1970, after the boom decade, nearly a quarter of those aged 65 and over were living in poverty, compared to only 11 percent of those less than 65, and 13 percent overall. Following these large Social Security increases, the elderly poverty level declined and today is less than the overall rate (Quinn 1987).

12. In 1987, Social Security provided 32 percent of the money income of multiperson families with householders aged 65 and over, and 44 percent for individuals 65 and over living alone or with nonrelatives only (Social Security Bulletin Annual Statistical Supplement, 1988, table 3.E3).

13. When the health insurance (Medicare) component is added, total (1989) OASDHI expenditures equal about 6 percent of GNP and over a quarter of total federal expenditures.

14. There are substantial differences in coverage by sex. In a study of new Social Security beneficiaries claiming benefits for the first time in 1982, Woods (1988) reported that only 27 percent of the women were receiving a pension, compared to 53 percent of the men. When those expecting to receive benefits in the future and those covered for potential survivor benefits were included, the coverage rate rose to 44 percent for women—about three-quarters of the comparable rate for men. In addition, the median monthly pension amount received by women was only about half that received by men.

15. According to a recent study by Ycas and Grad (1987), about a quarter of the aged units (couples and single individuals) received private pension income and 14 percent received government employee pensions in 1984. These percentages will continue to grow as new cohorts continue to retire. In 1982, for example, about half of all new Social Security beneficiaries (56 percent of the married and 42 percent of the unmarried) also received pension benefits.

16. The number of active participants in plans exceeds the number of people with pension coverage, because the former double counts those with more than one pension plan.

17. Gustman and Steinmeier (1989c) estimate that about half of the increase in primary defined contribution coverage (between 1977 and 1985) is due to employment shifts toward the types of firms historically unlikely to offer defined benefit plans, rather than firms actually changing the type of plan they offer.

18. Both Burkhauser and Warlick (1981) and Moffitt (1984) have written on the nature and size of these intergenerational transfers.

19. In a comment on the Ransom and Sutch research, Moen (1987) disputed the assertion that the definition of labor force participation changed between 1880 and 1890. Moen's reading of the instructions to the Census enumerators at the time suggests that a key Ransom and Sutch quotation refers only to the occupations of children, not adults. He also claims that Ransom and Sutch
arbitrarily excluded from the 1900 labor force those unemployed for more than six months, and that this is crucial for establishing a constant participation rate between 1870 and 1930. In a long response, Ransom and Sutch (1989) maintained that "[we] stand by our original (1900) estimate" [but] "are prepared to believe that the true labor force participation of men 60 and older was higher in 1870 and 1880 than the published census reported and higher than our benchmark estimate for 1900." Even if this is true, Ransom and Sutch have presented strong evidence that there was little change in the participation rates of older men between 1900 and 1937. What happened prior to that is of little relevance to our discussion.

20. Similar patterns are observed in most other OECD countries as well (OECD 1988).

21. A recent article by Shank (1988) documents the dramatic growth in female labor supply during the postwar period. The participation rate for women aged 25 to 54 more than doubled, from about three in 10 in 1946 to more than seven in 10 today. Department of Labor projections estimate that this will rise to eight in 10 by the year 2000. The age pattern of participation for women has also changed, from the historical M-shape (reflecting withdrawal during childbearing years) to the inverted U-shape characteristic of male participation. Currently, about two-thirds of women aged 25–54 with children under 18 are in the labor force, as are more than half of those with children under age three.

22. The absolute drop in the labor force participation rate at age 62 increases from 12 to 14, and then to 15 percentage points as we consider the first three of these successive cohorts—each five years apart. At age 65, the drops are 14, 13, and 8 percent for these cohorts.

23. Of course, the absolute changes will start to decline at some age because the initial (1968) participation rates become so small. For example, only 30 percent of men aged 70 (and 25 percent of those aged 72) were in the labor force in 1968. Even if none of the latter worked in 1989, the absolute decline would still be smaller than for those aged 63.

24. During the last two decades, the labor force participation rate of women aged 25–54 increased from 47 to 72 percent. For women 55–64, it was unchanged, and for those 65 and over it declined slightly. The combination of earlier retirement by men and steady participation by older women has significantly increased the female share of the older (55 and over) workforce, from two in 10 in 1950 to four in 10 today (Herz 1988).

25. See Herz (1988) for more detail on part-time and part-year work by women of different ages.

26. An analogy drawn from Bane and Ellwood (1986) may clarify the issue. Imagine a hospital with three beds, two dedicated to long-term care and one to overnight patients. Over a one-month period, each of the long-term beds has only one occupant, while the short-term bed has 30. Of the 32 total patients, 30 were admitted for only one day; hence, the average stay is very short. Yet, on any particular day during the month, two-thirds of the patients were on a spell of long-term hospitalization. The average patient on any day requires long-term care. From another perspective, of the 90 person-days of care during the month, 60 were long-term in nature.