

Aging

in the Asian Tiger Economies

What challenges will the aging of populations in Asia's tiger economies pose for their social insurance and educational systems? What effects will this have on their budgets, and on their saving rates and total savings, as well as on those of the global economy?

Peter S. Heller



IN THE SWIRL of commentary on the Asian tigers in recent years, one facet of their longer-term prospects not often remarked upon is that their populations are aging. By 2025, the share of the elderly in the populations of China, Hong Kong SAR, Indonesia, the Republic of Korea, Malaysia, the Philippines, Singapore, Taiwan Province of China, Thailand, and Vietnam—referred to collectively in this article as the “Asian tigers”—will at least double, and the share of the young will fall sharply. There has also been a transformation in their health situation,

with patterns of illness and medical treatment increasingly mirroring those in industrial countries. These developments will affect the Asian tigers' labor markets, savings, investment, and growth rates, and pose important policy challenges for governments, particularly in the social sectors. Given the increasing importance of Asia in the world economy, there may also be global macroeconomic ramifications.

Demographic trends

The demographic profiles of the Asian tigers fall into three groups. The most developed of these (which are hereinafter referred to as the East Asian tigers)—Hong Kong SAR, Korea, Singapore, and Taiwan Province of China—are also the most advanced in terms of population aging. Their working-age populations will increase modestly during 2000–2030 and then shrink, putting a brake on real economic growth rates. By 2010, their overall dependency rates—the sum of their youth and elderly dependency rates (the ratios of their populations under age 15 and over age 64, respectively, to their working-age populations)—will begin to rise sharply, reflecting the rising share of the elderly. China's aging process will mirror East Asia's, though with about a 10-year lag, and China's annual population growth rate is projected to decrease. In contrast, for Indonesia, Malaysia, the Philippines, Thailand, and Vietnam (hereinafter referred to as the Southeast Asian tigers), the declines in fertility and increased life expectancy are more recent developments. Until 2020, there will be gradual but significant *contraction* in both the youth and overall dependency rates. After 2020, the former will largely stabilize while the latter will begin to rise sharply, reaching approximately 25 percent by midcentury, still below the rates in the more developed tigers.

Public policy challenges

Aging populations pose important long-term public policy challenges. Educational systems need to adapt to a stabilized youth population and changing skill requirements for the labor force. Social insurance mechanisms are needed to ensure that elderly persons have adequate incomes when they retire, particularly as traditional extended family support systems weaken. These rapidly modernizing societies will also

confront difficult challenges in meeting growing but shifting demands for medical care.

The public pension and medical care systems of Asia can be characterized not only by the innovativeness of some and the openness to experimentation of others but also by the limited coverage of the populations in some countries. For example, there is largely universal coverage in the pension or provident fund systems of Korea, Malaysia, Singapore, and Taiwan Province of China (and, in the near future, of Hong Kong SAR). In other countries, however, pension coverage of the labor force is still largely limited to the civil service and/or the larger enterprises in the formal sector, and replacement rates (that is, ratios of pension payments to wages earned just before retirement) are low.

The government's role in the medical sector is equally varied. The East Asian tigers have introduced relatively comprehensive medical insurance schemes to rationalize the financing of medical care, cope with the changing pattern of demand, and use market principles to contain costs. In contrast, insurance coverage in China effectively applies to only about 20 percent of the population. In urban areas, medical "insurance" systems are either municipality- or larger enterprise-based and cover no more than half the urban population. For the three-fourths of China's population living in rural areas, only 5 percent of communities maintain cooperative medical care systems. In Southeast Asia, much of the population relies on government hospitals and health centers. Although modern private practitioners and hospitals are increasingly available, they are not readily affordable by much of the population.

Looking ahead, the pension and medical insurance systems of Korea, Singapore, and Taiwan Province of China may need some adjustments if they are to remain financially viable in the context of longer-term demographic trends. Moreover, where mandatory private sector-oriented strategies have been pursued (as in Singapore), the government's regulatory role may need strengthening in order to limit the scope of the governments' implicit contingent budgetary liabilities. In China and much of Southeast Asia, stable and financially viable systems must be put in place soon to address the aging of their populations.

In regard to pensions, governments will need to strike a balance between pay-as-you-go or partially funded, defined-benefit systems and fully funded, defined-contribution systems. Some issues are pressing. Also, in China, the pension systems applying to state enterprise employees must be reformed *pari passu* with the restructuring of these enterprises. In China and other countries, the coverage of existing pension systems may need to be broadened to ensure their financial viability. These efforts may require extending coverage to workers in the informal urban and rural sectors.

Concerning medical care, policymakers need to address both the policy and institutional changes associated with aging populations and their changing illness patterns. All of these countries are witnessing rising public expectations

concerning the quality of medical care that is feasible and desirable, and an expansion in the sophistication of available medical services. Need, however, does not necessarily translate into higher economic demand. In this connection, countries would need to continue relying on traditional, budget-financed systems of public hospitals and health centers or to develop more comprehensive private medical insurance systems. For the latter, important policy design issues would need to be addressed concerning copayments, deductibles, global budget constraints, permissible reimbursement formulas, and so on. In addition, the most cost-effective approaches to delivering medical care in budget-financed hospitals and clinics need to be determined.

Budgetary effects

Forecasts of the budgetary effects of aging populations are always problematic. Compared with the industrial countries, the lack of comprehensive social insurance systems in Asia and the uncertainty about the direction of public policy make forecasting more difficult. Demographic effects will be more pronounced for the East Asian tigers, because their populations are aging more rapidly and they already have developed social insurance schemes. Conversely, the relatively modest social insurance commitments of China and the Southeast Asian tigers suggest that the *narrow* impact of their aging populations will be less significant fiscally.

Yet concentrating only on the impact of demographic changes on present social insurance systems may understate the likely outcomes, since there are also the concomitant effects of epidemiological developments, changes in prevailing medical technologies, upgrading of educational systems, and social pressures to provide broader social safety net coverage for elderly persons living outside the formal urban sector. Each of these developments may result in important national policy changes in coming years, long before the elderly become significant in Asia's population. Yet these policy developments may also, in combination with the aging of populations, create significant fiscal pressures.

With the hazards of such projections borne in mind, two scenarios on the budgetary impact of aging populations in Asia are examined. One focuses narrowly on the impact of changes in the shares of key age groups in the population. This scenario takes no account of possible changes in a government's policies in the social sectors, either in terms of insurance coverage or the character of programs (other than to adjust real wages and benefits in line with real productivity growth). The second scenario incorporates the effects of both plausible policy changes and cost pressures, particularly in the medical sector. Specifically, the tertiary education enrollment rate is assumed to rise; there is a higher elasticity of spending on medical care with respect to GDP; and the coverage of pension systems is enhanced to provide minimal pension benefits to elderly persons who are not covered.

The first scenario suggests that the net pressures on the budget in the East Asian tigers will become significant only



after 2010. By 2025, the increased elderly dependency rate will exert pressure on pension budgets. Demands for increased health outlays will also manifest themselves, but these will be offset by a reduced need for education outlays. A net increase in fiscal social outlays of about 3 percent of GDP can be envisaged by 2025, with further increases thereafter. In China, the net fiscal impact would be small through 2025, but social outlays would increase substantially thereafter. Demographic factors alone would reduce fiscal outlays in Southeast Asia through 2010, with only modest growth thereafter until 2035 (as pension outlays rise).

With enhanced policies, the effect could be more substantial. Between 1995 and 2010, budgetary outlays could rise by an additional 2 percent of GDP for the East and Southeast Asian tigers, and by almost 5 percent of GDP in China. By 2025, budgetary outlays would rise by a *further* 2–5 percent of GDP across the region.

Effects on Asian savings

Many economists contend that private saving rates will be affected by a society's age structure, mirroring the change in an individual's saving rate over the life cycle. Thus, economies with high shares of the population in the labor force may exhibit high saving rates; conversely, economies with high overall dependency rates may exhibit low saving rates. Cross-country econometric studies have captured these relationships, although the magnitude of the effect of changes in the youth and elderly dependency rates on saving rates may vary markedly.

By applying these econometric estimates to the Asian context, one can gauge the possible *partial* effects, over time, of expected demographic changes on private sector saving rates. Such an exercise suggests that through 2010, the fall in

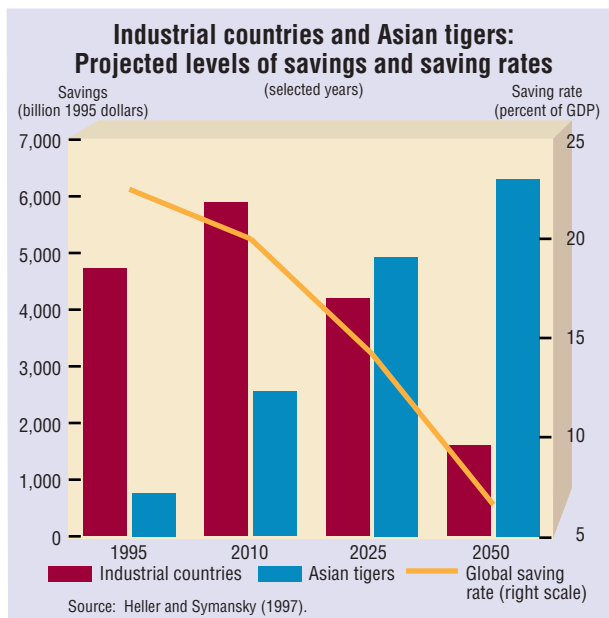
the youth dependency rate and the minimal increase in the elderly ratio for many of these countries could lead to an increase in their private saving rates. Indeed, through 2025, only for the East Asian tigers would demographic factors adversely influence private saving rates. Saving rates would tend to increase for the Southeast Asian tigers and remain relatively flat in China. The aggregate saving rate for the Asian tigers as a group could modestly decline. After 2025, saving rates might decline markedly across the region, as the youth dependency rate stabilizes and the elderly dependency rate rises for the East Asian tigers and China.

Although private savings account for the lion's share of gross savings in most of these economies, public sector savings nevertheless have traditionally also been important for most Asian tigers (except China). Combining the effects on *both* the public and the private sectors (and taking account of the possible negative relationship between savings in the two sectors), one observes a sequential deterioration in national saving rates. The impact begins to be felt modestly among the East Asian tigers—and, to a lesser extent, in China—by 2010. In contrast, saving rates could increase for the Southeast Asian tigers. For the Asian tigers as a group, the weighted saving rate is projected to barely change through 2010.

By 2025, however, the picture begins to change. The East Asian tigers show the most significant deterioration in their national saving rates. If one focuses simply on demographic effects and uses the median of several econometric estimates, the decline from 2010 could be 10 percent of GDP. To a lesser extent, the saving rate may also worsen between 2010 and 2025 in China, while it is likely to remain unchanged among the Southeast Asian tigers. Reflecting the heavy GDP weights of China and the East Asian tigers, the overall national saving rate of the Asian tigers is clearly projected to fall during this period. Depending on the econometric estimate used, the decline may range anywhere between 2 and 10 percent of GDP, and by slightly more if possible policy changes are taken into account.

The most dramatic effects on national saving rates is projected to occur *after* 2025. For the East Asian tigers, the aggregate saving rate may dip by an additional 13 percent of GDP between 2025 and 2050 (and by almost twice as much from today's saving rate), although more conservative econometric estimators could result in a decline only half as large. The decline in China's saving rate could be almost as large, with the decline for the Southeast Asian tigers not far behind. A decline in the combined saving rate of the Asian tigers could be at least 10 percent of GDP between 2025 and 2050. From today's level, this would constitute a decline of 14 percent of GDP, though, here again, this depends on the choice of econometric estimator, with results varying from as high as 17 percent, to as low as 5 percent, of GDP. These declines could increase by several percentage points of GDP if various policy changes were made.

The largest declines in saving rates are for the East Asian tigers, reflecting the earlier aging of their populations. It also



reflects their more developed social insurance systems, which result in larger adverse effects on public sector saving rates. For China and the Southeast Asian tigers, where coverage rates of social insurance programs are less extensive and benefit rates are lower, the projected worsening of the public sectors' financial balances is much less (in the absence of policy changes broadening social insurance commitments).

Effects on world savings

How might such changes in the saving rates of the Asian tigers affect the global saving rate? In 1995, despite their high saving rates, the Asian tigers accounted for *only* 12 percent of the combined savings of the Asian tigers and all industrial countries. One might therefore conjecture that even large changes in Asian saving rates would only marginally affect world savings. This, however, would be misleading. Assuming a resumption of rapid growth in the region's economies, their relative weight in the world economy would become much greater by the first quarter of the next century. Given their high saving rates and supportive demographics (at least in the next three decades), their weight in world savings would thus become correspondingly larger.

The projections in the chart suggest that the absolute real savings level of the combined Asian tiger and industrial economies could increase by about 60 percent between 1995 and 2010 (from more than \$5 trillion to more than \$8 trillion (in 1995 dollars)), while real output (not shown) could rise by 73 percent over the same period. Thereafter, the growth of the savings of these two groups of countries may decelerate sharply, resulting in a progressive deterioration in the global saving rate. Factoring in the impact of enhanced government social sector policies by the tigers could further reduce the absolute level of world savings and the aggregate global saving rate. The *most optimistic* estimates would suggest a halving in combined aggregate savings between 2025 and 2050. The Asian tigers' share of these savings should rise over the period to about one-third by 2010 and more dramatically thereafter. Even with the most adverse assumptions on the impact of aging on the tigers' saving rate, the tigers' share in the combined savings of the two groups is likely to rise to slightly more than half by 2025 and to almost three-fourths by 2050. Less adverse effects from aging would imply higher absolute savings—and a correspondingly greater share, conceivably reaching 80 percent—by the tigers.

The reasons for these developments should be obvious. First, the Asian tiger economies are assumed to grow *more than twice as fast* as the industrial countries. Thus, the already low saving rate of industrial countries diminishes in its importance for global savings relative to the high saving rates of the tigers. Second, the projections suggest a sharp drop in the industrial countries' saving rate, beginning as early as 2010 (from 20 percent in 1995) and becoming more



Peter S. Heller
is Deputy Director of the
IMF's Fiscal Affairs
Department.

dramatic in succeeding decades. In contrast, the saving rate of the tigers *increases* through 2010, and the adverse effect of aging on savings occurs only after 2025. Moreover, since the overall saving rate of the tigers *starts* so high, it is not likely to drop as low as that of the industrial countries. Together, these two influences account for much of the change in their relative shares of global savings.

Third, and obviously important, these projections are really no more than partial-equilibrium estimates and thus ignore many other changes in the economic environment, notably in world interest rates, that are likely to result in higher *ex post* levels of savings in both Asia and the industrial countries. Thus,

more general-equilibrium estimates of these phenomena are likely to show less drastic changes than are implied by the projections presented in this article. It should also be noted that as populations age, the demand for savings—that is, investment—is likely to decrease.

Conclusion

This study highlights the scale of the policy decisions confronting the Asian tigers as their populations undergo dramatic demographic and epidemiological changes. While there is still time before the proportion of the elderly in their populations begins to grow, policy frameworks must be put in place long before then if the expected significant fiscal pressures and social problems are to be contained. These issues add a new dimension to the policy challenges currently faced by the Asian countries. The study also suggests that the global phenomenon of aging populations may well place significant pressures on world savings as we move beyond the first decades of the next century. The aging of the tigers' populations will not substantially change this prognosis, and, because it comes later than in the industrial economies, it will initially moderate the pressure on world savings. As the aging of populations in this region becomes more pronounced, however, it is likely to eventually add to this pressure.

It is important to emphasize that there remains much uncertainty about any projections extending so far into the future. There is much we cannot know about the likely dynamics of the economic and demographic situations. Also, more information is needed to enable us to improve our understanding of these issues. **F&D**

References:

- Peter S. Heller, 1997, "Aging in the Asian Tigers: Challenges for Fiscal Policy," IMF Working Paper 97/143 (Washington: IMF).
Peter S. Heller and Steven Symansky, 1997, "Implications for Savings of Aging in the Asian Tigers," IMF Working Paper 97/136 (Washington: IMF).