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# Introduction

David A. Wise

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The Japan Center for Economic Research and the National Bureau of Economic Research have been engaged in joint projects on the economics of aging and related areas for several years. Two prior conference volumes reporting the results of these studies have been published: *Aging in the United States and Japan in 1994*, and *The Economic Effects of Aging in the United States and Japan in 1997*. This volume contains papers presented in Kyoto, Japan, in May 1997. The papers are focused on four topics: (a) saving, wealth, and asset allocation over the life cycle, (b) health care and health care reform, (c) incentives for early retirement, as well as labor market incentives over the working life, and (d) population projections. In all but the fourth category, papers from both Japan and the United States are included. While the papers in the volume from the two countries are not strictly comparable, when considering the larger body of evidence in Japan and the United States, the evidence from one country can be contrasted with similar evidence from the other. The following summary draws heavily on the wording of the authors themselves.

## **Saving, Wealth, and Asset Allocation**

### **In the United States**

As the retired population grows relative to the working population, the prospects for public financing of support in retirement have generated in-

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creasing public and private concern. Yet a large fraction of Americans depend almost entirely on Social Security for support in retirement, and most Americans now reaching retirement age have accumulated very little in personal saving. Others have accumulated substantial saving. Why do some households have substantial wealth at retirement while others have very little? Indeed, why do some households with given lifetime earnings have substantial wealth at retirement, while other households with the same lifetime earnings accumulate very little wealth? In their paper on “Choice, Chance, and Wealth Dispersion at Retirement,” Steven F. Venti and David A. Wise conclude that most of the dispersion in wealth, given similar lifetime earnings, must be attributed to the choice of whether to save at younger ages.

People accumulate different amounts of wealth in part because they have different earnings. We essentially set that dispersion aside by considering persons with similar lifetime earnings. Thus the discussion here is about the dispersion of asset accumulation among persons with the same lifetime earnings. Given lifetime earnings, Venti and Wise consider the importance of “chance” events versus the choice to save in determining asset accumulation.

Whether accumulated wealth is attributable to the choice to save rather than to chance can have significant implications for government policy. Many policies impose ex post taxes on accumulated assets. For example, elderly Americans who have saved when young and thus have higher capital incomes when older pay higher taxes on Social Security benefits. Shoven and Wise (1997, 1998) show that those who save too much in pension plans in particular face very large “success” tax penalties when pension benefits are withdrawn. In addition, pension assets left as a bequest can be virtually confiscated through the tax system. The spend-down Medicaid provision is another example. The belief—perhaps unstated—that chance events determine the dispersion in wealth may weigh in favor of such taxes in the legislative voting that imposes them.

If, on the other hand, the dispersion of wealth among the elderly reflects conscious lifetime spending versus saving decisions—rather than differences in lifetime resources—these higher taxes may be harder to justify and appear to penalize savers who spend less when they are young. From an economic perspective, if wealth accumulation is random, taxing saving has no incentive effects. On the other hand, if wealth accumulation results from conscious decisions to save versus spend, penalizing savers may have substantial incentive effects, discouraging individuals from saving for their own retirement and limiting aggregate economic growth. It is important to understand that this paper is about the dispersion in the accumulation of assets of persons with similar lifetime incomes. The issue raised here is not about progressive taxation, but rather about differences in tax imposed on persons who spend tomorrow versus today, given the same after-tax lifetime earnings.

In 1953 Milton Friedman wrote a paper he called “Choice, Chance, and the Personal Distribution of Income.” In this paper he says,

Differences among individuals or families in the amount of income received are generally regarded as reflecting either circumstances largely outside the control of the individuals concerned, such as unavoidable chance occurrences and differences in natural endowment and inherited wealth. . . . The way that individual choice can affect the distribution of income has been less frequently noticed. The alternatives open to an individual differ, among other respects, in the probability distribution of income they promise. Hence his choice among them depends in part on his taste for risk. . . . The foregoing analysis is exceedingly tentative. . . . Yet I think it goes far enough to demonstrate that one cannot rule out the possibility that a large part of the existing inequality of wealth can be regarded as produced by men to satisfy their tastes and preferences.

Now, over forty years later, “people earn just enough to get by” is a phrase often used to explain the low personal saving rate in the United States. The implicit presumption is that households simply do not earn enough to pay for current needs and to save. Yet in other developed countries the saving rate at all income levels is much higher than in the United States. Even in Canada—in many respects similar to the United States—the personal saving rate is almost twice as high as that in the United States. Such international comparisons alone suggest that saving depends on much more than lifetime earnings.

Venti and Wise show in this paper that at all levels of lifetime earnings there is an enormous dispersion in the accumulated wealth of families approaching retirement. In the United States it is not only households with low incomes that save little. A significant proportion of high-income households also saves very little. And, not all low-income households are nonsavers. Indeed, a substantial proportion of low-income households saves a great deal. The authors then consider the extent to which differences in household lifetime financial resources explain the wide dispersion in wealth, given lifetime earnings. They find that very little of this dispersion can be explained by chance differences in individual circumstances—“largely outside the control of the individuals”—that might limit the resources from which saving might plausibly be made. We conclude that the bulk of the dispersion must be attributed to differences in the amounts that households choose to save. Choices vary enormously across households. Some choose to save more and spend less over their working lives, whereas others choose to save little and spend more while working. Wide dispersion in saving is evident at all levels of lifetime earnings, from the lowest to the highest. The differences in saving choices among households with similar lifetime earnings lead to vastly different levels of asset accumulation by the time retirement age approaches.

Perhaps more closely related to the choice of risk that Friedman empha-

sized, Venti and Wise also considered how much of the dispersion in wealth might be accounted for by different investment choices of savers—some more risky, some less risky—again given lifetime earnings. The authors find that investment choice matters but is not a major determinant of the dispersion in asset accumulation. It matters about as much as chance events that limit the available resources of households with the same lifetime earnings. Thus, although investment choices make a difference, the overwhelming determinant of the accumulation of wealth at retirement is simply the choice to save.

As a benchmark Venti and Wise also considered the assets that the Health and Retirement Survey (HRS) respondents would have accumulated had they saved given amounts over their working lives and earned given returns on their saving. Saving 10 percent of earnings and earning the average annual S&P 500 return (which has been 12.2 percent since 1926) would have led to accumulated assets much greater than the typical financial assets of HRS households at the time of the survey.

Perhaps based on the presumption—contrary to Friedman’s conjecture—that differences in wealth can be attributed more to differences across households in adverse circumstances that limit saving than to explicit individual choices, government policy often penalizes persons who have saved over their lifetimes. For example, persons with the same lifetime earnings will face very different tax rates on Social Security benefits: Those who saved will pay higher taxes, while those who did not will pay lower taxes. Shoven and Wise (1997, 1998) show that persons who save too much through personal or employer-provided pensions face enormous tax penalties when they use these accumulated assets for retirement support. The evidence that differences in retirement wealth are due largely to saving choice while younger brings into question this tendency in tax policy. Although the distribution of the tax burden will inevitably be based on many factors, most observers believe that the extent to which older persons with more assets are taxed should depend in part on how they acquired the assets. Chance accumulation may weigh on the side of heavier taxes on those who have accumulated. On the other hand, accumulation by choosing to consume less when young, while others choose to consume more when young, weights against heavier taxes on those who accumulate assets for retirement. As emphasized at the outset, this paper is about the dispersion in the accumulation of assets of persons with similar lifetime earnings. The issue raised here is not about progressive income taxation, but rather—given the same after-tax earnings—about differences in the tax imposed on persons who save today in order to spend more tomorrow, versus those who spend everything today. The authors’ analysis suggests that a very large proportion of the variation in the wealth of older households can be attributed to household saving choices while younger rather than to chance events that may have limited the resources available for

saving. To the extent that most asset accumulation is due to choice rather than chance, the authors' results also suggest that *ex ante* taxing of saving may have more serious consequences for saving than may previously have been thought.

Finally, Venti and Wise explored the relationship between household saving and information about household saving that was obtained through two experimental saving modules administered in the third wave of the HRS. In general, the experimental module responses were consistent with household realized asset accumulation. About three-fourths of respondents said they had saved too little over the past twenty or thirty years, and the authors found a strong relationship between a household percentile level of assets, given lifetime earnings, and whether respondents thought they had saved enough. The accumulation of retirement assets is very strongly related to the age at which persons began to save for retirement. In addition, persons who accumulated more retirement assets tended to have a saving target or plan, and the plan typically included saving a portion of each paycheck. Those who accumulated little were more likely to say that they just couldn't get caught up on their bills or that they had a hard time sticking to a saving plan. Low saving rates seem to be only weakly related to an expectation that Social Security or employer pension plans would take care of retirement income, even among households with low lifetime earnings. The potential cost of health care is an important concern of a large fraction of households, and this concern appears to be unrelated to asset accumulation. On the other hand, there appears to be relatively little concern about job loss, support of children or parents, or financial market collapse. The results from the HRS experimental saving modules suggests that this type of information collection might fruitfully be pursued in more depth.

While Venti and Wise consider the reasons for wealth dispersion at retirement, James M. Poterba and Andrew A. Samwick examine changes in the ways people save over their lifetimes. This issue has become increasingly important as a larger fraction of saving for retirement is through personal retirement accounts, such as 401(k) plans, Individual Retirement Accounts, and others. Including employer-provided non-401(k)-defined contribution plans, over 76 percent of contributions are to plans controlled in large measure by individuals—who make participation, contribution, withdrawal, and asset allocation decisions. In “Household Portfolio Allocation over the Life Cycle,” Poterba and Samwick analyze the relationship between age and portfolio structure of U.S. households. They find important differences in whether people own assets and portfolio shares over the life cycle. In addition, they find important differences by birth cohort.

The authors motivate their analysis by emphasizing that recent and prospective aging of the populations in developed countries has attracted attention in many nations. The potential effects of population aging on social

security systems and the level of private and national saving have drawn the most interest from both academics and policy analysts. In the United States particular attention has focused on the adequacy of the baby boom generation's level of retirement saving. The way households allocate their accumulated saving across different assets—such as stocks, bonds, and real estate—has attracted less discussion, even though future economic security can depend as much on the way assets are invested as on the level of those assets. Asset allocation is also essential for understanding the behavior of individuals in the increasingly popular defined contribution pension plans that allow participants some discretion in their investment choices and for analyzing recent proposals for Social Security reform that call for mandatory saving accounts, with investment responsibility delegated to individuals.

Although there is little empirical work on asset allocation, there is a theoretical literature on the optimal portfolio behavior of individuals at different ages. This work is characterized by some controversy, in part between academics and practical financial advisers. In the standard portfolio choice paradigm that underlies most of financial economics, the only factor that should explain age-related differences in portfolio structure is differential risk aversion. In this setting, if a household is endowed with a time-invariant risk tolerance, then there should be no age-related patterns of portfolio allocation. Conditional on a household's risk aversion, there are strong predictions regarding the mix of risky and riskless assets that a household should hold. Moreover, regardless of their risk aversion, all households should hold risky assets in the same proportions within their risky asset portfolios.

This paper complements the substantial theoretical discussion of age-related patterns in asset allocation. It presents systematic empirical evidence on the basic patterns of household asset allocation over the life cycle. This information can help to evaluate competing models of household portfolio behavior, and more generally to assess proposals for greater reliance on household choices in retirement preparation. Using multiple waves of the Surveys of Consumer Finances, the authors control for systematic differences across birth cohorts in the age-specific pattern of asset ownership. Poterba and Samwick provide two broad conclusions. First, there are important differences across asset classes in both the age-specific probabilities of asset ownership and in the portfolio shares of different assets at different ages. The notion that all assets can be treated as identical from the standpoint of analyzing household wealth accumulation is not supported by the data. Institutional factors, asset liquidity, and evolving investor tastes must be recognized in modeling asset demand. These factors could affect analyses of overall household saving as well as the composition of this saving. Second, there are evident differences in the asset ownership probabilities of different birth cohorts. Older households were

more likely to hold corporate stock, and less likely to hold tax-exempt bonds, than were younger households, at any given age. Recognizing these differences across cohorts is important when analyzing asset accumulation profiles.

The authors emphasize that empirical evidence on the structure of household portfolios bears on a variety of questions in financial economics and public finance. One question that the results address is the degree to which the standard life cycle framework of asset accumulation can be applied to different components of wealth. The life cycle model posits a hump-shaped pattern of asset accumulation as households age: They accumulate assets during their working years and spend down those assets during their retirement years. The results in the paper by Poterba and Samwick suggest that the hump-shaped pattern is not uniform across all assets. For example, as a percentage of total assets, financial assets show just the opposite pattern; they decline as households age, and then begin to increase at advanced ages. Investment real estate and equity in privately held businesses do display a hump-shaped pattern, as in the life cycle model, but owner-occupied housing does not, since there is no evident decline in its ownership at older ages.

The standard life cycle model does not distinguish between various types of assets. Yet when assets exhibit different degrees of liquidity (e.g., with financial assets more liquid than business net worth or other real estate assets), the age pattern of asset holdings may contain important clues for evaluating competing theories of saving behavior. Precautionary saving models suggest that households should seek assets that can be liquidated in the event of a financial need. The different age profiles that we identify should therefore provide grist for future research on motives for saving.

A second issue that their findings address is the importance of cohort-specific factors, such as experience with historical returns on different assets or exposure to financial advertisements, in shaping portfolio patterns. Baby boomers show roughly the average propensity to hold taxable equity and the average portfolio share of taxable equity. Younger cohorts show greater investment in taxable bonds, tax-exempt bonds, and tax-deferred accounts than do older cohorts. They show lower investments in bank accounts and other financial assets. Compared with previous cohorts, the baby boom generation appears to be more willing to take advantage of the more sophisticated financial instruments that have become available over the past twenty years.

Younger cohorts have also leveraged their assets to a greater extent than older cohorts. This suggests that greater use of debt may also be the result of liberalization of financial markets over the last two decades. Nonetheless, the burden of servicing this debt will reduce the extent to which the baby boomers can use their assets to support consumption in retirement. Their results suggest that borrowing behavior should receive attention,

along with asset accumulation, in studies of financial preparation for retirement.

The authors point out that the important cohort patterns they identify suggest that it is essential to distinguish between the saving and asset accumulation of various cohorts as they approach retirement. The experience of one cohort as it approaches retirement may not translate to other, younger cohorts. These results provide a warrant for the type of research now being undertaken, in many contexts, on the retirement planning and preparation of the baby boom cohort in the United States.

### In Japan

The United States has a long history of analyses of the relationship between promised social security benefits and private personal saving. The weight of the evidence is that increased social security promises reduce personal saving. Seki Asano finds that in Japan a reduction in social security benefits increased private saving. In his paper titled "The Social Security System and the Demand for Personal Annuity and Life Insurance: An Analysis of Japanese Microdata, 1990 and 1994," Asano examines the effect of changes in the public social security system on the private life insurance and annuity holdings of Japanese households.

The household surveys used in the analysis were collected in 1990 and 1994. During this time period, the Japanese economy experienced two important changes that are relevant for household saving. The first was the increase in the normal retirement age for social security from sixty to sixty-five. (See the summary of the paper by Yukiko Abe, which considers the labor supply incentive effects of other reforms to the social security system.) The second was a 40 percent decline in the value of marketable assets such as real estate and corporate stock. Both of these changes should have increased the need for households to accumulate additional personal wealth.

The analysis in this paper proceeds in three stages. The first involves the careful calculation of the expected values of the annuity and life insurance payments from the public pension system, both before and after the reforms. The second stage of the paper sets up a model of wealth accumulation based on the households' needs to provide both annuities and life insurance. In this model, public and personal saving are perfect substitutes. As a result, households are predicted to reduce their own saving in proportion to how much they are promised by the public systems. The last stage is an econometric test of the model.

The main results are that private annuity saving increased by more than enough to offset the effects of the government reform during this period. There was also some evidence that the increase was concentrated among the younger generations, who were most affected by the reforms. Life insurance holdings were less affected by the reforms. Overall, the results

suggest a model of saving in which households have target levels of annuities and bequests and will save rapidly if necessary in order to achieve them.

### In Japan and the United States

Many factors determine the intergenerational distribution of consumption. Perhaps foremost among these is economic growth. A high rate of economic growth enables each new generation to have higher levels of both consumption and lifetime income than were attainable by previous generations. In most economies experiencing rapid economic growth, the younger generations share some of their gains through public pension schemes that redistribute consumption from the young or middle-aged to the less well-off older generation. As long as growth continues and the dependency ratio (of retired to nonretired persons) remains low, such programs are little burden to younger generations. However, as the population begins to age and economic growth slows, these intergenerational transfer schemes can have significant adverse effects on the consumption of the young. In Japan, as in the United States and other countries, there is a serious concern that existing social welfare programs excessively favor the current older generation at great cost to younger generations. In “An Empirical Investigation of Intergenerational Consumption Distribution: A Comparison among Japan, the United States, and the United Kingdom,” Makoto Saito considers how the gains from economic growth have been distributed among generations over the past thirty years in these three countries.

The analysis focuses on how both consumption and lifetime income have evolved for different generations of workers in Japan, the United States, and the United Kingdom. The analysis is based on age-classified consumption data for each country, spanning the years 1959–94 for Japan, 1972–94 for the United States, and 1971–91 for the United Kingdom.

Direct tabulations of these data reveal that in both the United States and Japan, per capita consumption has declined substantially over time for younger age groups, while consumption among the old has increased dramatically. In contrast, the young in the United Kingdom have fared better over time. This pattern raises the possibility that intergenerational transfers from the young to the old are of much larger scale in the United States and Japan than in the United Kingdom.

The paper next develops a theoretical framework to understand the consumption of different age groups over time. Observed consumption at a point in time combines age effects (e.g., the middle-aged consume more than the old) and cohort effects (e.g., older generation has higher post transfer lifetime income than younger generation). The cohort effects, which represent each generation's lifetime income available for consumption, may differ across generations. They represent the net effect of the complex interaction among economic growth, population aging, and the

scale of intergenerational transfer programs. Each of these factors may vary both over time and across countries.

Age and cohort effects are estimated using the time series of age-classified consumption data. The empirical results are quite striking. In Japan lifetime income available for consumption peaked for the cohort born between 1932 and 1936. In the United States lifetime income peaked for the generation born between 1947 and 1951. Thus, in both countries younger generations fare worse than older generations. In contrast, lifetime incomes are higher for successively younger cohorts in the United Kingdom. Thus it appears that the interactions among slower economic growth, population aging, and government transfer policy have produced a quite different intergenerational distribution of consumption in the United Kingdom than in either Japan or the United States.

In addition to the principal finding regarding consumption trends in the three countries, several other results emerge as well. First, the results reject dynastic models based on altruism as explanations for consumption behavior in all three countries. Such models predict consumption smoothing across generations. The prediction is not supported by the data. Second, although the lifetime income may be falling for younger cohorts in the United States and Japan, it does not necessarily follow that the standard of living has decreased for these recent cohorts. The reason for this is that the real prices of goods fall in a growing economy. Indeed, the author calculates that based on the estimation results, the U.S. economy need grow at an annual rate of only 1.3 percent over the next two decades for the younger generation to keep up with the middle-aged generation. Finally, the estimated specification tested for liquidity constraints as an explanation for intergenerational differences in consumption by including the change in labor income as a determinant of the change in consumption. For most age intervals in all three countries, liquidity constraints are not an important source of differences in intergenerational consumption.

## **Health Care**

### **In the United States and Other Countries**

Health care is of particular importance to older persons, and the rising cost of health care is an important concern in almost all industrialized countries. In his paper titled "The Third Wave in Health Care Reform," David Cutler comments on a wave of health care reform that he believes will emphasize the efficiency of medical care. He draws attention to what he foresees in Organization for Economic Cooperation and Development (OECD) countries in general, including the United States and Japan.

The title of Cutler's paper refers to a forecast about coming trends in health care reform. He believes that a third wave of health care reform,

focusing on improving the efficiency of medical care provision, will become common in the OECD in the next five to ten years.

The first wave of health care reform, Cutler assumes, was from the early 1950s until the early 1980s. In this era, most OECD countries built their health insurance systems. Universal coverage was guaranteed, and benefits were quite generous. There were few restrictions on the provision of services. As a result, medical spending consumed an increasing part of the economies of all OECD countries.

The growing cost of medical care led to the second wave of reform: a focus on cost containment. The most obvious way to limit medical spending is simply to limit the total amount of resources the medical sector can consume. Since governments in the OECD typically paid for most, if not all, of medical care spending, the government could easily limit overall spending. Furthermore, overall spending limits did not conflict with the goal of universal insurance coverage to a generous set of benefits. Thus, the 1980s saw the advent of wide-scale limits on medical spending in aggregate: global budgets for hospitals, volume reductions on physicians, and spending limits in institutions in the public sector.

However, limiting spending without altering the underlying demand or supply relations, Cutler emphasizes, does not necessarily lead to efficient medical care provision. In many countries, tight budget constraints have led to inefficient provision of services and a growing role for the public sector. Some countries have concluded—and the author believes more will follow—that they need additional reforms to provide more of a market role in medical care provision. He refers to this incipient trend as the third wave of healthcare reform.

In this paper, Cutler documents the trends in OECD medical systems over the past fifty years. The world's medical systems have been in flux for most of the past fifty years. At first, countries built up their medical care system. Coverage was made universal, and benefits were generous. There was little demand- or supply-side cost sharing.

In the early 1980s, countries realized the unaffordability of generous demand incentives with no control over medical care supply. The typical response was to limit the total amount of services that could be provided. Given the commitment to universal insurance and low cost sharing that most countries had, this was the logical response. And this response saved money: The 1980s were characterized by much lower growth of medical costs than were the previous twenty years.

However, the strains in this approach ultimately became apparent. Excess demand with limits on the supply side led to waiting lists, nonpricing rationing, and the incentive to seek services out of the public sector. As a result, concern is shifting to the efficiency aspects of the market as well as the overall cost of the system.

A focus on efficiency, Cutler forecasts, is likely to involve two reforms,

which he characterizes as the third wave of health care reform: increased competition for services, either at the level of the provider or at the level of the insurer; and increased patient cost sharing. Neither of these are easy reforms to undertake. Increased competition increases the incentives for adverse selection; increased cost sharing is more burdensome for the poor than for the rich. However, countries are finding, or are likely to find, that they have no alternative but to try these reforms.

As countries undertake a new round of health reform, it is important to keep one point in mind, says Cutler. To some extent, most countries are prisoners of what is done in the United States. When medical technology advances in the United States, it must ultimately advance around the world. Countries can make their systems more or less efficient and can speed up or delay the use of these technologies, but they are unlikely to postpone them forever. In this sense, stable medical reform around the world is likely to await stable medical reform in the United States.

### In Japan

As in the United States, there are large differences in health care expenditures by geographic region. In their paper titled "Concentration and Persistence of Health Care Costs for the Aged," Seiritsu Ogura and Reiko Suzuki examine differences in health care costs for the elderly among municipalities in Japan.

The Ministry of Health and Welfare (MHW) releases data on regional differences in healthcare expenditure yearly. According to this data, looking at average per capita expenditure of those enrolled in the National Health Insurance Plan, expenditure ranged from the lowest in Okinawa to the highest in Hokkaido, where 1.97 times the Okinawa amount was spent on health care. Regional differences in health care expenditure are a phenomenon not unique to Japan, but can be seen in many other countries. They are a much larger issue in the United States, where the health care system is more market oriented, than in Japan. Although these regional discrepancies in Japan have been declining gradually, they still attract considerable attention in Japan. In particular, health care for the elderly takes up such a large share of total health care costs that it can alter the entire makeup of health care spending. Thus, in this study Suzuki and Ogura analyze the regional variation in elderly health care costs.

Probably the major reason for regional differences in health care expenditure, the authors conclude, lies in the oversupply of such health care facilities as staff, beds, and physicians. Recently, there has been speculation that the introduction of high-priced medical testing equipment such as computed axial tomography (CAT) scan and magnetic resonance imaging (MRI) equipment has caused advanced medical technology to become more widespread, thereby raising health care costs as well.

The first objective of the paper is to determine the factors behind the

regional differences in health care expenditure, and to see how much of these discrepancies could be narrowed through equalizing the allocation of health care facilities and staff. Then, focusing on the government's transfers, which in effect transfer resources to areas with a high share of elderly, or with low income, the second objective is to see if it is important to attempt to close this gap, and if so, to clarify which features of expenditure might most appropriately be equalized.

In an effort to control healthcare costs, the MHW chooses about 150 municipalities (cities, towns, and villages) and requests that they make efforts to reduce health care expenditures. Municipalities are the smallest administrative units and are the insurance agents of the National Health Insurance Plan. The guidance to the municipalities is intended to encourage them to restrain wasteful healthcare spending on their enrollees (the residents in their municipalities). The authors emphasize that it is difficult for such small governmental units to bear large insurance risks, and they in fact receive large subsidies from the central government to pay the difference between their revenue and outlays.

The variation across municipalities in health care expenditures for the elderly is greater than the variation across larger geographical units such as prefectures. Intensity of health care supply works to increase these discrepancies, while the concentration of patients works to decrease them. The authors say, however, that even if it were possible to decrease the intensity of health care supply and patient density, and reduce differences across municipalities, this would not work to close the gaps, because the variation in expenditures is much greater than can be explained by the medical resources and patient density.

Since the elderly in low-income municipalities have longer hospital stays, health care expenditure is much higher than that in high-income municipalities. This is because low-income households do not have the capacity to care for the elderly in their homes, and hospitals take over the function of nursing homes. In addition, in low-income areas the revenue from insurance premiums is quite low, and these municipalities receive subsidies from the central government to pay for health care. In the present situation in which nursing care services are far from adequate, forcing the municipalities with high health care expenditures to lower their expenditures would mean that the channels for income transfer would be narrowed, and the income gap between the low- and high-income areas would widen, the authors say.

The smaller the population in the municipality, the greater the variation in their expenditure on health care. Municipalities with fewer than 1,000 people account for 25 percent of the cities, towns, and villages in this survey in eleven prefectures. The smaller municipalities are more likely to bear the risk of fluctuating health care expenditures. When considering these municipalities as insurers, the smaller they are, the higher the insur-

ance risk. Among insurers there is a reinsurance system against high health care expenditures, and this covers these risks. Although this reinsurance system is effective, the authors argue that it would be better to expand the insurance base so that the risk is lowered. It is not, they say, rational to divide Japan into 3,251 separate insurance zones.

Satoshi Nakanishi and Noriyoshi Nakayama analyze the effects of demographic change on medical expenditures in Japan in their paper titled "The Effects of Demographic Change on Health and Medical Expenditures: A Simulation Analysis."

The goal of this study is to analyze the effect of demographic change on the health sector and the larger economy. The authors develop a simulation model with three sectors: (a) demand for medical services, (b) production of medical services, and (c) the general economy. Demand for medical services deals with patient behavior, and production of medical services deals with the behavior of hospitals and clinics. General economy models production of consumer goods other than health services and capital goods.

The share of GDP accounted for by medical expenditures will reach 11.3 percent by 2015. From 1960 to 1994, medical expenditures grew an average of 12.3 percent annually, greater than the 10.1 percent annual growth of GDP in the same period. As a result, medical expenditures as a percentage of GDP doubled from 2.5 percent in 1960 to 5.4 percent in 1994. From 1980 to 1994, medical expenditures grew at a slower rate, 5.5 percent per annum, after the Japanese government adopted a cost containment strategy aimed at limiting reimbursement rates while increasing the self-payment rate.

The results of the authors' simulation suggest that under the present health care system, the demand for medical care will grow at 2.7 percent per annum from 1991 to 2010. The share of GDP accounted for by medical expenditure will reach 11.3 percent by 2015 and thereafter will gradually decline. Although medical care expenditure will increase, the authors conclude that population aging will depress the health status of the typical elderly person. The authors find that it will be difficult to maintain the present level of health status in the 21st century. The authors also say that government cost containment strategies will mean that individuals will have to pay more for their own health care. In addition, the authors foresee a fall in national health status.

### In the United States

In the United States, choice among health care plans has become an accepted goal of both employer-provided and public health care programs. Choice, however, brings with it the potential of adverse selection of high-cost users of medical care into generous and higher-cost plans. In "Choice among Employer-Provided Insurance Plans," Matthew J. Eichner consid-

ers the choice of plans by employees in a firm that offers three plans, which vary in generosity and in their cost to employees. Perhaps the central conclusion is that employees are reluctant to choose high-deductible plans—with greater risk of out-of-pocket costs—even though the lower premium for such plans would seemingly leave employees better off financially. While Eichner's analysis is based on the choices of employed persons, the ideas are equally applicable to older persons choosing among health care plans.

More choice has emerged as a politically palatable alternative to fundamental health reform in the United States. After several decades of rapid increases in the cost of providing coverage to employees, the elderly and the indigent, there was widespread anticipation of some governmental reform of the health care market. But even before it became clear that such reform would not materialize, and with increasing momentum afterward, firms sought to induce their employees to choose alternatives to the traditional fee-for-service plans, which presented the insured, their providers, or both with better incentives to control costs.

The incentives offered by firms to accept these new alternatives typically include expanded coverage and lower monthly premiums collected in the form of payroll deductions. Many employees now choose between a traditional fee-for-service plan with cost sharing and comparatively high payroll deductions, and one or more health maintenance organizations (HMOs) with no cost sharing and dramatically lower monthly payroll deductions. The HMOs use administrative or supply-side mechanisms to control the costs of providing care.

The federal government, too, has seized on choice as a means to lower health care costs. The Medicare program has allowed a number of HMOs to sign up the elderly. In return for accepting administrative controls over provision of services, the elderly are offered an expanded basket of services (typically including such things as pharmaceuticals and well-care) and freed from the bother of applying and then waiting for reimbursement from the Medicare system.

While HMOs have been in the forefront of the health care reform movement, other alternatives to traditional fee-for-service coverage have also emerged. The Health Insurance Access and Portability Act of 1996, known also as the Kennedy-Kassebaum bill, authorizes a limited trial of catastrophic insurance. Instead of seeking to implement cost control through administrative mechanisms and essentially eliminating coinsurance, catastrophic insurance aims to make individuals behave as if they are spending their own money. To provide the necessary liquidity to satisfy deductibles that might be several thousand dollars, the Kennedy-Kassebaum bill also provides for a tax-favored savings account from which expenditures below the level of the deductible are paid. This eliminates the tax advantages of low-deductible, high-premium insurance plans.

Under such a system, the question of how individuals make choices about insurance is critical. There are two fundamental questions, the answers to which will determine the long-term prospects of a system incorporating a high degree of choice among insurance alternatives. First, adverse selection of sicker individuals into the more generous coverage options is of concern. The initial estimates of cost saving from managed care and other alternative arrangements surely is at least in part due to the fact that these schemes attract the healthiest segments of the covered population. There is reason to suspect therefore that the cost savings will disappear or at least diminish as the number of people covered under the new alternatives—and the number of comparatively unhealthy people in particular—increases. Equally important is employee responsiveness to the pricing of the various insurance options. For example, how much lower must premiums be before large numbers of covered individuals will accept greater levels of risk bearing.

The Eichner paper presents some basic evidence on how employees choose health insurance coverage from a menu of options. (There is some evidence that they hesitate to choose low deductible plans, even though these may be offered at a discounted price that might leave them indifferent to the high deductible plan and other more generous coverage options.) This conclusion, however, is based on adherence to a standard expected utility approach, which might prove an inadequate framework for evaluating employee willingness to bear risk. In addition, the conclusions are no doubt sensitive to how one views the likelihood of persistent losses over a comparatively long time period. Applying this technique to the issue of plan choice is a future goal of this work.

In addition, the paper examines evidence concerning those employees who change plans voluntarily. This group consists disproportionately of larger family groupings that tend to move between two more-generous coverage options. Movement between plans seems to be associated with higher expenditures both before and after the move.

## **Labor Market Incentives**

### **In Japan**

Populations in almost all countries are aging rapidly, and life expectancies are increasing. Indeed, there is growing evidence that in the United States the health status of persons at retirement ages is increasing as well. Yet in almost all countries persons are leaving the labor force at younger and younger ages. Perhaps Japan is an exception. Not only has the decline in labor force participation been modest in Japan, but even that modest decline has been met with changes in social security provisions, in an attempt to reverse the trend. Among industrialized countries, the fall in labor force participation of men between the ages of sixty and sixty-four has been

much smaller in Japan than in other countries. Since 1990, the labor force participation of men in this age group in Japan has increased. An apparent reason for the increase was a series of changes in the provisions of the Japanese social security system, which was intended to reduce the incentive to retire early. In “Employees’ Pension Benefits and the Labor Supply of Older Japanese Workers, 1980s–1990s,” Yukiko Abe considers the effects of the disincentive in the system prior to the reform, as well as the potential effects of the reforms.

There are three major public pensions in Japan. The Employees’ Pension insurance (EP) covers workers in the private sector and their spouses and is the largest public pension system in Japan. Public sector employees and private school personnel are covered by mutual aid associations (MAA) of several different types. Self-employed workers are covered by the National Pension (NP). Here, the focus is on the institutional structure relevant to the benefit structure for those who are covered by EP and are subject to provisions for working beneficiaries.

Currently, EP participants are eligible to receive benefits at age sixty (whereas the NP eligibility starts at age sixty-five). The starting age for EP eligibility is scheduled to increase gradually from 2001 to 2013. That is, before the eligibility age, EP participants aged sixty to sixty-four will receive only the benefit portion that is proportional to their lifetime EP contributions and will not receive the base benefits that the plan provides. Prior changes starting in the late 1980s were also intended to reduce early retirement incentives. However, even under the current system, work disincentives still exist, according to Abe.

In her paper, Abe examines the effects of EP benefit rules on labor supply. Although Abe’s estimates suggest that the increase in labor supply of older persons in the early 1990s cannot be attributed in large part to the reforms she analyzes, several other reforms occurred concurrently and may have contributed to the increase in labor force participation: The mandatory retirement age was increased; subsidies were provided for hiring older workers; and the maximum number of hours worked was reduced.

### In the United States

In the United States, there are also strong incentives to leave the labor force early. In “The Motivations for Business Retirement Policies,” Richard Woodbury examines the reasons for early retirement incentives in employer-provided pension plans in the United States. Unlike most analyses of incentive effects of pension plans, his analysis is based on extensive interviews with corporate executives. He concludes that even though the retirement incentives are strong—as demonstrated by other authors—the wish to encourage older employees to leave the workforce is “typically not a central motivation for the policy design” (331).

Most traditionally defined benefit pension plans in the United States

encourage older workers to retire. For long-service employees, the financial incentive to retire often begins as young as age fifty-five. By age sixty-five, essentially all pension plans encourage retirement. The financial incentives in pension plans and their significant effects on retirement have been the subject of a growing literature in economics (see, e.g., Lumsdaine and Wise 1994). Absent from the literature, however, is any clear analysis of why firms have designed pension plans this way. To the extent that firm motivations are addressed, the common theoretical assumption is that the incentives are deliberate business policy decisions designed to induce retirement among older workers who are paid more for their productive value.<sup>1</sup> But this assumption is made without any evidence from the companies that have implemented the plans. It may also be true, as suggested tangentially by Kotlikoff and Wise (1989), that firms are largely unaware of the complex financial incentives in their pension plans. It may be that firms have designed their plans for completely different reasons. Woodbury's study sets out to understand better the motivations of firms in designing pension plans, as well as why these motivations have resulted in plans that have the effect of encouraging early retirement.

The issue has particular importance in the context of current demographic trends. The average number of years spent in retirement has increased steadily, partly as a result of increasing life expectancy, and partly as a result of people retiring at younger ages. Between 1950 and 1997, labor force participation rates of older men dropped significantly—from 46 percent to 17 percent among men aged sixty-five and older, and from 87 percent to 67 percent among men between ages fifty-five and sixty-four. Among women, the large increase in labor force participation at younger ages is absent at older ages, suggesting the offsetting decision to retire earlier among women as well. The financial incentives in pension plans are an important factor affecting trends in retirement behavior and inducing earlier retirement decisions. To the extent that these early retirement decisions are made based on distorted (or unintended) economic incentives, they represent a loss in both labor productivity and social welfare—which will only grow larger as the population ages.

Woodbury's study is based on the experiences of twenty large U.S. corporations. The analysis draws in particular on a series of discussions about policy history and objectives with executives at each company, and on a review of internal business documents relating to the design of the policies.

1. The primary theoretical framework for this assumption derives from the literature on implicit contracts. According to the theory, workers are paid less than their productive value at younger ages, and more than their productive value at older ages, creating an incentive for workers not to change jobs, and to work harder in anticipation of the future reward. Pensions then serve as a means of inducing retirement (or at least reducing the effective compensation) among those older workers who would otherwise be paid more than their productive value (see Lazear 1981).

For some of the companies, several days were spent visiting the corporate headquarters, meeting with corporate personnel (including human resource executives, financial affairs executives, and employee benefits planners and administrators), and reading through business documents.

Woodbury emphasizes that the analysis identified a number of objectives and motivations for the design of business retirement policies, including, in some cases, the desire for older workers to retire. In most cases, however, retirement incentives were either unintentional or secondary to the policy's central motivation. In general, companies were much more concerned with providing competitive retirement policies (policies similar in structure and in value to those of their competitors in the labor market) and policies that adequately provided for the well-being of their retirees. The design and ongoing evaluation of the policies were targeted primarily toward monitoring the retirement policies offered by their competitors, as well as assessing the adequacy of their policies in satisfying (but not exceeding) the income replacement needs of their retirees.

Woodbury finds that at fourteen of the twenty companies participating in this study, all employees participate in a retirement policy with incentives to retire at particular ages. At another three of the companies, some categories of employees participate in a retirement policy with incentives to retire at particular ages. Only three companies have retirement policies that do not encourage the retirement of older workers. Despite the widespread use of policies that encourage retirement, the main finding of this study is that retirement incentives are typically not a central motivation for the policy design.

Two motivations have dominated the design of current business retirement policies: concern about retiree welfare, and concern about competitiveness in the labor market. A great deal of the current structure of business retirement policies is based on paternalistic company values. Many executives indicate that their companies have a responsibility to insure the well-being of retired employees, and because of this responsibility, many executives view their retirement policies more as entitlements or welfare for retired employees than as compensation for working employees. This view of retirement policies is reflected in pension plans and postretirement medical plans that are designed to support the needs of retired employees.

The effect of these company values on the economic structure of retirement policies is to encourage retirement. The benefits of those retiring early cannot be reduced too dramatically, or early retirees will be unable to maintain their preretirement standard of living. Similarly, the benefits of those retiring late need not be increased, since their preretirement standard of living can be maintained with normal benefit levels. Thus, the retirement policies have an economic structure that encourages retirement, even though retirement incentives are not a central motivation in the policy design.

Business concerns about competitiveness in the labor market have the effect of spreading these traditional policies more widely through the business community. In order to be competitive, companies choose policies with a similar structure and a similar value to those offered by competing employers. Thus, companies without strong paternalistic values are driven by competitive pressures to implement policies with the same economic structure. Whether the policies at a company are motivated more by a concern for retiree welfare or by a concern for competitiveness in the labor market, the same policies with the same economic structure and the same retirement incentives are chosen. In either case, it is not the retirement incentives that motivate the policy design.

Given the loss in productive activity caused by retirement in the United States, it is potentially worrisome, says Woodbury, that businesses do not consider the effect of their policies on retirement behavior more carefully. At the same time, however, most businesses are not unsatisfied with the retirement behavior taking place under their policies. While influencing retirement behavior is not the motivation for retirement policies, the policies seem to be affecting retirement behavior in a way that is roughly consistent with company preferences. Executives at many of the companies in this study are quite satisfied that older workers retire, and they claim that many older workers are paid more than their productive value. Thus, one need not conclude from this study that the retirement induced by pension plans represents an economic distortion.

There is even some indication that companies unsatisfied with the retirement behavior of their workers look to their retirement policies as potential instruments for changing retirement behavior. Most obviously, the increasing use of early retirement window plans has focused a great deal of attention on the potential for retirement policies to influence retirement behavior. Most executives also broadly recognize the behavioral incentives in their regular retirement policies.

In short, the assumption that pensions are deliberately designed to encourage retirement is not supported by this study. However, Woodbury concludes, as the population continues to age, and as retirement policies consume an even larger percentage of corporate payrolls, businesses are likely to focus much more attention on the retirement behavior of their workers and, consequently, on the relationships between retirement policies and retirement behavior. Indeed, if this same study were conducted in 2020, when the baby boom generation would be retiring in record numbers, it would likely reach some very different conclusions about the key motivations for retirement policy decisions.

### In Japan

Returning to incentives in Japan, in their paper titled “Promotion, Incentives, and Wages,” Toshiaki Tachibanaki and Tetsuya Maruyama con-

sider labor market incentive effects not at retirement age but rather over the working life in Japan. There is a growing interest in the relationship between incentive pay and careers in organizations, and in particular between incentive pay and promotion up the hierarchical ladder. This study considers evidence on this issue in Japan. The authors suggest that population aging in Japan and slower firm growth rates have increased motivation to develop internal labor policies that enhance the work incentives of employees. In their paper, the authors focus on the relationship between worker effort and incentive effects, based on data from several large Japanese firms. The central conclusion of the paper is that the effect of incentives differs according to an employee's level in the firm hierarchy: The wage rate provides work incentive at early career stages; at mid-level stages promotion is the important incentive; and at the top level neither matters.

The authors emphasize that there has been growing awareness in Japan that average labor productivity of blue-collar workers is quite high, but productivity of white-collar workers is low, compared with other industrialized nations. The authors cite several reasons that they believe support this view. First, team production is common among manual workers in the manufacturing industries, and the authors believe that such a production system can increase labor productivity without necessarily requiring strong individual leadership. Second, the authors observe that nonmanufacturing industries in which the majority of workers are white-collar show lower labor productivity than do firms populated primarily by production workers. Third, the authors say, leadership and the capability of able and motivated persons are crucial to the productivity of white-collar employees, if they are engaged in complicated jobs. Fourth, the authors propose that a compressed wage structure and a seniority-based promotion system—which are typical features of internal labor markets in Japan—are perhaps appropriate for manual workers but not for white-collar workers. The focus of the paper is whether the latter proposition is supported by the evidence.

The study investigates the relationship between work effort on the one hand and wages and promotion on the other hand. Evidence from white-collar workers in several large Japanese firms was used to investigate this issue. The authors present several conclusions. For example, the position an employee holds in the hierarchical ladder is crucial in understanding the relationships among promotion, effort, and wages. The effect of wages on effort is important for employees early in their careers: the higher the wage payment, the higher the effort for these employees. However, promotion is the key reward that increases the efforts of mid-career employees. For employees at the top, the authors conclude that neither incentive works to promote productivity. Unobservable factors, including “pull” or “luck,” seem to be important determinants of the advancement of these employees. The authors say that one reason incentive mechanisms work

only for employees in early careers is that employees who have been promoted rapidly to higher positions have already shown that they are highly motivated in any case.

What are the implications for human resource management, in view of recent population aging and slower firm growth rates in Japan? The authors point to the importance of increasing worker productivity incentives. The authors conclude that competition among employees, in particular among younger employees, will work to increase productivity. Such competition, they say, is likely to distinguish between capable employees and less-capable employees early in their careers. Quicker promotions for capable employees and a wider wage dispersion among employees, the authors conclude, are unavoidable.

### **Population Projections in Japan**

Poor population projections have been one important reason why forecasts of the financial status of the Social Security trust fund have been so inaccurate in the United States. Indeed, many prominent demographers have been critical of the way in which Social Security Administration forecasts are obtained. As it turns out, forecasts are incorrect elsewhere as well. In "What Went Wrong with the 1991–92 Official Population Projection of Japan?" Seiritsu Ogura explores the reasons for the error in 1992 projections in Japan.

On two grounds one can say that the track record of the last two Japanese official population projections is very poor. One is the absence of accuracy in the projections, even in the medium run. The other is making the wrong assumptions in the long-run trend. Every five years, the National Institute of Population Research makes three projections based on high-, middle-, and low-fertility assumptions, and it is the projection based on the middle-fertility assumption that is regarded as the official population projection. The projection is automatically linked to many long-term plans that the government agencies make, from public pensions projections to energy projections. The 1986 projection, which predicted a recovery of Total Fertility Rate (TFR) to 2.0, overestimated 1991 births by almost 300,000, or 20 percent. In fact, during this period, TFR dropped from 1.764 in 1985 to 1.51 in 1991. Despite this experience, demographers at the Institute predicted a recovery in TFR starting in 1995. At this time, however, there seems to be no sign of the predicted recovery, and the TFR has continued to slip during the last five-year period.

Despite this rather poor performance from the purely technical point of view, Ogura says that the 1992 projection was a very innovative one. Most significant, he says, was the way it tried to estimate age-specific fertility rates of the cohorts that had recently entered into the reproduction stage by fitting the data to a class of statistical distributions. Thus armed, it

declared that Japanese women have been temporarily delaying marriage and childbearing, which would come to an end by the mid-1990s to raise the TFR to where it was in the mid-1980s. According to Ogura, however, their attempt to introduce science into the population projection was not very successful in terms of its outcome, and it seems to have been abandoned in the latest projection.

In fact, the 1997 projections, which were made public in January 1997, used fertility rates based on marriage rates and the marital fertility rates of recent cohorts. These methods were used in the last two Japan Center for Economic Research (JCER) population projections, which were made by Ogura himself. As marriage precedes births by many years, it seems natural to assume that using marriage data would be far more powerful in predicting the number of future births than the sole use of women's age, in a given cohort, Ogura concludes. The JCER population projection has been constructed on this simple idea, and so far it has been quite accurate, says Ogura.

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