Alan Greenspan: Aging global population

Testimony of Mr Alan Greenspan, Chairman of the Board of Governors of the US Federal Reserve System, before the Special Committee on Aging, U.S. Senate, Washington, D.C., 27 February 2003.

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Mr. Chairman and other members of the committee, I am pleased to be here today to discuss the economic effects of the aging of the global population. In so doing, I would like to emphasize that the views I will express are my own and do not necessarily represent those of the Federal Reserve Board.

The world's population is growing older as a result of both declining fertility and increasing life expectancy. These trends manifest themselves in at least two important dimensions: a more slowly growing population and labor force, and an increase in the ratio of the elderly to the working-age population.

The so-called elderly dependency ratio has been rising in the industrialized world for at least 150 years. The pace of increase slowed greatly with the birth of the baby-boom generation after World War II. But elderly dependency will almost certainly rise more rapidly as that generation reaches retirement age. The acceleration will be particularly dramatic in Japan and Europe. For example, in Japan the population share of the elderly, defined here as those at least 65 years of age, climbed from 12 percent to 17 percent in the past decade, and demographers expect it to reach 30 percent by 2030. The absolute size of Japan's working-age population is already declining and is projected to fall 20 percent over the next three decades. Europe's working-age population is also anticipated to recede, and the share of the elderly in its overall population is expected to rise markedly, though less so than in Japan.

The changes projected for the United States are not so severe as those projected for Europe and Japan, but nonetheless present daunting challenges. Over the next thirty years, the growth rate of the working-age population in the United States is anticipated to slow, from about 1 percent per year today to about 1/2 percent per year by 2030. At the same time, the percentage of the population that is over 65 will rise markedly - from less than 13 percent today to perhaps 20 percent by 2030.

Though the overall population is expected to continue to age, much of the aging of the labor force has already occurred with the aging of the baby-boom generation. Once the baby boomers begin to retire, the mean age of the U.S. labor force is expected to stabilize.

These anticipated changes in the age structure of our population and work force result largely from the decline in fertility that occurred following the birth of the baby-boom generation. After peaking in 1957 at about 3-1/2 births over a woman's lifetime, the fertility rate in the United States fell to less than 2 by the early 1970s, and then rose to about 2.1 by 1990.[1] Since then, the fertility rate has remained close to 2.1, the so-called replacement rate, or the level required to hold the population constant in the absence of immigration or changes in longevity. The decrease in the number of children per family since the baby boom has inevitably led, with a lag, to a projected increase in the ratio of elderly to working-age population.

Increases in life expectancy, too, have been substantial. In 1950, a man 65 years of age could expect, on average, to live until age 78, whereas now he can expect to live until over 81. And if current trends continue, by 2025 he can expect to live to 83 and, by 2060, to 85. Women's life expectancy is projected to increase about the same amount, from 81 in 1950 to roughly 85 today, 86 in 2025 and 88 in 2060.

Of course, it is difficult to predict the age structure of the population in the more distant future. Although we have a good idea of the size of the working-age population over the next twenty years or so - its members are largely already born - forecasting the number of children and future immigration and population growth is much more conjectural. Just recently, for example, the United Nations revised its forecast of world fertility rates downward from its projection only three years earlier;

[1] The fertility rate used here is the total fertility rate. It is measured as the average number of children who would be born to a woman in her lifetime if she were to experience the birth rates by age observed in any given year.

according to the new forecast, world population is expected to begin actually declining in the latter part of this century, whereas under the previous forecast, it was expected to continue growing.

Even with the substantial uncertainty that surrounds these forecasts, population aging in the developed world is not likely to be a temporary phenomenon, associated solely with the retirement of the baby-boom generation. Rather, under current projections, the retirement of that generation should be viewed as hastening the transition between the current distribution of age and one in which the population is notably older.

The populations in most developing countries likewise are expected to have a rising median age, but they will remain significantly younger and grow faster than our population over the foreseeable future. Eventually, declines in fertility rates and increases in longevity may lead to similar issues with aging populations in the developing world but likely only well after the demographic transition in the United States.

As you know, the aging of the population in the United States will have significant effects on our fiscal situation. In particular, it makes our social security and Medicare programs unsustainable in the long run, short of a major increase in immigration rates, a dramatic acceleration in productivity growth well beyond historical experience, a significant increase in the age of eligibility for benefits, or the use of general revenues to fund benefits.[2]

Indeed, according to the intermediate projection of the social security trustees, the level of social security contributions under current law begins falling short of legislated benefits by approximately 2017. While the prospect of a shortfall in social security is reasonably certain given the changing composition of the population, the range of possible outcomes in Medicare is far wider. Rapidly advancing medical technologies, essentially inelastic demand for medical services for the elderly, and a subsidized third-party payment system have created virtually unconstrained demand.[3]

How the financing pressures that accompany increasing retirement are resolved will have profound, but uncertain, effects on the structure of both private and public pension plans. Private pension assets already account for about 12 percent of household financial assets in the United States, a level that will almost certainly increase over the next decade. The total investment income of these funds, in conjunction with retirees' other forms of income, must be sufficient to finance a satisfactory standard of living.

The real resources available to fund pension benefits depend on the economy's long-term growth rate, which in its simplest terms is determined by the growth rate of labor employed plus the growth rate of the productivity of that labor. As already noted, by 2030 the growth rate of our working-age population is expected to decline by half.

The fraction of the working-age population actually employed will doubtless be affected by improvements in health or changes in the economic returns to working. Labor productivity has historically been affected by changes in the amount of capital available to each worker, the pace of technical progress and, perhaps more subtly, changes in the experience of our workforce. These elements are key to assessing the economic effects of aging.

One natural response to population aging will almost surely be for a more fit elderly population to increase their participation in the labor force. Americans not only are living longer, but they are generally living healthier. Rates of disability for the elderly have been declining, reflecting both improvements in health and changes in technology that accommodate the physical impairments that are associated with aging. In addition, work is becoming less physically strenuous but more demanding intellectually, continuing a century-long trend toward a more conceptual and a less physical economic output. For example, in 1900, only one out of every ten workers was in a professional, technical, or managerial occupation. By 1970, that proportion had doubled, and today those types of jobs account for about one-third of our workforce.

Despite the improving feasibility of work at older ages, Americans have been retiring at younger and younger ages. Some analysts believe this trend has slowed, although few anticipate a rapid

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[2] Because social security benefits are tied to productivity growth with a lag, only a rate of productivity growth well above historical experience could completely resolve social security's long-term financing problem.

[3] Constraining these outlays by any mechanism other than prices will involve some form of rationing - an approach that in the past has not been popular in the United States.

turnaround. But rising pressures on retirement incomes and a growing scarcity of experienced labor could induce greater labor-force participation.

Immigration, if we choose to expand it, could prove an even more potent antidote for slowing growth in the working-age population. As the influx of foreign workers in response to the tight labor markets of the 1990s showed, immigration does respond to labor shortages.

An expansion of labor-force participation by immigrants and the healthy elderly offers some offset to an aging population. However, it is heightened growth of output per worker that presents the greatest potential to boost the growth of gross domestic product. A significant rise in the growth of labor productivity will be necessary if the standard of living of retirees is to be maintained and that of workers is to continue advancing.

One of the more direct ways to raise growth in output per hour is to increase saving and investment, which augment the capital stock available to workers. Another is to increase the incentives for innovation; efficiency gains, broadly defined, currently account for roughly half the growth in labor productivity.

Though augmenting saving and investment should raise future labor productivity and thereby help provide for an aging population, the incremental benefit of additional investment may itself be affected by aging. Without a growing labor force, the amount of new equipment that can be used productively will be more limited, and the return to capital investment could decline as a consequence.

What actually happens to the saving rate in the next three decades will depend importantly on the behavior of the baby-boom cohort during their retirement years. Over the post-World War II period, the elderly in the United States, contrary to conventional wisdom, seem to have drawn down their savings only modestly. The reasons are not entirely clear. Often people bequeath a significant proportion of their savings to their children or others rather than spending it during retirement. If the baby-boom generation continues this pattern, then the U.S. household saving rate may not decline significantly, if at all.

The faster rates of aging in Europe and Japan may also directly affect investment and, hence, the growth of labor productivity here in the United States. If saving rates in these countries decline, global capital flows to the United States that have contributed significantly in recent years to financing domestic investment are likely to decline. As in the United States, much will depend on the extent to which retirees in these countries draw down their savings. For example, the saving rate in Japan, even with the rapidly aging population, has not declined to the extent that some had predicted. However, if households in Japan were to start consuming more and saving less, Japan's trade surplus would likely shrink as consumption of imported goods rose. Some of the elevated level of their imports would be exports from the United States, and our trade balance would improve, all else being equal.

Jobs requiring unskilled labor are likely to continue moving to developing countries, and this transfer may increase foreign direct investment by U.S. firms. Most other developed countries are unlikely to be able to offer higher rates of return because they are already aging faster than the United States.

Many developing countries have the potential to offer higher rates of return because of their younger and more rapidly growing populations and currently low stocks of capital, but the realization of this potential is far from guaranteed. Historically, returns to investment in many developing countries have been held down by several inhibiting factors: low levels of education, poor infrastructure, and, perhaps most important of all, capricious legal protections.

Clearly, if net capital inflows into the United States decline, so must our current account and trade deficits. Any such declines must be offset by higher domestic saving - including government saving - if domestic investment in plant and equipment and in housing are to be maintained.

Future labor productivity, however, is determined by more than just saving, investment, and capital intensity. One of the remarkable features of the economy over the past seven years or so has been the acceleration in the pace of innovative use of capital by workers, rather than increases in the amount of capital per worker. Indeed, as I pointed out earlier, such innovation accounted for about one-half of the rapid increase in labor productivity that we observed in the late 1990s. Therefore, it is important to address the possibility that aging will affect the rate of innovation, either through a rearrangement of existing capital resources or through technological advance.

Economists understand very little about how technological progress occurs, and research about the effects of aging populations on technological innovation has been sparse. On the one hand, some commentators have worried that an aging population will lead to a less dynamic economy and a lower

rate of technological progress; they cite, for example, the fact that the majority of Nobel prizes in the "hard" sciences were awarded for discoveries made by the winners early in their careers. Such issues may have less import going forward, however, as most of the aging of the workforce has already occurred. On the other hand, a slowed rate of growth or a decline in the working-age population may raise technological growth. Although discovery of new technologies is to some degree a matter of luck, we know that human activities do respond to economic incentives. A relative shortage of workers should increase the incentives for developing labor-saving technologies and may actually spur technological development. Economic historians have argued that one reason that the United States surpassed Great Britain in the early nineteenth century as the leader in technological innovation was the relative scarcity of labor in the United States. Patent records of this period show that innovation did respond to economic incentives and that the scarcity of labor clearly provided incentives to develop new methods of production.

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The aging of the population means that the government will inevitably need to make a number of changes to its retirement programs. These changes in themselves can have profound economic effects. For example, aside from suppressing economic growth, large increases in payroll taxes can exacerbate the problem of reductions in labor supply, whereas policies to promote longer working life can ameliorate it. Reductions in benefits - through changes to the age for receiving full retirement benefits or through reforms to slow the growth of Medicare spending or through other means - can affect retirement, the labor force, and saving behavior. In addition, policies that link increases in longevity over time to the eligibility age for social security, and perhaps Medicare, may need to be considered. Such linkages would help protect the financial and, hence, the economic viability of these programs.

The aging of the population is bound to bring with it many changes to our economy - some foreseeable, many probably not. Though the challenges here seem great, the necessary adjustments will likely be smaller than those required in most other developed countries. But how we adjust will also matter. Early initiatives to address the economic effects of baby-boom retirements could smooth the transition to a new balance between workers and retirees. If we delay, the adjustments could be abrupt and painful.

Fortunately, the U.S. economy is uniquely well suited to make those adjustments. Our open labor markets can adapt to the differing needs and abilities of our older population. Our capital markets can allow for the creation and rapid adoption of new labor-saving technologies, and our open society has been receptive to immigrants. All these factors put us in a good position to adjust to the inexorabilities of an aging population.