

P

olicy Implications of Population Aging

By Landis MACKELLAR & David HORLACHER

The economic problems associated with population aging are complicated and serious. However, the policy dialogue about aging has been much too pessimistic. Global aging is *not* a surging demographic *tsunami* that threatens to bankrupt every nation on earth. Such apocalyptic forecasts are not merely wrong; they invite overreaction and costly policy errors. They ignore the fact that many adjustment mechanisms and safety valves – some explicitly put in place by policymakers, others implicit in human behavior and institutions – are to be found in the socioeconomic systems of advanced nations. Less developed countries may be at somewhat greater risk from the adverse consequences of population aging, but they also may learn policy lessons from today's developed countries.

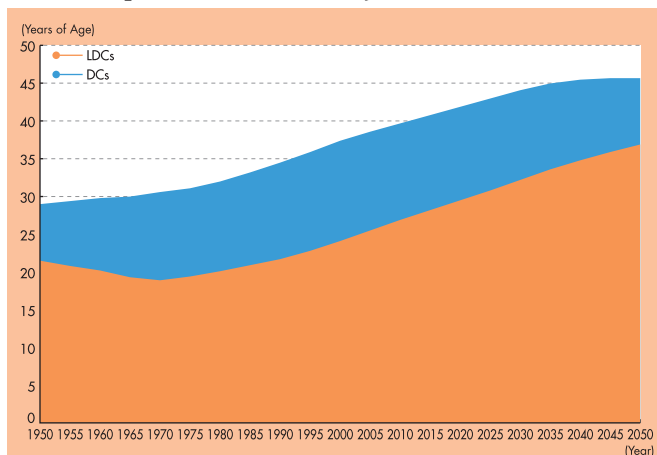
This article will highlight the practical policy options available to industrial countries, like Japan, where the process of population aging is most advanced.

Demographic Trends

The median age is increasing throughout the world. (*Chart 1*) However, if population aging is defined as the transition from a high support ratio (the working-age population, 15-64, divided by the elderly population, 65+) to a low support ratio, then world populations fall into two groups. In more developed countries, the support ratio is declining steadily from an already low base. In the less developed countries, the support ratio is declining more rapidly; but from a much higher base. (*Chart 2*)

Populations in the North will age “from the middle” of the age pyramid as persons in the large baby-boom cohort begin to retire.

CHART 1
Median age, developed/less developed countries, 1950-2050



Source: “World Population Prospects: The 2006 Revision.” United Nations Population Division

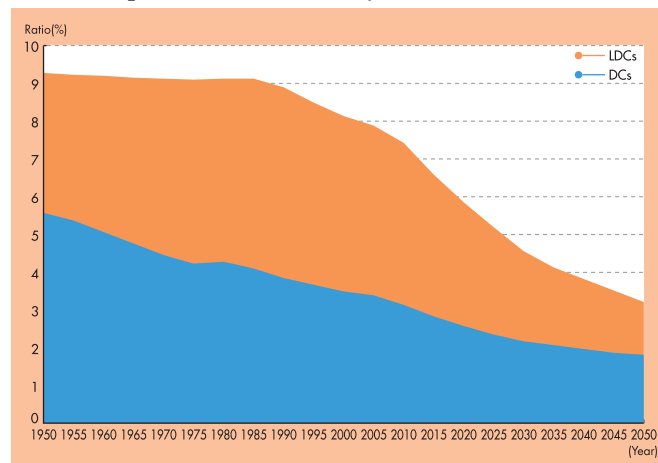
Populations in the South, by contrast, are aging “from the bottom,” meaning that as today’s young persons move into their working years, they are being replaced by a much smaller cohort of children. These demographic changes imply that labor force growth rates will decline rapidly in the North and turn negative after 2010 even as population aging is increasing the labor forces of the South.

The United States and Japan are unique. (*Chart 3*) In the former, the support ratio will remain roughly constant through 2010 (when the baby boomers begin to retire) and then will fall rapidly. In contrast, Japan’s postwar “baby boom” was very brief; hence sub-replacement fertility is the main driving force behind its precipitously falling support ratio.

Aging & Labor Force

While increased longevity and better health will encourage workers to work longer, rising income will encourage them to retire earlier. Furthermore, this tendency for early retirement has been accentuated by the expansion of public and private old-age pension systems. If economic conditions deteriorate, rising longevity, reduced disability and reduced incidence of chronic conditions could delay retirement. The reform of social security systems might also encourage workers to retire later. However, if economic growth continues to increase demand for leisure, governments will be hard-pressed to slow the trend toward earlier retirement. Japan, interestingly, has “bucked the trend” towards early retirement – the labor force participation rate of Japanese males over the age of 60 is far higher than anywhere else in the developed world.

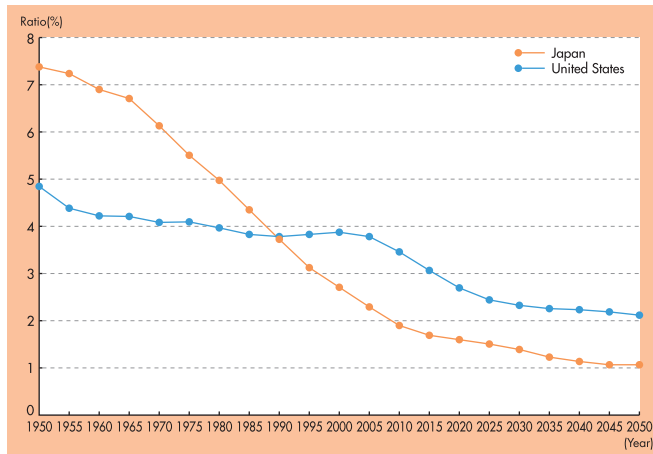
CHART 2
Support ratio, developed/less developed countries, 1950-2050



Note: Support ratio = Population aged 15-64 divided by population aged 65 or older
Source: “World Population Prospects: The 2006 Revision.” United Nations Population Division

CHART 3

Support ratio, Japan & United States, 1950-2050



Note: Support ratio = Population aged 15-64 divided by population aged 65 or older
 Source: "World Population Prospects: The 2006 Revision." United Nations Population Division

Unfortunately, firm-level policies impede the smooth re-absorption of the "boomer" cohort of older workers back into the workplace. In order to encourage worker loyalty, firms pay younger workers less than their marginal product and older workers more. Hence, firms with an aging workforce face rising unit labor costs. Arguably, firms should flatten the age-earnings profile, and keep older workers on the job. But they fear alienating younger workers, who will correctly perceive that there is no reward for long-term service. Furthermore, the structure of pension plans and health insurance programs dramatically raises the cost of older workers.

Firms can escape this predicament by "pensioning off" elderly workers. They can also sharply reduce pension accrual rates after a certain age, causing many to leave their firms voluntarily. By encouraging workers to retire, firms transfer a significant portion of the costs of an aging labor force to the social insurance system. But this only delays the day of reckoning. Eventually, fiscal pressures will force policymakers to scale back the social insurance programs that encourage workers to retire at a relatively young age.

However, even when governments do act, there are limits to what they can accomplish. Changing the behavior of firms and unions is likely to be more important than changing the public pension rules. Eliminating the penalties implicit in the firm's pension arrangements would increase the labor supply far more than eliminating social security early-retirement options.

Despite fears that have been expressed, retaining the elderly in the workforce need not reduce average labor productivity. Older workers have lower rates of absenteeism, are less likely to move to another employer, and require less supervision than younger workers. They have been sorted and matched to their tasks. Although they have fewer expected years on the job, older workers have

lower inter-firm mobility as well, so the return on training older workers compares favorably with that of their younger counterparts.

Aging, Saving, & Investment

Fears that population aging will put downward pressure on household saving rates are based on the life-cycle hypothesis (LCH), according to which individuals save while young in order to maintain consumption after they retire. The implication of this hypothesis is that "aging from the middle," in developed countries, will put downward pressure on household savings by shifting population out of the prime saving years into the years when aging households dissave.

When government balances in industrial countries are projected, the result is invariably that population aging will give rise to a flood of red ink. Without higher taxes or reduced public expenditure, widening government deficits would more than wipe out private-savings increases, with a large gap emerging between the supply of savings and the demand for investment.

However, a lower saving rate is not necessarily a bad thing. With slower labor force growth, per capita output growth can be sustained with lower savings and investment. Alternatively, if the saving rate remains constant as labor force growth slows, the result will be a rising capital-labor ratio, higher wages, and a lower real rate of return to capital. The proper response to this is a reduction, not an increase, in the national saving rate.

The population aging policy debate has often stressed the need to mobilize greater savings through pension reform. Yet, even if there really were a need for greater savings, it is doubtful that changing pension arrangements can actually mobilize them. For most economies, there are only three possible strategies to finance the consumption of the non-working elderly:

- Current workers can transfer income to the current non-working elderly; either directly through the family or indirectly through a balanced Pay AS You GO (PAYG) public pension system.
- The state can borrow to finance the consumption of the non-working elderly through the public pension system while leaving payroll taxes unchanged. In either of these two cases, population aging will reduce the aggregate saving rate.
- Today's workers can save, either privately or through a capital-reserve or fully funded public pension system, to finance their own retirement. In this case, the projected age-structure trends in developed countries will increase saving rates as members of the baby-boom cohort move through their peak saving years. This scenario is sometimes referred to as the "Second Demographic Dividend."

Whichever approach is followed, the goods consumed by the elderly must still come out of current production, and thus offset potential savings one for one. All else being equal, therefore, an older society will save less, as the ratio of producers to consumers will fall.

The advantage of an accumulation-based public pension system is that in the medium term, higher savings will translate into higher capital accumulation, which will result in higher output in the long term. The future young also benefit, in the form of more capital per worker and hence higher wages. The fundamental problem is what to do about the transition cohorts, who face the prospect of paying twice – first to honor commitments under the existing PAYG-financed system and second to accumulate the capital reserve that will finance the new pension system. Attempts to cushion the blow through debt finance would defeat this purpose. It would simply replace implicit debt with explicit debt.

The state could impose mandatory savings for old age, accepting that the transition cohorts will have to pay for two retirements, their parents' and their own. Unfortunately, households are ingenious in thwarting policymakers. They can simply save less elsewhere in their budgets.

In conclusion, an older society will likely have a lower saving rate than a younger one because the ratio of consumers to producers is higher. This will be equally true whether the pension system is PAYG or capital-reserve financed. If policymakers could increase savings during the transition to an older society, the economic pie might be enlarged and the difficulties of supporting a larger elderly population could be diminished. Unfortunately, there is little evidence that they can do so.

Aging & Transfer Programs

If there were no transfers, population aging would improve the welfare of young workers by raising their wage rate relative to the return on capital. But it would reduce the welfare of the elderly, who are sellers of capital and purchasers of labor services. However, we cannot assume away such transfers. The importance of public pension systems to the elderly can hardly be overemphasized, and for the elderly poor in advanced economies, intergenerational public transfers are a matter of life and death. Most of the population aging debate must be about ways to keep such transfers in check while avoiding a return of old-age poverty.

Since a decline in aggregate population growth (hence population aging) leads to a higher equilibrium level of per capita output, the average individual in a slow-growing, old population will be materially better off than the average individual in a fast-growing, young one. But this result is by no means assured if the system of intergenerational income transfers becomes dysfunctional.

Unfortunately, that could happen. If the goal of policymakers is to maintain a basic fixed income for the elderly, then the higher transfers required by population aging can be paid out of productivity growth. The share of output that the young transfer to the old need not rise over time and, if productivity growth is sufficient, it may even decline. However, if the goal of policy is to keep the income of the elderly proportional to the income of the young, then even with rapid productivity growth, the share of output that the young transfer to the old must continually rise. A PAYG pension system would not be actuarially viable if real pensions are fully indexed to wages. Thus, attempts to maintain parity in consumption standards between young and old would bankrupt an aging society, even when productivity growth is adequate.

This might well occur as a result of collusion between old voters (who are already receiving pensions) and middle-aged voters (who will shortly receive them). The huge increases in elderly consumption in the United States are a reminder that the problems of PAYG pension systems in industrial countries are mainly due to rapidly rising replacement rates, not to the growth in the number of pensioners. From the viewpoint of older workers, the most favorable approach to strengthening the system's finances is to raise payroll taxes. From the viewpoint of younger cohorts, the most favorable approach is to cut pension benefits.

Means testing – concentrating pension benefits on households that really need them to maintain a decent level of living – sounds attractive but raises thorny issues. When such tests are imposed, households may reduce their lifetime savings and labor supply in order to benefit from larger transfers in old age, or they may simply transfer assets to their children. Tests which reduce pension benefits when the recipient earns income discourage labor supply by older workers, which leads to losses all around. Pensioners lose a chance to augment their incomes, government loses tax revenues, and firms lose potentially productive workers.

Unless older voters can be persuaded to put their personal interests aside, the politics of pensions will probably ensure that the bulk of income in old age will continue to come from pension systems that greatly resemble those of today. The reforms that can be foreseen are incremental, parametric corrections. Absent a fundamental ideological and political shift in Europe, the United States, and Japan, social security reform is likely to be modest at best.

Aging & Health Care Systems

Today, health care accounts for around 10% of GDP in most developed countries. Population growth and population aging are the two main demographic drivers of health costs. In the developed countries, aging is fast becoming the more important of the two. Population aging, along with advances in medical knowledge, has led

to a dramatic change in the basket of medical conditions, with infectious diseases being replaced by heart disease, stroke, and cancer. In old age, the treatment of these conditions often entails hospitalization, assistance with daily living activities and long-term institutionalized care.

However, the main contributor to rising health expenditure is not aging, but technological progress. The costs of medical research and new tests and treatments are passed on via the ever-increasing cost of pharmaceuticals, medical equipment and procedures.

However, it must be kept in mind that the social benefit-cost ratio for most of these new technologies is far in excess of unity.

One policy option is to limit the range of services that are covered by public schemes and place more of the burden on the elderly themselves. A second option is to increase public medical insurance contributions. Neither one seems politically viable. A third option is to reduce the growth in health costs by limiting the purchase of drugs, regulating types of treatment, and setting limits on reimbursement. The track record of all such measures is at best mixed. The last possibility is to promote the health of the entire population (e.g. anti-smoking campaigns and efforts to encourage better diets and exercise), thus lengthening working lives and reducing the period of ill health prior to death. However, achieving the latter is itself often an expensive proposition. The demand for expensive treatments that greatly improve the quality of life at older ages (e.g. joint replacement) is strong and, again, it seems a safe proposition that the social cost-benefit calculus is not conducive to rationing or discouraging such procedures.

Open-Economy Aspects of Population Aging

Differing national age structures should set trade and capital flows in motion. In a perfectly functioning global market, capital would flow from rapidly aging countries, like Japan, to less rapidly aging countries such as India, where the capital-labor ratio is lower and the rate of return to capital is higher. By draining capital out of the industrial countries, these flows would raise their domestic rate of return to capital while lowering it in receiving countries. Incomes in the regions receiving these inflows would be higher because of increased capital per worker.

This open-economy adjustment mechanism has the makings of a virtuous cycle – providing a more efficient way of accumulating assets for the aging North and promoting more rapid development for the younger South. But there are three problems with it. The first is that the quantitative significance of the gain to developed countries is likely to be modest. Furthermore in the North, the beneficiaries of international investment are well-to-do lifetime savers. The lifetime poor, who depend on labor income while young and public transfers when old, suffer twice. When they are young, wage

rates are reduced by capital outflows and when they are old, PAYG-financed public pensions are reduced. Finally, as we are periodically reminded by events such as the current financial crisis, risk-adjusted rates of return in the aging North and the youthful South are far closer than their nominal rates of return.

Implications for Policy

Policymakers should modify those features of public pension systems that encourage early retirement. However, they are not likely to muster the needed political support. Furthermore, firm-level policies are much more important than public pension systems in determining age of retirement. The key to adapting to an aging labor force lies with the private sector, not government.

There is relatively little that the state can do to mobilize savings except to engage in saving itself; but voters have little stomach for raising taxes or cutting spending. Furthermore, in an aging world, the need for more savings and investment is reduced because labor force growth will be slow.

Governments can moderate the growth of health expenditures somewhat; but in an aging society, health care is deservedly a priority sector and most technical progress in medicine appears to be well worth the cost.

Investing in developing countries can add a few basis points to the return on savings. However, in developed countries, like Japan, the beneficiaries will be those who are relatively well-off. The poor who depend on labor income when young and public pensions when old will be the losers.

Demography, philosopher Auguste Comte once said, is destiny. *Most assuredly, it is not!* Nonetheless, the arguments we have presented do suggest that in decades to come, young people will have to pay higher taxes (out of higher incomes). Old people are going to have to work longer (at better jobs), and retirees are going to have to get by on pensions that are lower and assets that are worth less than they expected. Thoughtful policy reforms can mitigate these problems, but they cannot eliminate them entirely. On balance, though, the aging of populations is far from an economic crisis and we can face the prospect with equanimity. **JS**

Note = Portions of this article are based on Landis MacKellar, "The predicament of population aging: a review essay," *Population and Development Review* 26 (2000): pp. 365-397.

Dr. Landis MacKellar is an economist specializing in economic demography and the economics of the social sector. He is currently leader of the Health and Global Change project at the International Institute for Applied Systems Analysis outside Vienna, Austria. David Horlacher, currently the Christian A. Johnson Distinguished Scholar in Economics at Middlebury College, the United States, was chief of the Population and Development Section of the UN Population Division and later a Fulbright scholar.