The Fiscal Challenges of Population Aging  
The Contrasting Cases of The United States and Japan

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Abstract

Population aging results inevitably from increasing longevity and declining fertility. But how much and how fast populations age differ enormously. So do the fiscal stresses that population aging generates.

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I. Introduction

With respect to the problems associated with population aging, Japan is at one extreme. It has experienced one of the most rapid declines in fertility and increases in longevity on record. Japan’s fertility is now among the world’s lowest; its life expectancy at birth is the world’s second highest.  
Among the world’s developed nations, the United States is close to the other extreme. U.S. mortality rates have declined, but its life expectancy at birth is lower than that of any other major developed nation (excluding Russia). U.S. birth rates have fallen but remain among the highest in developed nations; its immigration rate is comparatively high. For these reasons, population aging is milder in the United States than in most other developed nations, and the fiscal challenge it poses is modest.

In general, the fiscal challenge from population aging is one of transition more than of level. Any stable demographic situation is fiscally sustainable provided that taxation and saving suffice to pay for the transfer of resources from active to inactive members of the population. The larger the dependent population, the larger the required transfers, but it is rapid demographic change that creates fiscal challenge. To save more requires habits to change, and changing habits is often unpleasant and disruptive. To raise taxes can be

1 The views expressed here are my own and do not necessarily reflect those of the trustees, officers, or other staff of the Brookings Institution.
2 Japanese fertility ranks 184th out of 195 countries according to the United Nations; 205th out of 224 countries, according to the CIA; and 184th out of 197 countries according to the World Bank. http://en.wikipedia.org/wiki/List_of_sovereign_states_and_dependent_territories_by_fertility_rate
politically difficult. That is why the fiscal challenge posed by population aging is acute in Japan and comparatively minor in the United States.

Starting points matter too. Both the United States and Japan have relatively parsimonious pension systems. That fact somewhat attenuates the problems produced by demographic change in both countries. In contrast, the high level of U.S. health care spending increases the challenge of population aging in the United States; continuation of that rapid growth would greatly magnify the challenge.

The first section of this paper presents a simple and familiar framework for thinking about the challenges of population aging. That framework undergirds the view, widely-held in the United States, that the primary threat to fiscal soundness comes from allegedly excessive benefits for the elderly. U.S. commentators who espouse this view often speak of an 'entitlement crisis.' There is no such crisis in the United States. The simple framework described in section 1 is blinkered and incomplete.

The second section briefly describes a few features of the U.S. pension system. The features I have singled out may seem idiosyncratic. I make no attempt to describe the U.S. system in any detail. Its broad outlines are similar to those of many other countries and are broadly familiar to many. Even if they are not, good descriptions are readily available on the Web, both from the U.S. Social Security Administration and from the OECD.

The third section presents data suggested by the framework laid out in the first and second sections. These data are useful for viewing the fiscal prospects confronting the United States and for comparing those challenges with those facing Japan. The key fact is that the level and projected increase in the share of GDP the United States will devote to public pensions are comparatively small and easily managed. Health care spending poses a more serious challenge. Current U.S. health spending is extremely high—18 percent of GDP, compared with 9.3 percent in Japan. Until recently U.S. health care spending was growing much faster than income. The difference, often called ‘excess’ growth, vanished about six years ago. No

The term ‘entitlement’ is code for a range of government programs to which people earn legal eligibility by past employment or because of low current income and meager assets. The largest of these programs is Social Security, which provides pensions to the elderly, to young survivors, and to people with disabilities. Somewhat smaller today, but growing faster is Medicare, which pays for most of the cost of acute health care for the elderly and people with disabilities. Medicaid is a state-federal program that covers most health care costs of acute health care for the indigent of all ages and long-term custodial care for the elderly and people with disabilities. Federal government spending on these three programs is projected to total $1.7 trillion in 2014, 48 percent of total federal spending, and 9.8 percent of GDP. State Medicaid expenditures will be an estimated $204 billion in 2014.

The best source for information on the U.S. pension system that covers the general population, Social Security, is the Annual Statistical Supplement to the Social Security Bulletin, 2013, which is available on line at http://www.ssa.gov/policy/docs/statcomps/supplement/2013/index.html. It is updated annually and contains not only statistical tables on most aspects of Social Security, but also detailed information on statutory provisions and their history.

one is entirely sure why. Many factors may have been at work, but their relative importance is unclear.

Section IV examines trends in labor force participation and presents one estimate of how much increases in labor force participation could offset the fiscal pressures from a growing elderly population. The conclusion is straightforward. If ‘excess growth’ remains low, future overall fiscal imbalances now appear to be modest. Despite population aging, it will be technically easy to prevent further increases in the ratio of debt to GDP, and should be possible to reduce that ratio. Moreover, it will be possible to do so while delivering all benefits promised under current law to the elderly and other ‘dependent’ populations. To put matters differently, the United States faces a wide range of critically important economic challenges. Income inequality is a serious economic and political threat. Improving lackluster pre-college education is vital to national well-being, as is maintaining the quality of higher education and scientific research. The challenges from population aging and associated fiscal imbalances are less important than these challenges and are easily met.

II. An (Over-) Simplified Framework

The fiscal challenge from population aging is often summarized by one variant or another of a simple equation that defines the cash-flow tax rate, \( t \), necessary to pay for benefits for the elderly under a pay-as-you-go financing system and for other public services. Government spending includes both benefits for the elderly and for other purposes, \( G \).

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(1) \quad t = \frac{((\text{Pop}^e \cdot a \cdot w) + G)}{(\text{Pop}^y \cdot w)}.
\]

\( \text{Pop}^e \) and \( \text{Pop}^y \) refer to the elderly population and working age populations, respectively; \( w \) is the per person income against which taxes at the rate \( t \) are levied; \( a \) is the ratio of benefits per elderly person to per person income of the working age population. \( \text{Pop}^e \) and \( \text{Pop}^y \) are not mutually exclusive groups.

Based on this simple equation, analysts routinely produce tables showing large projected increases in \( \text{Pop}^e/\text{Pop}^y \), from which they infer that it is necessary either to greatly increase \( t \) or to sharply cut \( a \). Such tables showing the elderly ‘dependency ratio’—usually the ratio of the population over age 65 to the population of prime age adults—have been reproduced in countless reports and studies. They are routinely cited by U. S. journalists, governmental officials, and others. Another widely cited statistic in the United States is the ratio of the number of workers who pay taxes on their earnings to support Social Security pension benefits to the number of such pensioners. Historical series showing that this ratio has fallen and will fall further are used to support the argument that the financial burdens resulting from Social Security are becoming insupportable and that benefits must be cut.

These tables contain important information and are not without value. But they are seriously incomplete. Furthermore, they misleadingly imply that volatile economic variables are parameters, and they bury multiple behaviors in single parameters. Variables that bear immediately on fiscal soundness do not even appear in equation (1). Too often in the United States, they are completely ignored in discussions of the challenges of population aging.
Among the important policy-relevant variables absent from equation (1) are the following:

**The Retirement Age.** The age that separates “young” from “old”—the implicit ‘retirement’ age—is not fixed. Raising that age directly cuts the short-term *cash-flow cost* of pensions. It may or may not lower the *long-term cost* of pensions. Whether it does so depends on the degree to which pensions of those who claim benefits at more advanced ages are increased to compensate them for the reduced duration of payment. If pensions are graduated sufficiently to provide full compensation for delay, there is no long-term saving from raising the age of eligibility. This is approximately the situation in the United States. Japan somewhat overcompensates those who delay claiming pensions, so that those who do not claim pensions as soon as they can actually raise long-term pension costs.\(^7\) To the extent that raising the retirement age causes people to delay withdrawal from the labor force, it increases potential GDP and the revenue base available to pay for pensions and other public services.

**Population.** Rates of immigration vary widely among countries and over time within countries for many reasons, one of which is public policy. Official projections anticipate that net immigration in the United States will run a bit more than 1 million people a year for the indefinite future. At that rate, immigration currently accounts for roughly 40 percent of U.S. population growth.\(^8\) If there were no net immigration, the projected gap between revenues and expenditures in the U.S. Social Security system would be increased by more than 30 percent.

As is well known, total population is falling in Japan. Deaths now exceed births, and net immigration is zero.\(^9\) I shall not comment on immigration policy. In particular, I am *not* suggesting that immigration policy should be materially influenced by its impact on pension costs. But immigration *is* a policy variable, *not* a parameter.

**Labor Force Participation.** Labor force participation rates, both below and above the ‘normal’ age of retirement, have also varied enormously over time and among countries. They respond to public policies. Employment among those in ‘prime-age’ brackets is acutely sensitive to customs regarding the division of responsibilities between men and women, to policies regarding discrimination in the labor market based on age and sex, to arrangements for the care of children and the dependent elderly, and to supports for people with impairments.

Careful research has revealed that labor force participation among the elderly is closely related to the impact of taxes and, in particular, to the gain or loss in the expected lifetime value of pensions resulting from continued work. In pioneering work with an international team of scholars from twelve developed countries, Jonathan Gruber and David Wise showed that the proportion of the elderly population that has left the labor force closely correlates

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\(^{7}\) *Pensions at a Glance*, pp. 150-151

\(^{8}\) *The 2013 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*. The absolute number of immigrants is not projected to change materially, but the number of births and deaths is projected to vary. Hence, the projected share of population growth represented by immigration varies over time.

\(^{9}\) https://www.cia.gov/library/publications/the-world-factbook/geos/ja.html
with what they called ‘tax force,’ the reduction in net earnings caused by direct taxation and by the reduction in the expected present lifetime discounted value of pensions from deferring retirement, which they call “pension wealth.”

What this all means is that changes in pension policy affect the fiscal burden of population aging in two ways: by directly changing spending on the elderly, and by influencing the labor supply and potential GDP.

III. Some Features of the U.S. Pension System

U.S. pension expenditures relative to GDP are and will remain comparatively low for three reasons. First, the ratio of benefits to earnings in the United States is lower than it is in most other developed nations. One measure of pension generosity—the ratio of the discounted present value of pensions to earnings—is comparatively low in the United States—5.9 times annual earnings for an average earner. By comparison, the ratio is 6.5 in Japan, 8.2 in Germany, 9.5 in France, and an average of 9.3 throughout the OECD. Only in Great Britain and Mexico, among members of the OECD, do average earners have lower pension wealth relative to earnings than in the United States.

Furthermore, current U.S. law is scheduled to lower benefits, relative to earnings, by approximately 7 percent over the next decade for new retirees.

Second, U.S. birth and immigration rates are relatively high. Among developed nations, only France has a higher fertility rate. If both fertility and net migration rates are maintained, U.S. population is projected to grow more rapidly over the long term than that of any other developed country. Third, U.S. life-expectancy at birth is lower than that of any other developed nation, save Russia.

In calendar 2014, U.S. Social Security pension benefits are estimated to equal 5.1 percent of GDP. This share is projected to rise gradually over the succeeding two decades, reaching 6.2 percent of GDP in 2035. Under the central projection of the Social Security Trustees, the cost of Social Security will go no higher for the rest of this century. It may be hard for those close to the challenge of population aging in Japan to appreciate just how minor is the U.S. fiscal challenge from increased pension costs.

Such projections are, of course, subject to considerable uncertainty. In recognition of that uncertainty, the government includes what are called ‘high cost’ (projection III) and ‘low cost’ projections (projection I) (see figure 1). Under the low-cost projection, Social Security

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11 Pensions at a Glance, 2013, OECD and G20 Indicators, p. 147
12 The high-cost (low-cost) projections group cost increasing (decreasing) assumptions such as low (high) birth rates, high (low) productivity growth, high (low) immigration rates, and so on, regardless of whether the combinations of assumptions make economic or social sense. Thus, these projections provide upper- and lower-bounds on the share of GDP likely to be absorbed by Social Security. The Social Security actuaries have also begun to publish so-called ‘stochastic’ projections that provide probability bounds for long-term costs and revenues. The 95-percent confidence interval for these stochastic projections is narrower than the range spanned by the high- and low-cost projections.
outlays top out at 5.5 percent of GDP in 2035 and then fall slightly. Under the high-cost projections, Social Security outlays will rise steadily throughout the seventy-five-year projection period and reach 8.1 percent of GDP in 2090.

These shares are well below those of most other countries. Pension outlays in Japan exceeded 5 percent of GDP by 1980, are now over 10 percent of GDP, and are projected to rise still farther. Pension costs currently exceed 10 percent of GDP in 14 of the 28 OECD members,\(^\text{13}\) well above even the high-cost projections of the Social Security Trustees.

**Trust Fund Financing**

U.S. retirement, disability, and survivors pensions are managed through “trust funds” that exist within the overall U.S. government budget. Nonetheless, they impose a discipline on pension financing distinct from that imposed by the budget. By law, all benefits and administrative expenses can be paid only from these trust funds. As a result, current spending

\(^{13}\) *Pensions at a Glance 2013*, table 6.7, p. 175.
cannot exceed current revenues plus accumulated reserves. All Social Security trust fund revenue comes from two earmarked taxes and from interest paid on government securities bought with the excess of past revenues over past outlays. The larger tax is a 12.4 percent payroll tax levied on earnings of nearly all workers up to a statutory ceiling that is indexed to average earnings. The smaller tax is a portion of the income tax equal to the added revenue resulting from the inclusion in gross income of a portion of Social Security pension benefits.

Projections are amended and published annually. The last projection, issued in 2013, indicated that revenues in calendar year 2014 of $898 billion ($800 billion from earmarked taxes and $98 billion from interest earnings on accumulated trust fund reserves of $2.8 trillion) will exceed outlays of $875 billion, and that reserves would therefore increase by $23 billion.

Trust fund revenues and expenditures of Social Security and the U.S. Postal Service are legally “off-budget.”14 The rest of government operations are regarded as “on-budget.” As far as budget policy is concerned, the legal distinction is close to meaningless. Reports on budget surpluses or deficits and projections of long-term fiscal balance always refer to “on-budget” and “off-budget” operations combined. But the distinction is meaningful and important for political—and, therefore, economic—reasons. And a peculiar and confusing situation has arisen. Projections now indicate that the U.S. ratio of federal government debt to GDP will rise little and slowly over the next two to three decades if current policy is unchanged. Small tax increases or spending cuts could stabilize the projected debt/GDP ratio at an acceptable level. At the same time, the Social Security trust funds face a long-term imbalance. Total revenues currently exceed outlays. But this situation will turn around early in the next decade and from that time forward, outlays are projected to exceed revenues. As projections always cover a seventy-five year ‘window’ starting in the year the projection is made, each year the projection period includes one less ‘surplus’ year and one more ‘deficit’ year. Thus, the trust-fund imbalance tends to widen from one year to the next with no change in policy because of the passage of time. New economic or demographic information or improved projection methods may offset or intensify this underlying trend.

Why the Trust Funds Were Created. The authors of the U.S. Social Security system created the trust funds because they believed that they would have two beneficial effects. First, they hoped that the trust funds would protect Social Security from political attack. If workers paid taxes on the same earnings used to compute their benefits, and if those revenues were deposited in a bank-like entity—the trust funds—the workers would view pensions as something they had earned and to which they were rightfully entitled. That belief would make it politically difficult for legislators to cut or end benefits, a possibility that many took seriously in light of the strong opposition to the program when it was enacted. The fear remains real as critics continue to call for deep benefit cuts or for full or partial replacement of the current system with individual savings accounts. Furthermore, if people regarded the

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14 The annual deficit of the U.S. Postal Service is also ‘off-budget,’ but it is tiny compared with Social Security.
benefits as ‘earned,’ they would claim them without suffering any of the stigma that many Americans attach to receipt of something for which they have not paid.

Second, trust fund accounting would deter legislators from making politically appealing, but fiscally future benefit promises, most of the cost of which would arise after they had left office. The trust fund framework requires legislators to account for long-term costs of any new benefits. Furthermore, unless the system is in surplus, they must enact new taxes to pay for these added benefits. In addition, whenever a shortfall might emerge—for example, because of declining birth rates or reduced economic growth—the annual reports on the seventy-five year prospects of the trust fund would highlight the gap and create pressure to take early steps to close them. Thus, trust funds would discourage legislators both from cutting benefits and from irresponsibly raising them, and they would goad legislators to close funding gaps.

I believe that advocates of trust fund financing have been proven mostly correct. Social Security is enormously popular, supported by sizeable majorities across the political spectrum. Most Americans of all political parties strongly resist benefit cuts. People claim Social Security benefits without shame, even when the benefits greatly exceed taxes paid on their behalf. In this respect, Social Security contrasts starkly with receipt of income- and means-tested benefits, which many people are embarrassed to claim. Benefits have not been expanded without accompanying means to pay for them.\(^{15}\)

In one respect, the trust funds have failed to enforce the intended discipline. The U.S. political system has tolerated projected deficits for extended periods, provided that reserves and current revenues are adequate to pay current benefits. Social Security is running, and for the last quarter century has run, cash-flow surpluses at the same time that long-term projections show that anticipated revenues are insufficient to pay all benefits over the succeeding seventy-five years. Trust fund reserves now total $2.8 trillion and are still growing slowly. But cash-flow deficits are projected to emerge in about a decade. If the law is unchanged, growing cash-flow deficits will deplete reserves in about two decades. As benefit payments cannot exceed current revenues supplemented by any accumulated reserves, benefits would be cut by about one-fourth at that point if current law remains unchanged (see figure 2).

Trust fund revenues and spending are part of overall government revenues and spending, but are reported separately. The central point is that either the overall budget or the trust funds may be in balance while the other is not. The United States currently is well on its way to stabilizing, and quite possibly reducing, its debt/GDP ratio even as the Social Security

\(^{15}\) A major increase in benefits in 1972 might seem to be an exception. Actuaries had previously ignored growth of wages and prices in doing long-term projections. Roughly every two years they ‘discovered’ that inflation and wage growth had boosted revenues beyond their previous projections and that benefits were decaying in real value. In recognition of increased prices and wages, legislators raised benefits, typically during election years. In 1972, the actuaries began to take explicit account in their projections of anticipated increases in earnings and prices. When they did so, it became apparent that under reasonable assumptions, given tax rates would support pensions approximately 20 percent than were then on offer.
trust funds remain out of long-term balance. The trust-fund imbalance generates pressure to cut benefits and to raise revenues in order to restore trust fund balance, even if such changes may not be the preferred way to stabilize the debt/GDP ratio.

Although the fiscal challenge from population aging facing the United States is modest, some analysts have pointed out that allocating as large a portion of adult lives to retirement as is implicit in current retirement policy will require levels of saving and taxation to which Americans are unaccustomed. Furthermore, if one measures ‘age’ by remaining life-expectancy, rather than the number of years since birth, continuing improvements in longevity will result in ‘earlier’ retirement—that is progressively longer retirement—if workers

Figure 2. “Scheduled benefits” refers to benefits promised by the statutory formula relating benefits to earnings. “Payable benefits” refers to the benefits that statutory tax rates (plus accumulated reserves) will be sufficient to pay for


Payable benefits as percent of scheduled benefits:
2012-32: 100%
2033: 77%
2087: 72%


continue to withdraw from the labor force at the same chronological age as in the past.

Automatic Equilibration

When mortality and birth rates fall, some aspects of pensions must eventually change. Tax or contribution rates by active workers may increase. The duration of benefit payments may be cut by raising the age at which they can be claimed. Or per person pension amounts payable at each age may be reduced. These changes can come about through ad hoc legislation or through changes based on some previously enacted formula. From a technical standpoint, neither approach rigidly determines what adjustment will be made. From a practical standpoint, they shape debate and influence the outcome. Thus, debates about baselines and about adjustment formulas are actually disguised debates about long-term pension policy.

Most pension systems have always contained some elements of automatic adjustment. But until recently, most adjustments were ad hoc. The U.S. social security system contains some automatic adjustment provisions. But recently several nations have added other automatic adjustments for changes in longevity to their public pension system systems. Linking key provisions to changes in economic conditions, demographic trends, or behavioral trends means that when circumstances change, benefits, taxes, or both change without further legislation. Formula adjustments reduce the frequency of political debate about the proper structure of the pension system. Such automatic features have important advantages. Debates about social insurance are often divisive. Actions to close funding gaps may be delayed, and the delays can be costly. The nature of outcomes depends in part on the political views of the government that happens to be in control when legislation is required and are therefore somewhat random. Well-crafted automatic adjustments reduce the risk that deficits will persist and grow. But automatic features forestall financial imbalances in a particular way. They may delay or prevent desirable reconsideration of the proper structure of pension plans.

The U.S. pension system contains several automatic adjustment provisions. Pensions are based on average earnings in the thirty-five highest earnings years. Only earnings below a statutory ceiling are counted in computing benefits. That ceiling is adjusted annually by an index based on growth in total earnings in jobs covered by the payroll tax. When workers reach age 60, all past earnings are adjusted according to a wage index. This approach is similar to computing an average of each worker’s relative position in the earnings distribution

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18 Wage indexation stops at age 60 for administrative reasons. Wage indices are not as quickly available as price indices. Because workers may claim benefits as early as age 62, earnings are indexed only for prices after the worker turns age 60. In principle, retroactive adjustments could be made for the difference between wage and price indices, but ordinarily they are not. Retroactive adjustments are made for earnings received at any time that are higher the indexed earnings in any year that was included in the benefit formula.
over thirty-five years and then multiplying that index times economy-wide average earnings when the worker is age 60. The benefit formula applied to this earnings average is progressive in the sense that the ratio of benefits to earnings declines with average earnings. The benefit formula is also adjusted according to a wage index. If certain conditions are satisfied, progressivity of initial benefits over the entire earnings distribution remains constant over time, and real, price-inflation-adjusted benefits remain constant after they are initially computed. Price indexing means that, to the extent that wages rise faster than prices, pensions do not keep pace with current living standards of active workers, once pensions are computed.

In fact, changes in the distribution of earnings and demography have affected the finances of the Social Security system and the progressivity of benefits among groups and over time. U.S. earnings inequality has increased dramatically over the last four decades. As a result, the proportion of earnings in excess of the taxable ceiling—and therefore not used in computing benefits—has risen. The reduction in the proportion of earnings subject to tax has contributed to the current projected long-term trust fund deficit. It does so because the benefit formula is indexed to the change in average earnings, including those that are above the ceiling that are not subject to tax. To the extent that earnings growth occurs above the taxable earnings ceiling, it raises benefits but not revenues. If the ceiling on earnings subject to tax were set so that 90 percent of covered earnings were taxed, the level set in the last major legislation in 1983, the projected gap between spending and revenues over the next seventy-five years would be reduced by about one-third.

Improvements in U.S. mortality rates in recent years have been highly unequal across income classes. U.S. life expectancies and average incomes have long been positively correlated. The Social Security benefit formula is progressive. The ratio of benefits of high earners to their earnings is lower than that of low-earners. But high-earners on the average live longer than do low earners and, hence, receive benefits for more years than do low earners. Differences in life expectancy have always offset some of the progressivity of the benefit formula. In recent years, however, the longevity gap has widened. Life-expectancies of low earners have changed little, while longevity of high earners has increased considerably. Furthermore, Social Security pensions comprise a much larger fraction of total income for low- than for high-earners, as high earners are more likely to have private pensions and sizeable personal savings. The pensions of those who live to very advanced years tend to fall relative to current earnings because Social Security benefits are price-indexed and because

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19 The benefit formula is step-wise linear. Benefits in 2014 are equal to 90 percent of average monthly earnings up to $816 per month in 2014 (the first ‘bend point’), plus 32 percent of average monthly earnings from $816 to $4,917 per month (the second ‘bend point’), and 15 percent of average monthly earnings above $4,917 per month up to the maximum earnings included in computing benefits. The bend points are adjusted annually based on a wage index.


private pensions usually are not indexed at all. In addition, people commonly deplete other assets as they age. These two trends—widening income-related gaps in longevity and the decline of resources among the very old—are obviously relevant to the question of how projected trust fund deficits should be closed. But their interrelationship is often ignored. Proposals have been put forward either to cut future benefits across the board or to cut them differentially for high earners. Combining two modifications in benefits would address both developments. Initial Social security benefits paid to higher earners could be cut, while initial benefits to lower earners are maintained or even increased. At the same time, an age-related increase in benefits could be added.

U. S. law, unlike that of Japan, contains no automatic changes in the Social Security benefit formula or in tax rates to offset the added costs of rising longevity. Some have proposed automatic across-the-board cuts in newly awarded benefits as benefits increase. Simply raising the age of initial eligibility for benefits would not reduce the projected deficit in the Social Security trust fund, although it would reduce projected budget deficits.\textsuperscript{22} A major obstacle to the adoption of an automatic adjustment formula is deep political disagreement on the degree to which trust fund balance should be restored by raising taxes or cutting benefits. Perhaps more fundamentally, the choice of how to adjust to population aging should depend on its source, declining birth rates or declining mortality rates, the pace at which labor productivity is increasing, trends in economic inequality, and other factors.

Restoring long-term balance in the Social Security trust funds is technically easy. The gap is not large. But U.S. political divisions make enactment of reforms impossible at this time. One political party will not accept any tax increases, even if their implementation is deferred. The other party will not tolerate exclusive reliance on benefit cuts to restore long-term balance. Because benefits can be paid for roughly 20 years even if no legislation is enacted and neither party has the political means to impose its will, nothing is likely to be done any time soon to close the long-term imbalance.

\textbf{IV. Health Care Spending}

In recent years, analysts have regarded spending on health care as the most serious challenge to fiscal sustainability in the United States. Health care spending has grown faster than income in the United States by an average of 2-2½ percentage points per year for several decades. This gap had little overall fiscal significance as long as health spending was low. Furthermore, the U.S. budget was in surplus as recently as the late 1990s. Projections then

\textsuperscript{22} Raising the age of initial eligibility for retirement pensions would reduce spending in the near term. But the benefits for people who delay claiming was set to increase benefits enough so that the present discounted value of lifetime benefits would be approximately unchanged on the average. Because life-expectancy has increased since the formula was set in place, delays in claiming actually slightly increase the present discounted value of lifetime benefits. Furthermore, raising the age of eligibility for retirement benefits would cause some people who now claim discounted retirement benefits to apply for disability benefits, which are not discounted.
indicated that surpluses would continue for many years. Some observers even feared that surpluses would be so large and continue for so long that the federal government would buy back all outstanding U.S. government debt, making it difficult for the Federal Reserve system to carry out open-market operations. In the very long term, increases in public spending on pensions and health benefits were expected eventually to push the budget back into deficit if taxes were not raised. But not for quite a long time.

This budgetary euphoria did not last long. After the inauguration of president George W. Bush in 2001, taxes were cut. Two recessions occurred during the first decade of this century. Two wars in the Middle East pushed up spending on the military and homeland security. Near-term surpluses vanished. Large current deficits and even larger projected deficits replaced them. Fear spread that debt/GDP ratios would grow explosively.

By 2009, publicly financed health care spending reached 6.7 percent of GDP (private health care spending was even larger). Furthermore, the inevitable aging of the large cohorts born in the decades immediately following the end of World War II guarantees that the population over age 65 will grow—from 43.5 million in 2012 to an estimated 79.3 million in 2035; and most of the spending on health care for the elderly, as well as that for people with disabilities and low incomes, flows through public budgets.

The anticipated ‘excess growth’ of health care spending and the rising proportion of the population eligible for publicly supported health care interact multiplicatively. The results were projections of explosive growth in the share of GDP devoted to public health care spending. Budget projections also indicated that public spending on everything other than health care would grow no faster than GDP. Projected public spending on health care accounted for all of the anticipated fiscal gap. To be sure, as the aged and disabled populations increased, some growth in public spending on health care was inescapable, provided that the elderly and disabled received health care approximately equivalent to that enjoyed by the rest of the population. But without the anticipated ‘excess growth’ of per person health care spending, this fiscal challenge would have been easily managed.

As recently as five years ago, U.S. fiscal prospects looked worrisome. But conditions have greatly improved recently for three reasons; and further improvements may well materialize. Congress raised taxes. It lowered projected spending on most government programs other than pensions and health care. And growth of health care spending has slowed. Between 2002 and 2012, potential GDP grew at annual rate of 2.2 percent, and the Congressional Budget Office projects that rate of growth to remain unchanged over the next decade. Over the five years 2007-2012, health care spending (based on a GDP deflator) rose at an annual rate of 2.4 percent.

The importance of the revised outlook for health care spending is difficult to exaggerate (see tables 1 and 2). Careful independent projections also indicate that the ratio of debt to GDP will remain roughly constant over the next decade and will rise very slowly in later

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years (Figure 3). The size and abruptness of these revisions have revealed the extreme sensitivity of these long term projections. Small percentage changes in projected growth of

Table 1. Projections of Medicare Spending

<table>
<thead>
<tr>
<th>Year of Projection</th>
<th>Medicare percent of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2030</td>
<td>5.12, 3.88</td>
</tr>
<tr>
<td>2050</td>
<td>7.63, 5.98</td>
</tr>
<tr>
<td>2070</td>
<td>10.03, 6.4</td>
</tr>
</tbody>
</table>

Source: Report of Medicare Trustees

Figure 3.

important variables produce large long-term effects when compounded over many years. This sensitivity means that it is unwise to rely on projections of the distant future to justify abrupt and immediate policy changes with large long-term implications.

Such projections are rife with uncertainty, and the uncertainties run both ways. Modest additional spending cuts and/or revenue increases would stabilize U.S. debt/GDP ratios and might even cause them to fall. If recent spending cuts were reversed without offsetting tax increases, rising debt/GDP ratios could again become worrisome. Another major recession over the next decade would both raise spending and lower revenues. On the other hand, official projections (column 1 of table 2) continue to assume excess growth of health care spending. Were the recent slow-down in growth of health care spending to continue, health care outlays would fall below projections by growing amounts and the debt/GDP ratio would be projected to fall.

Analysts are disagreed on whether the growth of U.S. health care spending will remain low, go lower still, or rebound toward the very high rates that prevailed for many years. Skepticism that the slowdown will persist is reasonable. Past slowdowns in the growth of health care spending have been short-lived. But a good case can be made that this time is different.\(^{24}\) The structure of the U.S. health care payment and delivery system is evolving. Physicians are increasingly being paid on salary, rather than on a fee-for service basis. Financial incentives to slow growth of spending are being introduced, and new organizational forms are taking root. The recently enacted health reform legislation contains many experiments, pilots, and demonstrations of new methods of payment and organization. The United States now spends so much more on health care than other countries do, and the price

| Table 2. Projections of Total Federal Health Care Spending |
|--------------------------------------|--------------------------------------|
| **December 2007** | **September 2013** |
| Medicare, Medicaid, and Health Reform Subsidies | percent of GDP |
| **(1)** Baseline assumptions | **(2)** No ‘excess’ growth of health care spending |
| 2020 | 6.1 | 5.6 | 5.5 |
| 2030 | 8.3 | 7.1 | 7.0 |
| 2050 | 12.5 | 9.9 | 7.1 |

Source: Congressional Budget Office

of individual services is so much higher than in other countries, that opportunities for large savings abound.

V. The Overall Economy

Long-term fiscal sustainability depends not only on spending and tax policy, but also on overall economic growth. Under conditions such as those in the United States, where baseline budget projections show that the debt/GDP will be stable for the next decade and then rise only a little bit, small increases in labor supply or labor productivity would go far toward stabilizing the debt/GDP ratio.

A recent study in which I was involved showed that plausible shifts in labor supply have a sizeable impact on long-term budget balance. Labor force participation among U.S. men over age 55 fell steadily for decades. That trend ended during the late 1980s and early 1990s (figure 4). Participation rates in those age groups have risen sharply since then (figure 5). Official projections of U.S. public pension costs assume that participation rates of both men and women will not increase much in the future.

Gary Burtless and I undertook to measures the impact on gross domestic product, government spending, revenues, and incomes should increases in labor force participation of older workers continue at the same rate as in the recent past. The results of that study

Figure 4. Youngest age at which fewer than 50% of men are in active labor force (in years)

Source: Gary T. Burtless, presentation, Brookings, December 7, 2012

indicate that over the period 2010 to 2040, increased labor force participation among workers over age 55 would boost revenues by $2.1 trillion, lower government spending by $2.0 trillion, and reduce outstanding debt by $4.1 trillion (table 3). Furthermore, increased labor force participation would sharply lower income inequality among older age cohorts (figure 6). The reason is that labor force participation among upper-income and well-educated members of older U.S. age cohorts is already comparatively high. Most of the increase in work and associated earnings would occur among those who would have little or no current

Table 3. Cumulative Increase in Government Revenues Plus Cumulative Decrease in Government Spending from increased labor supply among older age cohorts 2010-2040

<table>
<thead>
<tr>
<th></th>
<th>trillions of dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spending*</td>
<td>- $2.103</td>
</tr>
<tr>
<td>Revenues</td>
<td>+ $1,979</td>
</tr>
<tr>
<td>Total</td>
<td>+ $4,082</td>
</tr>
</tbody>
</table>

* includes reduction of interest payments from reduced federal debt

earned income unless labor force participation increases.

Although labor force participation among older age cohorts, both men and women, has been increasing, trends for ‘prime age’ men and women are quite different. The decades-long increase in labor force participation of women came to a halt in the mid-1990s. Labor force participation of prime age men has been trending down for decades (see table 4). The

Table 4. U.S. Labor Force Participation Rates

<table>
<thead>
<tr>
<th></th>
<th>1950</th>
<th>1990</th>
<th>2010</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Males</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-44</td>
<td>.907</td>
<td>.876</td>
<td>.823</td>
<td>.839</td>
</tr>
<tr>
<td>45-64</td>
<td>.918</td>
<td>.806</td>
<td>.787</td>
<td>.759</td>
</tr>
<tr>
<td>65+</td>
<td>.438</td>
<td>.163</td>
<td>.221</td>
<td>.226</td>
</tr>
<tr>
<td>16+</td>
<td>.863</td>
<td>.764</td>
<td>.723</td>
<td>.687</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-44</td>
<td>.387</td>
<td>.714</td>
<td>.683</td>
<td>.723</td>
</tr>
<tr>
<td>45-64</td>
<td>.332</td>
<td>.593</td>
<td>.661</td>
<td>.616</td>
</tr>
<tr>
<td>65+</td>
<td>.097</td>
<td>.086</td>
<td>.143</td>
<td>.166</td>
</tr>
<tr>
<td>16+</td>
<td>.339</td>
<td>.575</td>
<td>.580</td>
<td>.562</td>
</tr>
<tr>
<td><strong>All</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-44</td>
<td>.636</td>
<td>.794</td>
<td>.753</td>
<td>.781</td>
</tr>
<tr>
<td>45-64</td>
<td>.621</td>
<td>.695</td>
<td>.722</td>
<td>.686</td>
</tr>
<tr>
<td>65+</td>
<td>.267</td>
<td>.118</td>
<td>.177</td>
<td>.193</td>
</tr>
<tr>
<td>16+</td>
<td>.592</td>
<td>.665</td>
<td>.650</td>
<td>.623</td>
</tr>
</tbody>
</table>

Source: Stephen C. Goss, “Choosing to Work During Retirement and the Impact on Social Security,” Testimony to Committee on Finance, United States Senate, 15 July 2010
financial crisis and the ensuing recession caused the proportion of the overall population that is employed to drop by more than 5 percentage points in the United States (figure 7). Despite gradual increases in U.S. employment and a sizeable drop in the unemployment rate since the official end of the recession, the U.S. employment/population ratio has remained depressed. Population aging is part of the explanation. Even if age-specific participation rates had not unchanged, the employment population ratio would have fallen because the average age of the population is rising. It is estimated that this factor accounts for roughly half of the drop shown in chart.

Labor force participation among older age groups in many other countries (table 5 and

Figure 7. Employment Population Ratio—percent Age 16 and over

Source: Bureau of Labor Statistics,
http://data.bls.gov/pdq/SurveyOutputServlet
Economic Research, Federal Reserve Bank of St. Louis
http://research.stlouisfed.org/fred2/graph/fredgraph.pdf?id=JPNEPRNA
figures 8 and 9). Without full modeling of the characteristics of workers who would be brought into the labor force—age, education, sex, work experience—one cannot give well-grounded estimates of the impact of their entry on GDP, taxes, and public spending. But the study that Burtless and I did—of the impact of an increase in labor supply of only one part of the age distribution in one country, the United States—suggests that increased labor supply could go a long way toward softening the fiscal impact of population aging.

Table 5. Male Labor Force Participation Rates and Changes Ages 65 and above

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>16.9</td>
<td>-1.6</td>
<td>7.2</td>
</tr>
<tr>
<td>Canada</td>
<td>17.1</td>
<td>-3.3</td>
<td>7.1</td>
</tr>
<tr>
<td>Finland</td>
<td>13.2</td>
<td>-11.5</td>
<td>7.6</td>
</tr>
<tr>
<td>Germany</td>
<td>7.1</td>
<td>-2.6</td>
<td>2.9</td>
</tr>
<tr>
<td>Italy</td>
<td>6.2</td>
<td>-6.2</td>
<td>-0.3</td>
</tr>
<tr>
<td>Japan</td>
<td>28.6</td>
<td>-3.7</td>
<td>-8.7</td>
</tr>
<tr>
<td>Korea</td>
<td>41.6</td>
<td>-4.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Netherlands</td>
<td>10.8</td>
<td>0.6</td>
<td>5.5</td>
</tr>
<tr>
<td>Norway</td>
<td>23.1</td>
<td>-19.0</td>
<td>7.8</td>
</tr>
<tr>
<td>Portugal</td>
<td>21.7</td>
<td>-6.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Spain</td>
<td>2.7</td>
<td>-9.7</td>
<td>-0.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>19.3</td>
<td>-0.4</td>
<td>5.4</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>12.5</td>
<td>-0.7</td>
<td>4.3</td>
</tr>
<tr>
<td>United States</td>
<td>23.6</td>
<td>-2.2</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Source: OECD
Figure 8. Change in Male Labor Force Participation Rate, by Age Group, in the U. S. and Europe, 1994-2007 (Percentage point change)

Source: OECD and Eurostat labor force statistics
Figure 9. Change in Women’s Labor Force Participation Rate, by Age Group, in the U. S. and Europe, 1994-2007 (Percentage point change)


Source: OECD and Eurostat labor force statistics
Conclusion

Population aging is a world-wide phenomenon. But its fiscal impact differs enormously, depending on both the level and rapidity of change in birth and mortality rates, the levels and trends of pension and health benefits, and productivity growth. Population aging will produce some fiscal pressure in the United States, as it will in other nations. But this pressure in the United States will be comparatively mild, because pension benefits are relatively low and because birth and mortality rates are comparatively high. U.S. health care spending is very high and will be worrisome if past rapid growth resumes. But if the United States manages to hold down the growth of health care spending, the fiscal challenges from population aging should be mild and easily met, giving it ample room to deal with the other, far more serious problems.