Choices in Financing
Health Care and
Old Age Security

*Proceedings of a Conference Sponsored by
the Institute of Policy Studies, Singapore,
and the World Bank, November 8, 1997*

*Edited by*
*Nicholas Prescott*
Recent World Bank Discussion Papers

No. 324 The Bangladesh Rural Advancement Committee’s Credit Programs: Performance and Sustainability. Shahidur R. Khandker and Baqui Khalily

No. 325 Institutional and Entrepreneurial Leadership in the Brazilian Science and Technology Sector: Setting a New Agenda. Edited by Lauritz Holm-Nielsen, Michael Crawford, and Alycyna Saliba

No. 326 The East Asian Miracle and Information Technology: Strategic Management of Technological Learning. Nagy Hanna, Sandor Boyson, and Shakuntala Gunaratne

No. 327 Agricultural Reform in Russia: A View from the Farm Level. Karen Brooks, Elmira Krylatykh, Zvi Lerman, Aleksandr Petrikov, and Vasilii Uzun

No. 328 Insuring Sovereign Debt Against Default. David F. Babbel

No. 329 Managing Transboundary Stocks of Small Pelagic Fish: Problems and Options. Max Agüero and Exequiel Gonzalez


No. 331 Case Studies in War-to-Peace Transition: The Demobilization and Reintegration of Ex-Combatants in Ethiopia, Namibia, and Uganda. Nat J. Colletta, Markus Kostner, Ingo Wiederhofer, with the assistance of Emilio Mondo, Taimi Sitari, and Tadesse A. Woldu

No. 333 Participation in Practice: The Experience of the World Bank and Other Stakeholders. Edited by Jennifer Rietbergen-McCracken

No. 334 Managing Price Risk in the Pakistan Wheat Market. Rashid Faruqee and Jonathan R. Coleman

No. 335 Policy Options for Reform of Chinese State-Owned Enterprises. Edited by Harry G. Broadman

No. 336 Targeted Credit Programs and Rural Poverty in Bangladesh. Shahidur Khandker and Osman H. Chowdhury

No. 337 The Role of Family Planning and Targeted Credit Programs in Demographic Change in Bangladesh. Shahidur R. Khandker and M. Abdul Latif

No. 338 Cost Sharing in the Social Sectors of Sub-Saharan Africa: Impact on the Poor. Arvil Van Adams and Teresa Hartnett

No. 339 Public and Private Roles in Health: Theory and Financing Patterns. Philip Musgrove

No. 340 Developing the Nonfarm Sector in Bangladesh: Lessons from Other Asian Countries. Shahid Yusuf and Praveen Kumar

No. 341 Beyond Privatization: The Second Wave of Telecommunications Reforms in Mexico. Björn Wellenius and Gregory Staple

No. 342 Economic Integration and Trade Liberalization in Southern Africa: Is There a Role for South Africa? Merle Holden

No. 343 Financing Private Infrastructure in Developing Countries. David Ferreira and Karman Khatami

No. 344 Transport and the Village: Findings from African Village-Level Travel and Transport Surveys and Related Studies. Ian Barwell

No. 345 On the Road to EU Accession: Financial Sector Development in Central Europe. Michael S. Borish, Wei Ding, and Michel Noël

No. 346 Structural Aspects of Manufacturing in Sub-Saharan Africa: Findings from a Seven Country Enterprise Survey. Tyler Biggs and Pradeep Srivastava

No. 347 Health Reform in Africa: Lessons from Sierra Leone. Bruce Siegel, David Peters, and Sheku Kamara

No. 348 Did External Barriers Cause the Marginalization of Sub-Saharan Africa in World Trade? Azita Amjadi Ulrich Reincke, and Alexander J. Yeats


No. 350 Who Benefits from Public Education Spending in Malawi: Results from the Recent Education Reform. Florencia Castro-Leal

No. 351 From Universal Food Subsidies to a Self-Targeted Program: A Case Study in Tunisian Reform. Laura Tuck and Kathy Lindert


No. 353 Telecommunications Policies for Sub-Saharan Africa. Mohammad A. Mustafa, Bruce Laidlaw, and Mark Brand

No. 354 Saving across the World: Puzzles and Policies. Klaus Schmidt-Hebbel and Luis Servén

No. 355 Agriculture and German Reunification. Ulrich E. Koester and Karen M. Brooks

No. 356 Evaluating Health Projects: Lessons from the Literature. Susan Stout, Alison Evans, Janet Nassim, and Laura Raney, with substantial contributions from Rudolpho Bulatao, Varun Gauri, and Timothy Johnston

(Continued on the inside back cover)
Choices in Financing
Health Care and
Old Age Security

Proceedings of a Conference Sponsored by
the Institute of Policy Studies, Singapore,
and the World Bank, November 8, 1997

Edited by
Nicholas Prescott

The World Bank
Washington, D.C.
Discussion Papers present results of country analysis or research that are circulated to encourage discussion and comment within the development community. The typescript of this paper therefore has not been prepared in accordance with the procedures appropriate to formal printed texts, and the World Bank accepts no responsibility for errors. Some sources cited in this paper may be informal documents that are not readily available.

The findings, interpretations, and conclusions expressed in this paper are entirely those of the author(s) and should not be attributed in any manner to the World Bank, to its affiliated organizations, or to members of its Board of Executive Directors or the countries they represent. The World Bank does not guarantee the accuracy of the data included in this publication and accepts no responsibility for any consequence of their use. The boundaries, colors, denominations, and other information shown on any map in this volume do not imply on the part of the World Bank Group any judgment on the legal status of any territory or the endorsement or acceptance of such boundaries.

The material in this publication is copyrighted. Requests for permission to reproduce portions of it should be sent to the Office of the Publisher at the address shown in the copyright notice above. The World Bank encourages dissemination of its work and will normally give permission promptly and, when the reproduction is for noncommercial purposes, without asking a fee. Permission to copy portions for classroom use is granted through the Copyright Clearance Center, Inc., Suite 910, 222 Rosewood Drive, Danvers, Massachusetts 01923, U.S.A.

ISSN: 0259-210X

The figure on the cover illustrates the changes in age distributions that will occur in Singapore between 1995 (shown with dark purple bars) and 2030 (light purple bars). Each bar represents five years of the age distribution (0-4, 5-9, and so on, through 80 and over) and shows the number of people of that age. Men are on the left side of the figure; women are on the right. By 2030 Singapore's population will be larger and much older.

Nicholas Prescott is senior economist in the World Bank's East Asia and Pacific Region.

Cataloging-in-Publication Data


p. cm. — (World Bank discussion paper ; 392)


RA413.7.A4 F56 1998
Contents

Foreword v

Abstract vi

Acknowledgments vii

Keynote Address 1
Yeo Cheow Tong

Health Care

Health Care for Aging Populations: Issues and Options 7
Jacques van der Gaag and Alexander Preker

International Comparison of Medical Savings Accounts 19
Nicholas Prescott and Len M. Nichols

Financing Health Care in Old Age: A Case Study of Singapore 33
Kai Hong Phua and Yap Mui Teng

Comment 43
Choong May Ling

Comment 46
Lim Chin

Old Age Security

Social Security Financing Policies and Rapidly Aging Populations 51
Aviva Ron

New Models for Old Age Security: Experiments, Evidence, and Unanswered Questions 63
Estelle James
Foreword

Asian societies face several financing challenges. In the next few years two will have to be confronted: providing security for rapidly aging populations and restructuring health care systems stressed by longer lifespans and weaker family care systems.

In November 1997 the World Bank and Singapore’s Institute of Policy Studies sponsored a conference, Financing Health Care and Old Age Security, to assess and identify potential solutions to these concerns. Speakers from the World Bank, Singapore, and the International Labour Organization examined policy issues affecting the development of health care and social security systems in aging societies, providing valuable lessons for Singapore and other countries. The conference was attended by about 150 participants drawn from government, the private sector, academia, and the social services.

Several conclusions were reached. First, the world’s rapidly aging population will cause the ratio of working taxpayers to elderly retirees to fall dramatically, requiring policymakers to manage resources in a way that preserves the financial viability of old age security systems. Singapore, with one of the world’s fastest-aging populations, is studying how to finance long-term care for the elderly and what incentives to use to encourage family members and communities to provide such care. The country’s past experience—combining provident funds with medical savings accounts—shows that acting early pays off.

Second, there is no single best model of resource management—but there are clearly bad models. In pensions the bad model uses defined benefits financed on a pay as you go basis from taxes. In health care the bad model combines a comprehensive benefit guarantee with fee-for-service payments. Because the model selected depends on a society’s values and expectations, public education on costs and benefits is extremely important.

Finally, financing of both pensions and health care should establish a close link between contributions paid and benefits received, as well as promote individual responsibility. Financing reform in aging societies should focus on defined contribution funding for pensions, and defined contributions with targeted subsidies for health care.

The conference contributed to our understanding of financing issues facing governments everywhere. We hope that the papers presented in this volume further contribute to the public discussion and debate on these important issues.

Jean-Michel Severino
Vice President
East Asia and the Pacific Region
World Bank

Lee Tsao Yuan
Director
Institute of Policy Studies
Singapore
Abstract

This volume contains the keynote address (delivered by Singapore's minister for health and for the environment), six papers, and four comments prepared for the Institute of Policy Studies, Singapore–World Bank conference on Financing Health Care and Old Age Security, held in Singapore on 8 November 1997. Conference participants addressed a looming problem for nearly every country, developing and industrial: how to deal with the implications rapidly aging populations have for the financing of medical care and income security for the elderly. The issues identified and the solutions proposed can provide insight and guidance for policymakers, researchers, and others interested in addressing these challenges now, when they are manageable—rather than later, when they have the potential to create increasingly serious financial, social, political, and cultural problems.

Of special interest are the contributors' analyses of Singapore's unique, integrated approach to managing social risk, which is based on mandatory individual savings accounts. Singapore's pioneering model unifies medical savings accounts for acute medical care in old age with a provident fund for retirement income. While the lessons of Singapore's experience are of worldwide interest given current efforts to reform social security systems, the minister's keynote address highlights the continuing need for innovations to refine the basic model—calling for the development of a new approach to financing the growing problem of long-term medical care for the elderly.
Acknowledgments

The organizers of the conference are grateful to Singapore’s Minister for Health and for the Environment, Yeo Cheow Tong, for opening the conference and delivering the keynote address. In addition, they wish to acknowledge Michael Walton and Javad Khalilzadeh-Shirazi for their support of the World Bank’s partnership with the Institute of Policy Studies. Special thanks are also due to the administrative staff of the Institute of Policy Studies, who put in a tremendous effort to ensure that the conference would run smoothly for all participants.

In addition, the Institute of Policy Studies gratefully acknowledges the financial support of The Shaw Foundation, Singapore, without whose support the conference would not have been possible.

This volume was edited by Paul Holtz and laid out by Damon Iacovelli, both with Communications Development Incorporated.
I am pleased to welcome you to the Institute of Policy Studies–World Bank conference on Financing Health Care and Old Age Security. The topic of this conference is relevant not only to Singapore but to many other countries as well. Health care is consuming an increasing share of the national wealth in many countries. In industrial countries health care expenditures range from 6.9 percent of GDP in the United Kingdom to 14.5 percent in the United States. In Singapore, with our relatively young population, health care expenditures are still modest—about 3 percent of GDP over the past few years. But this spending should increase as our population ages.

An aging population brings many challenges, and even more when the number of elderly is increasing rapidly. Singapore has one of the world’s fastest-aging populations. By 2030 the portion of our population age 65 and above will nearly triple, from the current 7 percent to 18 percent.

In absolute terms the number of elderly will jump from 210,000 today to nearly 310,000 by 2010, then to 530,000 by 2020 and 800,000 by 2030. By 2030 the elderly dependency ratio will hit 1 in 3, from 1 in 10 today. The implications of such dramatic changes, particularly in terms of old age security and health care financing, are tremendous.

With higher living standards and good preventive and curative medicine, the elderly can expect to live even longer in the future. This begs the question: How will the elderly support themselves financially for the 20 to 25 years after retirement? While a healthy lifestyle will delay the onset of poor health, the elderly tend to have more health problems than the young. The medical expenditures of the elderly are closely linked to the type of health care available in a country. For example, defensive medicine—in which patients are subjected to a battery of hi-tech tests and treatments each time they become ill, or are hospitalized longer than is necessary—inevitably increases medical expenditures.

Over the next few years Singapore will need to address these and other issues related to the elderly, so that we have an appropriate system in place well before the number of elderly increases significantly. Here I outline some of the challenges related to looking after the health care needs of the elderly in Singapore, and the financial issues that will have to be addressed.

Medical Care for the Elderly

All the types of care required by the elderly are already available in Singapore. These include acute hospitals, day hospitals, day care and day rehab services, community hospitals for those requiring further convalescence and rehabilitation, nursing homes for those who cannot manage in their own homes, and home medical, home nursing, and home help services to help the sick elderly live in their own homes. Voluntary welfare organizations, like the Home Nursing Foundation, are making an increasingly important contribution in this regard.

While the list of services is fairly complete, many elements in the care chain need to be further addressed. Only acute care in acute hospitals provides the type of care that is needed—and as a result, patients are staying in hospitals longer than is necessary. More than 7 percent of the beds

Yeo Cheow Tong is Singapore’s minister for health and for the environment.
in acute hospitals are occupied by long-stay patients. Many of these patients are healthy enough to be discharged to their homes or to rehabilitative care settings.

The family members of these patients are often reluctant to take them home because of lack of family support, or because appropriate downstream health care facilities and services—such as home medical or home help services—may not be readily available. Such instances of "social hospitalization" can also result from poor family relationships or when the family is living alone. The need for downstream health care facilities will increase even more rapidly in the future. This is because more elderly will be from small families, and with more dual-income families, their family members will likely be working and therefore unable to help nurse them at home.

Thus over the next decade the health care system must provide a continuum of services to suit older people with different needs. The elderly who no longer need acute hospital care but who still need some nursing care and rehabilitation should be able to recuperate in nursing homes and community hospitals. They will then be discharged home when they are capable of looking after themselves, and be followed up by home nursing and other community-based services. As they recover, the elderly will need a lower intensity of services. By using the appropriate level of care, elderly patients will also benefit from more holistic care and lower fees.

But while we strive to develop the various elements of elderly care, we must not fall into the trap of relying only on institutional care. The family setting is still the best approach—it provides the elderly with the warmth and companionship of family members and a level of emotional support that cannot be replicated elsewhere. The elderly are also more comfortable in their own homes.

We also have to encourage more Singaporeans—especially healthy older people—to volunteer for community-based services. With fewer working persons supporting each elderly person, having the healthy elderly provide many community-based services will impose less strain on the economy and increase the availability of these services. In the future the healthy elderly will be quite capable of not only providing services, but also organizing and managing them. We will need to change the mindset of the healthy elderly in the coming years, so that they see such activities not only as self-help, but also as something that enriches their retirement.

Health Care Financing

Individual responsibility has been the cornerstone of Singapore's health care philosophy, and this approach has served us well. We believe that having a good, sustainable health care system requires getting people to invest in their own health and to pay, if not all, at least a fair share of their medical costs. It was with this objective in mind that the government established the Medisave scheme in the 1980s. We subsequently introduced Medishield, a low-cost catastrophic illness insurance scheme, followed by Medifund, an endowment fund designed to meet the health care needs of the poor and indigent. Medifund ensures that no Singaporean will be denied basic medical care because they are unable to pay.

Medisave, Medishield, and Medifund have helped provide Singaporeans with the means to save and pay for their health care. But the three schemes were designed primarily to help Singaporeans and their families pay for expensive acute hospital care—not for long-term care. As the population ages, and with better acute care, expenditures on long-term care will likely increase rapidly. Thus we will need to determine how to fill the void left by Medisave, Medishield, and Medifund. Otherwise the development and use of medical services for the elderly will be distorted.

For example, current public health subsidies provide substantial subvention for acute hospital care, through the heavily subsidized class B2 and C wards in acute hospitals. The destitute are also provided with long-term institutional care through voluntary welfare organizations. Still, the health care financing scheme does not cover long-term institutional care for the bulk of the population. Thus we are examining the funding of long-term care for the elderly.

Another challenge is how to implement a funding mechanism that will encourage communities and families to participate in the long-term care of the elderly. The current funding arrangement provides no incentive for family members to play a more active role. In fact, family members may want to leave their elderly in acute hospitals because the wards are heavily subsidized.
Singapore is not alone in facing these challenges. Populations are aging the world over, allowing us to review the approaches taken by other countries. Japan, for instance, has introduced a nursing care insurance bill for implementation in 2000. The scheme requires all persons over 40 to make monthly contributions to a central fund. Insured individuals are then entitled to receive nursing care once they reach 65, and are required to pay only 10 percent of the cost incurred.

The United States has Medicare, a national health insurance program for people 65 and older and for disabled individuals. Medicare covers both inpatient and outpatient care and services. But the scheme, sometimes described as one of the most successful social achievements in U.S. history, is running into financial difficulties. Medicare trustees recently reported that the Medicare trust fund may go bankrupt in 2001, as expenses continue to exceed revenues.

The experiences of the United States and other countries that rely on a largely tax-funded approach show that such schemes are not sustainable over the long term. This is because as the dependency ratio rises, the elderly have fewer working persons to provide the tax dollars needed to fund their medical care. What is needed is a multipronged approach—one that incorporates alternative means of financing health care, ways of moderating health care consumption, and mechanisms for lowering health care costs. Given that the dependency ratio will be rising in Singapore in the near future, we must learn from these experiences and avoid the potholes that other countries have encountered.

Conclusion

The number of elderly in Singapore will increase rapidly starting in 2010—just 12 years from now. Still, we have more than enough time to review what is needed and implement a new framework for elderly care. It is with this objective in mind that the government has set up the Inter-Ministerial Committee on Health Care for the Elderly. The committee includes several members of Parliament as well as representatives of relevant ministries and professional, grassroots, and voluntary welfare organizations. The committee has been meeting since August 1997, and is expected to issue a report and recommendations in early 1998.

Though the issues related to an aging population are complex, Singapore need not start from scratch in identifying solutions. Many countries have gone further down the road than us, and we should learn from their experiences. But we need to assess carefully, and adapt effective elements of their approaches to our local conditions. Thus conferences like this are valuable, because they facilitate an exchange of ideas and experiences. I hope that you will be able to provide ideas that will help us prepare the health care and financing system for the elderly in the years ahead. I wish all of you an interesting and fruitful conference.
Health Care
Health Care for Aging Populations: Issues and Options

Jacques van der Gaag and Alexander Preker

The world’s population is aging. Of the various indicators used to show this, the most common is the percentage of the population over 65. Globally, this measure increased from 5.3 percent in 1965 to 6.6 percent in 1995. It is expected to increase by almost 1 percentage point between 1995 and 2010, and by more than 5 percentage points between 2010 and 2040, reaching 12.6 percent (table 1).\(^1\)

Aging is proceeding more rapidly in East Asia and the Pacific. In 1965 just 4.1 percent of the population was over 65. By 1995 this share had jumped to 5.8 percent, and by 2040 it will be 16.9 percent—more than four times the 1965 level. Singapore’s demographic transition is projected to be even more dramatic. The elderly population in Singapore is projected to grow by about 3.8 percent a year between now and 2010. Between 2010 and 2025 this growth will exceed 5 percent a year, compared with overall population growth of 0.5 percent. By 2040 the elderly will account for 23.6 percent of Singapore’s population—more than 11 times the 1965 level.

While Singapore’s elderly population has been increasing rapidly, the number of people of working age has also increased, and now stands at a favorable 70 percent of the total population. This proportion is expected to peak around 2010 at 72 percent, after which it is projected to decline rapidly. Thus, while the increasing proportion of old people has so far been accompanied by an increasing proportion of working-age adults, after 2010 the effects of an aging population will likely become more noticeable.

These dramatic demographic changes have important economic implications—for savings, labor supply, and pensions, among other concerns. This paper focuses on the implications of an aging population for the health care sector. Different health needs at different ages result in large differences in health care expenditures by age. Thus demographic changes are expected to alter both the overall level and the composition of health care expenditures.

Differences in health care expenditures among age groups are far from stable. In the United States real per capita health care expenditures for the elderly grew 7.5 percent a year during 1965–70, compared with 5.6 percent a year for the nonelderly (table 2). But during 1970–76 growth rates for the two groups were about the same, only to accelerate again for the elderly after 1976. Differences in per capita spending growth are even more pronounced when public and private expenditures are separated. Public expenditures for the elderly grew by an incredible 21.8 percent a year during 1965–70, almost twice the rate for the nonelderly. Private expenditures by the elderly actually declined during this period.

These results illustrate that reliable projections of health care expenditures cannot be obtained by simply applying cross-sectional data on age-specific health care expenditures to demographic projections. While long-term demographic projections are fairly reliable and stable, differences in age-specific health expenditures vary widely over time. Among the many causes of these changes, the most important are the various aspects of health care policy—that is, the way the health care system is organized and evolving.

The rapid growth in public health care expenditures for the elderly in the United States during the late 1960s coin-

Jacques van der Gaag is chief economist and Alexander Preker is principal economist in the Human Development Network at the World Bank.
TABLE I
Population by age group in the world, East Asia and the Pacific, and Singapore, 1965–2040

<table>
<thead>
<tr>
<th>Location, age group</th>
<th>1965</th>
<th>1980</th>
<th>1995</th>
<th>2010</th>
<th>2025</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–14</td>
<td>37.7</td>
<td>35.2</td>
<td>31.3</td>
<td>26.8</td>
<td>24.2</td>
<td>21.8</td>
</tr>
<tr>
<td>15–64</td>
<td>57.0</td>
<td>58.9</td>
<td>62.1</td>
<td>65.7</td>
<td>65.7</td>
<td>64.9</td>
</tr>
<tr>
<td>65+</td>
<td>5.3</td>
<td>5.9</td>
<td>6.6</td>
<td>7.5</td>
<td>10.1</td>
<td>12.6</td>
</tr>
<tr>
<td>East Asia and the Pacific</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–14</td>
<td>40.1</td>
<td>35.9</td>
<td>28.4</td>
<td>23.2</td>
<td>20.9</td>
<td>19.7</td>
</tr>
<tr>
<td>15–64</td>
<td>55.8</td>
<td>59.4</td>
<td>65.8</td>
<td>69.7</td>
<td>68.1</td>
<td>63.5</td>
</tr>
<tr>
<td>65+</td>
<td>4.1</td>
<td>4.7</td>
<td>5.8</td>
<td>7.1</td>
<td>11.0</td>
<td>16.9</td>
</tr>
<tr>
<td>Singapore</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–14</td>
<td>43.7</td>
<td>27.1</td>
<td>23.8</td>
<td>19.0</td>
<td>18.2</td>
<td>17.6</td>
</tr>
<tr>
<td>15–64</td>
<td>54.2</td>
<td>68.1</td>
<td>70.1</td>
<td>71.8</td>
<td>63.1</td>
<td>58.8</td>
</tr>
<tr>
<td>65+</td>
<td>2.1</td>
<td>4.7</td>
<td>6.1</td>
<td>9.2</td>
<td>18.7</td>
<td>23.6</td>
</tr>
</tbody>
</table>

Source: World Bank data.

cided with the introduction of Medicare, the U.S. insurance system for the aged. This development also explains the corresponding decline in private expenditures. But many other factors influence changes in age-specific health expenditures, not all of which are well understood.

**Determinants of Health Care Expenditures**

Total health care expenditures are largely determined by growth in expenditures over time, endogenous technological change, and health expenditures by age group.

**Growth in expenditures over time**

Not until the first antibody—penicillin—was mass produced after World War II did Western medicine begin to benefit large portions of the population. Until then most people went without medical attention, and the medical facilities that existed provided more care than cure (van der Gaag 1995). Health expenditures were less than 1 percent of GDP. Today the health care industry accounts for 4.1 percent of GDP in low-income countries, 5.5 percent in middle-income countries, and 6.8 percent in high-income countries (table 3). In OECD countries the range is from 7 percent in the United Kingdom to 14 percent in the United States.

Some stylized facts about these data are worth keeping in mind for the discussion that follows. First, the percentage of GDP devoted to health care increases with a country’s income. In an economic sense, health care is a luxury good with an income elasticity (estimated from cross-country data) of demand of about 1.1. Second, the public share of total health expenditures also increases with income. With the notable exception of the United States, when economies grow, countries increasingly rely on public resources (such as general revenues or mandated public health insurance) for health care. Indeed, most OECD countries show a public share of total expenditures in excess of 80 percent. Low-income countries, by contrast, may have a private share as high as 80 percent (for example, India).

Finally, equity—in health care financing, access to health care, and health outcomes—also increases with income (Van Doorslaer, Wagstaff, and Rutten 1993). Equity is a major issue in every debate about health care reform. For financing, it refers to a political desire for progressivity (in
Europe this is usually referred to as the "solidarity" principle). For access, it refers to the objective to provide equal treatment for equal needs—that is, no one should be denied adequate health care because of financial constraints. For outcomes, it refers to the equitable distribution many societies strive for—that is, one that is independent of personal income. Equity objectives are expensive. When per capita health expenditures are about $17, as in a typical low-income country, equity, however defined, is out of reach. At per capita health expenditures approaching $2,000 a year, as in established market economies, equity in health and health care is achievable, depending on the health care policies in place. We will return to these issues when discussing policy options for health care insurance and service delivery for the elderly.

Before turning to policy issues, it is worth discussing the main causes of growth in health care expenditures. This is not the place to present a comprehensive study. Rather, we will summarize the results of a study by Newhouse (1992) of the United States, highlighting the conclusions that are relevant for our discussion.

Between 1940 and 1990 health care expenditures in the United States increased by 780 percent. Why? Since medical care is a normal good, in the economic sense, income growth provides part of the explanation. Real GDP in the U.S. increased by 180 percent during this period. As noted, the income elasticity of the demand for medical care is estimated to be around 1.1 Thus income growth may have accounted for about one-quarter of the expenditure increase.⁴

Health care prices, as faced by consumers, have fallen as a result of increased insurance coverage. Between 1950 and 1980 the average coinsurance rate dropped from 66 percent to 27 percent.⁵ From this Newhouse concludes that "the factor of five increase in real expenditures per person (between 1950 and 1980) is perhaps eight times as large as one could account for solely from the effect of increased insurance" (1992, p.7).

Another factor that may help explain the growth in the health care industry is the aging of the population. Between 1950 and 1987 the share of the U.S. population age 65 and above increased from 8 percent to 12 percent. Data on age-specific health care expenditures for 1987 suggest that this growth could account for about 15 percent of total spending growth. But per capita spending increased by more than a factor of five! Clearly, none of these factors (income, insurance, or aging), or even the combination of these factors, comes close to explaining the total growth in U.S. health care expenditures.⁶

For the purpose of this paper, the most important result of Newhouse's study is the small effect aging has on total health care expenditures. Though some researchers assert that the aging of the population is among the most important variables explaining rapidly rising health care costs,

TABLE 3
Per capita GDP and health expenditures by region, circa 1994

<table>
<thead>
<tr>
<th>Region/Income group</th>
<th>Per capita GDP PPP$</th>
<th>Per capita health expenditure PPP$</th>
<th>Health expenditure as percentage of GDP</th>
<th>Public health expenditure as percentage of total health expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Asia and Pacific</td>
<td>4,554</td>
<td>1,196</td>
<td>173</td>
<td>3.9</td>
</tr>
<tr>
<td>Eastern Europe and Central Asia</td>
<td>3,847</td>
<td>1,858</td>
<td>262</td>
<td>131</td>
</tr>
<tr>
<td>Latin America and Caribbean</td>
<td>5,801</td>
<td>3,138</td>
<td>372</td>
<td>202</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>7,181</td>
<td>2,783</td>
<td>273</td>
<td>134</td>
</tr>
<tr>
<td>South Asia</td>
<td>1,887</td>
<td>340</td>
<td>58</td>
<td>15</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>2,070</td>
<td>811</td>
<td>88</td>
<td>38</td>
</tr>
<tr>
<td>Low income</td>
<td>1,565</td>
<td>416</td>
<td>62</td>
<td>17</td>
</tr>
<tr>
<td>Middle income</td>
<td>5,790</td>
<td>2,785</td>
<td>321</td>
<td>160</td>
</tr>
<tr>
<td>High income</td>
<td>16,739</td>
<td>18,639</td>
<td>1,318</td>
<td>1,032</td>
</tr>
<tr>
<td>Established market economies</td>
<td>21,169</td>
<td>21,968</td>
<td>1,777</td>
<td>1,839</td>
</tr>
</tbody>
</table>

Note: International dollars (PPPS) are local currencies converted to U.S. dollars through the use of purchasing power parities ("exchange rates" that adjust for cost differences across countries).

HEALTH CARE FOR AGING POPULATIONS: ISSUES AND OPTIONS
9
most studies come to the opposite conclusion: the aging of the population is irrelevant or plays only a minor role.

Getzen (1992), for instance, analyzes cross-sectional and time series data for 20 countries over 1960-88. After including per capita income and other trend variables, he finds that "there is no longer any discernible association between age structure and health care costs. Age effects the allocation of spending, but not the total amount" (p. 598).

Other researchers (Gerdtham and others 1992; Leu 1986; Maxwell 1981) have reached similar conclusions. After controlling for other factors (notably income and technology), per capita spending on health care is not higher in countries with older populations and has not grown faster in countries that have aged more rapidly.

Endogenous technological change

In general, most of the increase in expenditures is attributable to technological change, which has completely transformed the health care industry—not just with new equipment and medicine, but also with new procedures that can effectively deal with previously unbeatable diseases. Since technological change is hard to predict, is it possible to project the future health care needs of an aging population? Weisbrod (1991) provides some important insights into progress in medical technology that may help us to answer this question, at least in part.

Today’s diagnostic capabilities, medical procedures, technological equipment, and pharmaceuticals have almost all been developed in the past 50 years. But the pace and direction of progress in medical technology has not been random. The translation of basic biological know-how into practical medical applications is heavily influenced by the market prospects for these new products. Indeed, most of today’s medical research and development focuses on market potential in industrial countries, rather than on medical needs in countries that suffer from a large burden of disease.

Weisbrod (1991) investigated the link between medical technological progress and health care insurance coverage. He concluded that:

both the pace and types of research and development are functions of rewards that are endogenously vari-

able, as are the comprehensiveness of insurance coverage and the breadth of access to it. (p. 524, emphasis added)

The interaction between research and development and health insurance is mutually reinforcing. A health care market with widespread insurance coverage is attractive from a research and development perspective: new products are likely to find a large demand. Conversely, the steady increase in new medical technologies (which more often than not raise costs) puts upward pressure on the need for health insurance, public or private. These forces create a spiral of ever-growing medical possibilities, increased health insurance coverage, and, in the end, steady growth in health care spending (figure 1).

As noted, when countries grow richer, health insurance coverage is increasingly a public issue. In other words, public policies on the depth and breadth of health insurance coverage provide the incentives for the development of the health care system. This development is strongly influenced by the direction and pace of research and development, one of the driving forces behind the rise in health expenditures.

Health expenditures by age group

Because of unpredictable long-term changes in medical technology, projections of health care expenditures that are based on current cross-sectional age profiles of spending can be highly misleading. Furthermore, given the endogenous nature of medical technology, any discussion of future health poli-

FIGURE I

Endogenous research and development and insurance lead to increasing health care expenditures

CHOICES IN FINANCING HEALTH CARE AND OLD AGE SECURITY
cies for the elderly should take into account the effects of policy-induced (and technology-driven) changes in age-expenditure profiles. Nevertheless, the differences in health care spending by age group are the starting point of the discussion. We now take a closer look at these differences.

Figure 2 shows two age-spending profiles for the United States, for 1953 and for 1987. The differences between the two years are dramatic, especially for the very young and the very old. In 1953 spending for the very old (85+) was $434 per person, compared with $340 for those age 35–44. This is a difference of about 30 percent.

By 1987 expenditures for the 35–44 group had almost tripled (to $1,095), but those for the oldest group were more than twelve times as high (to $5,650). This difference in growth in spending is even more pronounced when the observations are limited to high-cost users. While spending among high-cost users under 65 grew 2.4 percent a year, the rate of increase for the high-cost elderly was 4.9 percent a year (between 1963 and 1987).

Who are the high-cost elderly? A diagnostic profile of the top 10 percent of elderly spenders is shown in figure 3. More than 42 percent of the diagnoses are accounted for by circulatory disorders and neoplasms. The importance of neoplasms, circulatory disorders, and other chronic diseases is an increasing problem for all high-income, most middle-income, and several low-income countries. Estimates of the global burden of disease project that by 2020 noncommunicable diseases will account for more than half of all disability-adjusted life-years (DALYs) lost (figure 4). Communicable diseases, now at 49 percent, will account for just 22 percent of DALYs lost. We will return to this point when we discuss public policy options for preventing (the growth in) chronic diseases.

Another important aspect of the age-specific health expenditure profile is that a large portion of the expenditures occur in the last year of life. As Fuchs (1984) first pointed out, it makes a big difference (for projecting health care costs) if most expenditures occur in the year before death, rather than years after birth. A detailed study on Medicare payments during the last 60 days of life showed that such payments accounted for 27–30 percent of all Medicare costs during 1976–88 (Lubitz and Riley 1993). Zweifel, Felder, and Meier (1989) also conclude, from similar observations on Swiss data, that the correlation between high age and health care costs does not result from a person’s “calendar age,” but rather from the high expenditures that occur just prior to death. If this is true, and if this relationship is stable over time, it is not surprising that an aging population has a negligible effect on total health care expenditures. The effect could even be negative.

The studies by Lubitz and Riley and by Zweifel, Felder, and Meier use retrospective data in which the date of death...
Primary disorders among high-cost elderly patients in the United States

![Primary disorders among high-cost elderly patients in the United States](image)

Source: Cutler and Meara 1997.

The global burden of disease, 1990 and 2020

![The global burden of disease, 1990 and 2020](image)

Note: The burden of disease is measured in terms of disability-adjusted life-years (DALYs) lost. Source: World Bank data.

is known with certainty. However, physicians make decisions on the treatment of elderly patients under highly uncertain conditions. Thus it would be premature to conclude from the available studies that a large portion of health resources is "wasted" on those who will die soon anyway. Nevertheless, the studies show that unless we learn a lot more about the underlying causes of age-specific differences in health care expenditures, long-term projections have to be based on uncertain assumptions.

In sum, when discussing the effect an aging population has on a country's health care system, the following stylized facts need to be kept in mind:

- Aging does not affect the overall level of health care expenditures; it does affect the composition.
- The scope and pace of research and development is endogenously determined.
- Public financing of health costs is more prevalent in rich countries.
- Equity can only be achieved at high expenditure levels.
- The health transition shifts the burden of disease from communicable to chronic diseases.
- The distribution of health expenditures is highly skewed toward the final days of life.

In light of these observations, and given that demographic and economic projections imply that some of these trends may accelerate, how should policymakers respond?

Health Care Policies for the Elderly

One option for addressing the health needs of the elderly is not to adopt a special program for them at all. In most OECD countries the elderly are insured with the nonelderly in the same program, use the same providers and facilities, and are covered for the same procedures, services, and drugs. In some countries (such as the Netherlands) this is accomplished through a combination of mandated or strictly regulated public and private insurance schemes that pro-
vide comprehensive coverage independent of age. In other countries (such as the United Kingdom) the public health system covers all age groups equally.

Quantity rationing based on age can be present in either system. For instance, some procedures (organ transplants, renal dialysis) are considered ineffective after a certain age and are excluded from the insurance package. But by and large, public health insurance and health care delivery policies are not age-specific.

Given that the elderly spend more on health care than the nonelderly, these systems imply significant cross-subsidies from the young to the old. Insurance companies are prohibited from enrolling only young clients; thus cream-skimming based on age discrimination is not an issue. Even within these comprehensive (that is, age-integrated) systems there is still a lot of room for age-specific policies, however. For instance, in Germany only minor parts of long-term care are included in public health insurance schemes, while in Australia and Finland coverage is much more comprehensive. Not surprisingly, differences in health expenditures by age group vary widely across countries. In Germany per capita health expenditures for the elderly are 2.68 times those for the nonelderly; in Portugal the ratio is only 1:1.69. But in Australia, Japan, the Netherlands, Switzerland, and the United States per capita health expenditures for the elderly are more than four times those for the nonelderly (figure 5). Clearly, policy matters.

The contract implicit in these policies is that today's generation of workers subsidizes health care expenditures for the elderly in anticipation of receiving similar subsidies after retirement. Of course, this arrangement does not resolve the tension that will result from the upcoming demographic transition. With the number of working-age people shrinking, a smaller group of workers will be asked to subsidize the health care costs of a growing number of elderly. This inevitable tension may have long-term consequences for the composition of health care expenditures by age group.

Specific programs for the elderly

One alternative to addressing the health care needs of the elderly in an overall (national) health care plan is to design a health care financing system explicitly for them. The best known of such systems is the U.S. Medicare system. Established in 1965 as an amendment to the Social Security Act, its original aim was to "reduce dependency" in old age. Medicare automatically provides health insurance to people over 65, and to those entitled to specific disability programs.

Medicare consists of two parts. Part A is paid for by a 2.9 percent tax on all wages and earnings, paid half by...
employers and half by employees. This part covers a variety of medical expenses, including hospital care, but falls short of "reducing dependency." For instance, it does not cover hospital services beyond 150 days, and significant copayments are required from the first day on.

Part B, which is voluntary, provides more comprehensive coverage. Beneficiaries pay a monthly premium ($46.10 in 1995) that is supposed to cover one-quarter of actuarial costs. The rest is covered by general revenues. In reality, the premium fails short of one-quarter of costs, so part B requires heavy subsidies. Not surprisingly, 98 percent of Medicare insured are covered by parts A and B. In addition, 75 percent of those covered take out a Medigap insurance plan to cover remaining copayments and deductibles.

Since its conception in 1965, Medicare has grown to account for 42 percent of the more than $500 billion in public spending on health care (in 1997). As noted, during the late 1960s public per capita health care expenditures for the elderly grew an incredible 21.8 percent a year. A recent study comes to some surprising conclusions on the equity aspects of Medicare. While the large share of general revenues ensures that contributions are mildly progressive, wealthy enrollees reap greater benefits over their lifetimes because they live longer and use more medical services (Skinner and McClellan 1997).

Given the explosive growth in expenditures, it is not surprising that the central focus of the policy debate on Medicare is on how to save it from bankruptcy given the rapidly growing elderly population. What this debate seems to forget is that by itself aging has no discernible effect on a country's overall health expenditures. It appears that because Medicare is not integrated in a comprehensive national health care system, the policy debate fails to recognize the real causes of expenditure growth.

The extensive health insurance coverage provided by Medicare, at highly subsidized premiums, has created a market in which providers find an almost unlimited demand for new and ever more sophisticated (and expensive) medical procedures, services, and pharmaceuticals for the elderly. In 1965 this supply response (led by research and development) was probably not fully anticipated. Indeed, early projections of growth in Medicare expenditures were off by a factor of seven. At the time per capita health expenditures for those over 65 were only about 50 percent higher than expenditures for those between 35 and 44. Today costs for the elderly are four times higher, and costs for the rapidly growing group of those over 85 are more than five times higher.

Again, it is probably wrong to focus on overall health care expenditures. Rather, within the overall resource envelope, the elderly are claiming an increasing share. The same tension remains as in the European approach discussed above: a shrinking pool of contributors is subsidizing the health care costs of a growing pool of beneficiaries. While intergenerational subsidies may be desirable as long as today's workers can expect to be "paid back" when they retire, the demographic transition makes this far from certain.

Long-term care

One major issue that merits special attention is the way societies deal with the long-term care needs of the elderly. Too often the elderly are submitted not only to costly but also degrading and aggressive investigations and treatments just prior to death.

Throughout the world, there is widespread concern about how to fund and provide long-term care for old people who are no longer able to cope in an autonomous setting but who do not require acute medical treatment. Current arrangements, even in countries that have comprehensive long-term care policies, are considered unsatisfactory. Such long-term care may take one of four forms:

- **Domiciliary care.** Care based in the individual's home, provided informally by an unpaid worker or formally by a paid worker.
- **Residential care.** Care in a long-stay home or shelter designed for older people who are frail but not acutely ill.
- **Nursing care.** Care in a nursing home or geriatric ward.
- **Custodial care in an acute care setting.** Care in an acute care hospital in which a certain number of beds have been reserved for long-term care.

Each form has significant organizational and financing problems. On the provision side, there are problems relating to the assessment of care needs; the choice, continuity, and quality of care; and the level of responsibility and regulation of standards. On the financing side, problems arise in the total cost of formal care, the cost to taxpayers, the

**Choices in Financing Health Care and Old Age Security**
notional monetary value of informal care, and the opportunity cost of informal care.

Projections of the demand for and cost of long-term care in the United Kingdom are shown in table 4. One observation from this example, which has important policy implications, is that in many cases domiciliary care is more expensive than residential or even nursing care. Thus, in countries experiencing a significant aging of the population, finding a financially viable solution to the long-term care challenge should be a high priority for policymakers. Different countries have chosen different solutions in this respect (social insurance in Germany, public-private partnerships in the United States, means-tested tax funding in the United Kingdom, a savings option in Singapore), but few studies compare the relative merits of these solutions.

**Conclusion and Policy Options**

Aging does not affect a country’s overall health care expenditures. But the elderly do claim a growing share of overall resources. Moreover, the coming demographic transition will shrink the size of the group that contributes to current health expenditures for the elderly—that is, taxpaying workers.

The first part of this conclusion can be amply demonstrated with time series and cross-sectional data for a large number of countries. But there is no guarantee that it will continue to be true when the share of elderly in the population rises above, say, 20 or 25 percent. In any case, evidence shows that the main effect of demographic transition is on the composition of expenditures and on the relative size of benefit recipients (the elderly) and revenue contributors (the workers). Sooner or later, the fact that a shrinking group of workers is paying a large portion of the health care costs of a rapidly growing elderly population will make this implicit intergenerational subsidy untenable. What can be done?

Four groups of policy issues need to be considered in light of these problems. First, there is ample room in any health care system to increase efficiency. Second, since endogenous medical technology is largely responsible for the rise in health care expenditures the incentives for research and development need to be changed. Third, the equity issue needs to be reconsidered. Finally, there is much greater scope for preventive care than is currently realized.

**Increase efficiency**

If the United States could somehow change its current payment system to a single-payer system (as in Canada), it would realize a 15 percent savings in health care expenditures from administrative costs alone. Of course, administrative costs are only part of the story. By some estimates up to 30 percent of certain medical procedures have no discernible benefit. This is not a specific “old age” problem, but one that is pervasive throughout the health care world, in both industrial and developing countries.

The list of proposals to make health care systems more efficient is too long to reproduce here, but certain broad principles have emerged. First, open-ended benefit guarantee systems (such as Medicare) are likely to experience explosive expenditure growth, especially in a fee-for-service system. There are no incentives in such a system—on either the demand side or the supply side—to keep costs down or, at least, to search for more cost-effective ways to deliver services.

**TABLE 4**

**Projected long-term care needs in the United Kingdom**

<table>
<thead>
<tr>
<th>Year</th>
<th>1995</th>
<th>2011</th>
<th>2031</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of disabled people needing regular continuous care (millions)</td>
<td>2.2</td>
<td>2.6</td>
<td>3.3</td>
</tr>
<tr>
<td>Demand for care hours (millions)</td>
<td>6,600</td>
<td>7,700</td>
<td>9,700</td>
</tr>
<tr>
<td>Supply of informal care hours (millions)</td>
<td>5,000</td>
<td>5,800</td>
<td>5,900</td>
</tr>
<tr>
<td>Formal care hours required (millions)</td>
<td>1,100</td>
<td>1,900</td>
<td>3,800</td>
</tr>
<tr>
<td>Formal cost of long-term care (percentage of GDP)</td>
<td>1.8</td>
<td>3.0</td>
<td>5.9</td>
</tr>
<tr>
<td>Indicative cost to taxpayers (percentage of GDP)</td>
<td>1.3</td>
<td>1.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Notional monetary cost of informal care (percentage of GDP)</td>
<td>5.1</td>
<td>4.5</td>
<td>3.9</td>
</tr>
<tr>
<td>Opportunity cost (percentage of GDP)</td>
<td>4.5</td>
<td>5.9</td>
<td>8.9</td>
</tr>
</tbody>
</table>

Source: Richards 1996.
Proposed solutions generally call for a contribution-subsidy system, in combination with multiple, competitive, and highly regulated insurers. The idea is that it is in the best interest of people who are shopping for health insurance to choose the cheapest policy, or at least the policy that best suits their needs. Insurers, in turn, can compete on price, coinsurance rates, and coverage, by negotiating with (groups of) providers. Vouchers or other types of subsidies can put purchasing power in the hands of consumers who otherwise would not be able to afford health insurance. All forms of managed care (health maintenance organizations, internal markets, regulated competition) are based on these principles.

Second, copayments have been proven to be effective in reducing the demand for health care, without having adverse effects on health (Manning and others 1987). It seems reasonable to build in incentives against excess consumption of health care by asking consumers (at least those who can afford it) to contribute a larger share of the cost.

Third, a host of other cost containment measures can be considered. These include caps on the national health budget, quantity rationing for certain procedures, restrictions on the supply of physicians or hospital beds, and so on. Though the jury is still out on some of these measures (such as budget caps), the evidence suggests that in the long run none of them contributes significantly to increased efficiency, or to cost containment in the health care system.

Finally, a new instrument may hold promise: medical savings accounts (see Prescott and Nichols in this volume). By allowing the "savings" resulting from the prudent use of health care to accrue to consumers (who decide whether to pursue care), these accounts are yet another instrument designed to overcome some of the intrinsic inefficiencies in health care systems that enjoy extensive insurance coverage.

Change incentives for research and development

Current incentives for research and development do not contribute to the search for new procedures and products that are both effective and less expensive. Generally speaking, if a new product works (or, at least, if it does not harm), it can enter the market regardless of its cost. Public pressure on health policymakers (the equity principle) guarantees that the new product will be covered by health insurance (public and private). These incentives can be improved in a way that would make it harder for new products with only marginal medical benefits to enter the market, and would make it more attractive to devote research and development efforts to cost-reducing new medical technology.

Medical technology assessments can play a major role in this, as is increasingly the case in Europe. Alternative measures could include more favorable patent rights and tax breaks for cost-reducing research and development. Given that research and development is the most important factor behind the explosive growth in health expenditures in OECD countries, considerably more public attention should be paid to this issue.

Rethink the equity issue

As noted, equity in health care financing, access, and outcomes is a basic concern in all debates on health reform. It is considered unethical when people in need of health care cannot obtain it because of financial constraints. This position is widely held at relatively low levels of health care expenditures. For instance, it is at the core of the World Bank's global strategy for health, nutrition, and population (World Bank 1997).

At very high levels of health care expenditures, where outlays are increasingly discretionary and of marginal medical value, it may be worth rethinking whether the universal acceptance of this equity principle is in society's best interest. For example, while the current debate on health care reform implies, among other things, greater consumer choice and autonomy with respect to copayments and coverage, the equity principle would make this choice irrelevant. The debate on equity opens up basic ethical issues regarding public and private responsibilities for individual welfare. However, it should not be forgotten that all cost containment measures have such ethical implications.

Broaden the scope for prevention

While the prevention of communicable diseases has been widely recognized as a desirable and cost-effective public health intervention, the scope for prevention of chronic diseases is much larger than is currently reflected in public pol-
icly. Implementing effective health promotion and prevention programs that reduce chronic disease risk factors will have major implications for a country's future burden of disease. Three particularly important areas for action include combating the emerging epidemic of tobacco use, avoiding food subsidies for unhealthy foods, and expanding secondary prevention of the costly and debilitating complications of cardiovascular diseases.

Worldwide, there are only two large and growing causes of death: HIV/AIDS and tobacco use. Tobacco use now causes about 3 million deaths a year, of which up to 1 million are in developing countries. If current smoking patterns persist, by 2025 tobacco-related deaths will increase to 10 million a year, with 70 percent of these in developing countries. Many of these deaths occur in productive middle age (35–69), with an average loss of 20 to 25 years of life. By 2025 premature deaths from tobacco use are likely to exceed those from HIV/AIDS, tuberculosis, and child-birth complications combined (figure 6). In developing countries tobacco deaths are likely to be highest in China, South Asia, East Asia, and the formerly Soviet states (Murray and Lopez 1996).

Reducing this risk factor among middle-age populations generates benefits for older groups. For example, quitting smoking at young middle-age lowers the probability of premature death to that of nonsmokers' levels. Key elements of effective tobacco control include high prices, serious and prominent health warnings (as in Canada and Thailand), bans on advertising and promotion of all tobacco products or trade-

FIGURE 6
Disability-adjusted life-years lost to tobacco use, diarrhea, and HIV/AIDS worldwide, 1990–2020

Though all these measures are likely to have a sizable effect on a country's long-term burden of disease, their effect on overall health care expenditures is less predictable. After all, the evidence is overwhelming that, when they have the financial means, people like to buy health care. As a result societies choose the best health care system they can afford. The long-term public policy issue is how to shape the health care system in a way that maximizes a country's overall welfare, of which health status is but one—albeit important—component.
Notes

1. The authors are grateful to Ed Bos for the demographic projections presented in this section.
2. It is estimated that up to 75 percent of Medicare coverage “replaces” private health insurance coverage.
3. Again, the United States is an exception. Its public share is about 50 percent.
4. Estimates based on cross-sectional household-level data usually provide values between 0.2 and 0.4. Thus income growth may account for only 5 to 10 percent of the increase.
5. See Manning and others (1987) for estimates of the price elasticity of medical care for the United States. See Gertler and van der Gaag (1990) for estimates for developing countries.
6. Newhouse also looks at “supplier-induced demand” and “factor productivity in a service industry,” but concludes that neither contributes much to understanding the explosive growth in health care expenditures.
7. High-cost users are defined here as users with expenditures in excess of $2,000 in 1987 dollars (Cutler and Meara 1997, p. 13). Note that expenditure data do not include nursing homes.
8. As a result beneficiaries pay only about 12 percent of total costs.
9. The overall picture is a bit more complicated because elderly below a certain income level are also eligible for Medicaid, the U.S. health insurance system for the poor. In that case, Medicaid fulfills a similar role as the supplemental insurance provided by part B and Medigap.
10. Given U.S. per capita income, this would almost bring U.S. health expenditures in line with those in other OECD countries.
11. Ironically, the U.S. Office of Technology Assessment has fallen victim to Congress’s quest for a balanced budget.
12. Interestingly, medical savings accounts avoid this problem by allowing the savings from reduced use of care to accrue to the individual who makes that decision, while those who ex ante decide not to participate in such accounts cannot, ex post, become free-riders.

References


International Comparison of Medical Savings Accounts

Nicholas Prescott and Len M. Nichols

Medical savings accounts are an important innovation in the design of health financing instruments. Singapore invented medical savings accounts in the early 1980s and was the first country to implement them nationwide in 1984. Even today Singapore’s Medisave scheme is the only operational medical savings account program that is fully integrated with any country’s health financing structure. Several other countries are starting to experiment with medical savings accounts. Following the collapse of President Bill Clinton’s health reform plan for mandatory universal health insurance coverage, the United States has legislated two experiments with medical savings accounts—one for the elderly and one for the working population. China has implemented mandatory medical savings accounts in 2 major cities and is extending the pilot to 58 others. And Malaysia is contemplating a major health financing reform based on medical savings accounts.

Given this growing interest in medical savings accounts and their potential role in health reform, it is timely to examine and distill the lessons of experience with medical savings accounts and assess their implications for other countries. This paper compares Singapore’s experience with the U.S. experiments. Both countries have a high standard of living, Singapore is one of East Asia’s dynamic tiger economies, with a per capita GNP (expressed in purchasing power parities) of $22,770—nearly as high as the U.S. level of $26,980 (World Bank 1997). Yet these two high-income economies have taken different approaches to medical savings accounts, with different effects on the health policy objectives of resource mobilization, efficiency, and equity.

Risks, Insurance, and Medical Savings Accounts

The distribution of health care expenditures in all nations is highly skewed. In the United States, for example, the most expensive 10 percent of the population accounts for 70 percent of health spending in a given year (Berk and Monheit 1992). Health spending among this group is 8 times the populationwide average—and that of the top 1 percent is 30 times the national mean expenditure. The skewed financial risks associated with medical care are illustrated in figure 1, where $T(x)$ represents total financed expenditures and $HH(x)$ represents household or privately financed expenditures.¹

Annual household expenditures are measured along the horizontal axis. The vertical axis measures the percentage of households with particular health expenditure levels. The area under $T(x)$ represents total national health spending; the difference between total and household spending is spending by the public sector. Different financing systems have these lines closer or farther apart, depending on the importance of public subsidies. Household expenditures are the sum of out-of-pocket payments, private insurance payments for health services, and payments for health services made out of medical savings accounts. Any or all of these components could be zero in any particular health financing system.

This skewed distribution of health spending means that some kind of pooling or insurance mechanism is needed to guarantee access to high-cost but necessary health care.

Nicholas Prescott is senior economist in the Health, Nutrition, and Population Sector Unit of the East Asia and Pacific Region at the World Bank. Len M. Nichols is principal research associate at the Urban Institute in Washington, D.C.
Health risks can be pooled in two ways: cross-sectionally, across individuals and families in a given year; or intertemporally, over many years within a single individual or family (Nichols, Prescott, and Phua 1997). The fundamental problem with comprehensive insurance in a cross-sectional pool is moral hazard: adequate resources could be marshalled for any health care need, but low copayment requirements could lead to excessive demand for health services. Some kind of demand management is then required. The fundamental problem with intertemporal risk-pooling is cash flow: until an individual’s annual contributions to a medical savings account have accumulated over many years, resources are inadequate for unpredictable and catastrophic health care needs. Some kind of cross-sectional pooling is required to insure against these catastrophic needs.

Combined, medical savings accounts and high-deductible backup insurance could deal effectively with both risk-pooling problems. Greater patient awareness of the costs of health care, accomplished through the high-deductible policy, reduces the moral hazard associated with cross-sectional pooling, and the backup insurance reduces the cash-flow problem of intertemporal pooling over an individual’s lifetime. By itself a medical savings account is a weak intertemporal risk-pooling device for an individual or family, for while it can accumulate and soften the blow of the high deductible, it can never finance the contingency of being in the top 1 percent or even 10 percent (in terms of costs) of those needing health care. In contrast, a cross-sectional insurance backup, by pooling health risks across many individuals and families in a given year, could easily finance the large health care needs of the few who will have them with per capita premiums or tax payments that are relatively modest.

**Singapore’s Experience**

Singapore’s medical savings account model, implemented in 1984, embeds individual medical savings accounts in a multipillar framework of interlocking health financing instruments. Medisave is backed by Medishield, a cross-sectional catastrophic risk-pooling backup scheme introduced in 1990 and augmented by Medishield Plus in 1994. Medishield is reinforced by Medifund, a means-tested safety net for the poor introduced in 1993. This three-tier package—Medisave, Medishield, and Medifund—is in turn supported by extensive government subsidies aimed at lowering the cost of medical care to users of public services.

**Institutional features**

**Intertemporal savings:** The financial operations of Medisave are an integral part of the compulsory public sector social security system managed by the Central Provident Fund. Contributions to the fund are mandatory for all employees and, since July 1992, for the self-employed. Coverage is nearly universal, with 80 percent of the population holding Medisave accounts.

The mandatory payroll deduction for the Central Provident Fund is equivalent to 40 percent of the wage bill, divided equally between employers and employees. Out of this 40 percent, 6–8 percentage points (depending on age) are allocated to the member’s Medisave account. The Medisave contribution rate was set at 6 percent based on charges for treatment in a public hospital class C ward. These contributions are tax-deductible, thus conveying an implicit tax subsidy to the Medisave scheme. Medisave funds are interest bearing, with the Central Provident Fund providing centralized management of the investible assets. However, Medisave balances are capped at S$ 19,000, beyond which incremental savings are rolled over into the member’s Ordinary Account, from which funds can be withdrawn after age 55. Unlike other Central Provident Fund accounts, Medisave balances cannot be withdrawn after 55,
because the purpose of the so-called minimum balance is to cover anticipated class C hospitalization needs during retirement.

Withdrawals from Medisave accounts are discretionary. They can be used to pay medical bills incurred not only by account holders but also by their immediate family members, with public or private providers. But the withdrawal rules impose two important exclusions. Because Medisave is designed to pay for high-cost but low-probability hospitalization expenses, ambulatory care is not eligible for payment by Medisave (except for certain high-cost procedures such as renal dialysis and cancer therapy). Moreover, eligible hospitalization expenses are capped at S$300 a day, plus defined limits per surgery. As a result the average hospital bill requires a significant copayment on top of the portion reimbursable by Medisave. These rules apply to the elderly and nonelderly alike, and there are no explicit stop-loss provisions.

Cross-sectional backup insurance. Coverage by Medishield (the backup insurance scheme) is quasi-compulsory. Medisave account holders are covered unless they opt out, with the annual premiums deducted from their Medisave account. Coverage is high because just 12 percent of Medisave account holders opt out. Opt-out rates are higher among the elderly, however-reaching about 25 percent among Singaporeans between 61 and 70—raising the possibility of adverse selection (Ministry of Trade and Industry 1996).

Medishield claims are subject to high event-based (as opposed to annual) deductibles ranging from S$500 for the lowest-quality class C wards to S$1,000 for class B2 wards. Medishield Plus, which is targeted at users of the higher-quality class B1 and class A wards, imposes higher deductibles ranging from S$2,500 under plan B to S$4,000 under plan A. All Medishield plans are subject to a 20 percent coinsurance charge that can be financed with Medisave funds. In addition, Medishield imposes claim limits per policy year of S$20,000 for basic coverage, S$50,000 for Medishield Plus A, and S$70,000 for Medishield Plus B. Corresponding limits per lifetime are S$80,000, S$150,000, and S$200,000. These limits are stop-loss provisions for the insurance fund itself, not for the households on which the event-based deductibles impose financial liabilities.

Coverage expires at age 75 under all Medishield plans, but coverage up to 80 is now available through the Incomeshield catastrophic medical plan offered by the National Trades Union Congress.

Medishield coverage is backed by sizable government subsidies. In 1995 government spending on health accounted for 8 percent of consolidated central government expenditures and financed 36 percent of all health expenditures. Most government spending on health (61 percent) is used to subsidize hospital services where public provision dominates, with government and restructured hospitals accounting for three-quarters of all hospital admissions. These subsidies are channeled through the supply side to public providers, and transferred to users who choose public hospitals by lowering the net price of services charged at the point of consumption.

Social safety net. Patients who are unable to pay their bills at government hospitals, even after drawing on Medisave and Medishield, can apply for a means-tested grant from their hospital Medifund committee. This safety net is targeted at households with two adults and three children earning less than S$1,400 a month—roughly the lower one-third of the income distribution (Ministry of Trade and Industry 1996). Medifund is an autonomous endowment fund financed by periodic allocations from the government’s budget surplus. Only Medifund’s investment income is available to finance these demand-side subsidies targeted at the poor.

Resource mobilization

Medical savings accounts were intended to mobilize non-budgetary resources to help pay for the increasing health expenditures anticipated from Singapore’s aging population (Phua 1987). With remarkable foresight, the Blue Paper setting out the National Health Plan featuring Medisave stated that “elderly Singaporeans will increase both in absolute numbers and as a percentage of the total population. In some developed countries, the elderly occupy more than 50 percent of the non-psychiatric hospital beds although their share in the population is below 15 percent. We must anticipate this serious problem.” Recognizing that “the major portion of a person’s lifetime hospitalization expenses is

INTERNATIONAL COMPARISON OF MEDICAL SAVINGS ACCOUNTS

21
### Table 1: Sources of Health Financing in Singapore, 1984–95

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector</td>
<td>557</td>
<td>439</td>
<td>611</td>
<td>772</td>
<td>1,147</td>
<td>1,337</td>
<td>1,752</td>
</tr>
<tr>
<td>Budgetarya</td>
<td>539</td>
<td>334</td>
<td>441</td>
<td>559</td>
<td>900</td>
<td>1,032</td>
<td>1,418</td>
</tr>
<tr>
<td>Government consumptionb</td>
<td>462</td>
<td>303</td>
<td>402</td>
<td>518</td>
<td>759</td>
<td>821</td>
<td>1,032</td>
</tr>
<tr>
<td>Gross capital formationc</td>
<td>77</td>
<td>31</td>
<td>39</td>
<td>41</td>
<td>142</td>
<td>210</td>
<td>386</td>
</tr>
<tr>
<td>Extrabudgetary</td>
<td>18</td>
<td>105</td>
<td>170</td>
<td>214</td>
<td>247</td>
<td>276</td>
<td>296</td>
</tr>
<tr>
<td>Medisave</td>
<td>18</td>
<td>105</td>
<td>170</td>
<td>208</td>
<td>237</td>
<td>276</td>
<td>296</td>
</tr>
<tr>
<td>Medifund</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Private sector</td>
<td>650</td>
<td>819</td>
<td>1,014</td>
<td>1,464</td>
<td>1,865</td>
<td>2,138</td>
<td>2,044</td>
</tr>
<tr>
<td>Private consumptiond</td>
<td>625</td>
<td>702</td>
<td>969</td>
<td>1,312</td>
<td>1,670</td>
<td>1,894</td>
<td>2,044</td>
</tr>
<tr>
<td>Gross capital formatione</td>
<td>25</td>
<td>117</td>
<td>44</td>
<td>152</td>
<td>195</td>
<td>245</td>
<td>–</td>
</tr>
<tr>
<td>Net exports</td>
<td>44</td>
<td>53</td>
<td>69</td>
<td>76</td>
<td>90</td>
<td>118</td>
<td>123</td>
</tr>
<tr>
<td>Total</td>
<td>1,250</td>
<td>1,311</td>
<td>1,694</td>
<td>2,312</td>
<td>3,103</td>
<td>3,593</td>
<td>3,919</td>
</tr>
<tr>
<td>Health/GDP (percent)</td>
<td>3.1</td>
<td>3.4</td>
<td>3.4</td>
<td>3.4</td>
<td>3.8</td>
<td>3.3</td>
<td>3.2</td>
</tr>
</tbody>
</table>

**Notes:**
- a. Health expenditure data reported to the International Monetary Fund less revenues accruing to the Ministry of Health.
- b. Residual includes Ministry of Health and other government expenditure on health.
- c. Development expenditure for hospitals incurred by the Ministry of Health prior to 1993, less capital grants provided as depreciation subsidies on assets used in subsidized medical care.
- d. Private consumption expenditure on medical care from the national accounts less outlays from Medisave and Medishield.
- e. Private expenditure on fixed assets (assumed to exclude Ministry of Health direct development expenditure on restructured hospitals).

**Source:** Authors' estimates

Incurred after 55 years old," the National Health Plan proposed that "a small but regular saving set aside every month should ensure that most Singaporeans will be able to pay for their own hospitalization expenses. This is the philosophy behind the Medisave scheme which the Ministry intends to implement" (Ministry of Health 1983).

**Static shares.** A proper assessment of the effectiveness of Medisave in mobilizing resources for health should take into account both static and dynamic perspectives. A static view of the importance of Medisave is given by its weight in the overall structure of health financing (table 1). Singapore's gross domestic health expenditure was S$3,919 million in 1995, implying that 3.2 percent of GDP was spent on health. Of this, half (52 percent) was financed by private sector sources and one-third (36 percent) by the public budget. An additional 3 percent of gross domestic health expenditure was financed by net exports of medical services.

The extrabudgetary public sector—Medisave, Medishield, and Medifund—financed only 8.5 percent of health spending. In 1995 Medisave disbursements totaled S$296 million, or 7.6 percent of national health expenditure. Medishield outlays financed only 0.7 percent and Medifund, 0.2 percent. This static perspective shows that Medisave plays only a niche role in mobilizing resources to finance gross domestic health expenditures. At the margin, the growth of Medisave since 1984 to fill this 7.6 percent niche has succeeded in substituting nonbudgetary financing for budget outlays, which otherwise would have risen even faster than they did. Thus, while the share of budgetary financing in gross domestic health expenditure fell from 43 percent to 36 percent to offset the emergence of Medisave, the health sector's share of government spending rose from 6.2 percent to 8.6 percent (IMF 1996). Without the substitution into Medisave, government spending on health would have risen to 10.3 percent.

While Medisave's role appears modest relative to aggregate health expenditures (including nonhospital outlays), this comparison understates Medisave's significance in financing its targeted segment of the financial risk distribution. When viewed relative to the inpatient expenditures at which it is targeted, Medisave finances 27 percent of the costs of service provision and 45 percent of net patient bills (after the subsidy).

**Dynamic prospects.** From a dynamic perspective, Medisave has the potential to play an increasingly important role in...
aggregate financing as individuals continue to save and accumulate Medisave assets, and as the proportion of elderly in the population rises. By 1995 Medisave had mobilized net financial assets worth S$ 12,700 million—an amount equivalent to 11 times total spending on medical care for hospital inpatients and 3 times the entire national health expenditure (table 2).

The underlying savings accumulation by individuals is reflected in the increase in per capita Medisave balances, which tripled from S$ 1,800 in the first year of Medisave (1984) to S$ 5,400 in 1995. By 1995 the average nominal balance at age 55 was S$ 10,500, enabling 44 percent of employees to attain the required minimum balance at age 55.

Four factors explain the impressive net financial resources mobilized by Medisave. First, it was initially capitalized by transferring assets that had been accumulating in Central Provident Fund members’ Special Accounts since 1977 (at payroll contribution rates of 1–7 percent). This initial capitalization amounted to S$ 2,180 million—roughly twice the national health expenditure in 1984. Thus Medisave began its operations with a large opening balance, and has continued to grow with net contributions and interest earnings from assets.

Second, the growth in net financial assets was fueled by extensive payroll contributions, which were facilitated by the high proportion of formal employment in Singapore’s rich, urbanized economy, together with the fast growth in real wages resulting from the country’s rapid economic growth. Nearly universal coverage was attained with ease by tapping into the well-established social security operations of the Central Provident Fund. Under these favorable conditions, annual contributions to Medisave have grown by an average of 13 percent a year since 1984.

Third, the revenue effect of these contributions was compounded by interest paid on Central Provident Fund balances. Over this period the implicit rate of return on assets ranged from a peak of 6.1 percent in 1984 to 2.2 percent in 1993. The portion of Central Provident Fund interest earnings attributable to Medisave balances is substantial, and generally exceeds annual withdrawals from Medisave. For example, in

| TABLE 2 |
| Financial operations of Medisave, Medishield, and Medifund, 1984–95 |
| (millions of Singapore dollars) |

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medisave</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capitalization²</td>
<td>2,180</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Contributions</td>
<td>485</td>
<td>819</td>
<td>831</td>
<td>1,090</td>
<td>1,354</td>
<td>1,692</td>
<td>2,030</td>
</tr>
<tr>
<td>Net withdrawals⁰</td>
<td>18</td>
<td>105</td>
<td>170</td>
<td>208</td>
<td>237</td>
<td>276</td>
<td>296</td>
</tr>
<tr>
<td>Gross savings</td>
<td>467</td>
<td>714</td>
<td>661</td>
<td>882</td>
<td>1,117</td>
<td>1,416</td>
<td>1,735</td>
</tr>
<tr>
<td>Net savings⁰</td>
<td>467</td>
<td>714</td>
<td>661</td>
<td>850</td>
<td>1,079</td>
<td>1,358</td>
<td>1,670</td>
</tr>
<tr>
<td>Net assets</td>
<td>2,537</td>
<td>4,477</td>
<td>5,613</td>
<td>7,050</td>
<td>9,078</td>
<td>11,120</td>
<td>12,700</td>
</tr>
<tr>
<td>Medishield²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premiums</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>32</td>
<td>38</td>
<td>57</td>
<td>64</td>
</tr>
<tr>
<td>Investment income</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Net assets</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>27</td>
<td>88</td>
<td>160</td>
<td>203</td>
</tr>
<tr>
<td>Cost of claims</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>7</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>Administrative costs</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Expenditures</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6</td>
<td>10</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Medifund</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grants</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Inpatient claims</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Outpatient claims</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total expenditures</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Total balance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>305</td>
<td>405</td>
</tr>
</tbody>
</table>

b. Gross amount withdrawn less amount refunded.
c. Contributions less withdrawals and deduction of Medishield premiums.
d. Includes Medishield Plus.
Source: Central Provident Fund, Annual Report (various years), Singapore.

INTERNATIONAL COMPARISON OF MEDICAL SAVINGS ACCOUNTS 23
1995 these earnings totaled S$ 407 million—more than a third more than the S$ 296 withdrawn from Medisave.

Finally, Medisave outlays have been sharply contained by the entry and exit rules for withdrawals. Annual withdrawals from Medisave accounts are much smaller than the flow of contributions, generating an accumulating stock of Medisave balances available to finance future claims. In 1995 Medisave withdrawals totaled S$ 296 million, compared with estimated contributions of around S$ 2,000 million. Thus the payout ratio, which peaked at 21 percent in 1988, has fallen to 15 percent. This slowdown partly resulted from the cap of S$ 300 on eligible daily hospital charges having remained constant in nominal terms. Given these design parameters, Medisave generated a net savings rate of 82 percent in 1995 (contributions less withdrawals for Medisave claims and for Medishield premiums).

**Efficiency**

Medisave’s design positions its financing role toward the welfare-enhancing area on the right-hand side of the financial risk distribution for medical care (see figure 1). By excluding coverage of the left-hand tail of expenditures on outpatient care, Medisave efficiently targets the need to pool the major financial risks associated with low-probability but high-cost inpatient hospital care. Since outpatient care could consume more than half of all health expenditure, this exclusion helps generate the high net savings needed to accumulate sufficient assets in the intertemporal risk pool dedicated to covering the large financial risks that need to be insured.

**Cost sharing.** The insurance benefits of pooling risk for hospitalization costs under Medisave are balanced by efficiency incentives for demand management. The reimbursement caps set by the withdrawal rules mean that Medisave does not cover a significant portion of patient bills. In 1995 the weighted average cost per inpatient admission in public and private hospitals was S$ 2,720 (table 3). On average, about 32 percent of all hospitalization costs are subsidized, with public hospital inpatients averaging a 50 percent subsidy and private inpatients getting zero. The residual 68 percent of costs is split between Medisave and other copayments, with each bearing 45 percent and 55 percent of the average bill, respectively. Thus the average patient pays not only the coinsurance fraction of 30 percent from his or her Medisave account, but also 38 percent from out-of-pocket or other sources.

### TABLE 3
**Structure of inpatient hospital finance in Singapore, 1995**

(Percent unless otherwise noted)

<table>
<thead>
<tr>
<th>Ward</th>
<th>C</th>
<th>B2</th>
<th>B1</th>
<th>A</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost per admission (Singapore dollars)</td>
<td>1,900</td>
<td>2,467</td>
<td>2,331</td>
<td>2,854</td>
<td>2,349</td>
<td>3,800</td>
<td>2,720</td>
</tr>
<tr>
<td>Subsidy per admission (Singapore dollars)</td>
<td>1,406</td>
<td>1,661</td>
<td>603</td>
<td>220</td>
<td>1,166</td>
<td>0</td>
<td>868</td>
</tr>
<tr>
<td>Bill size per admission (Singapore dollars)</td>
<td>494</td>
<td>806</td>
<td>1,728</td>
<td>2,634</td>
<td>1,182</td>
<td>3,800</td>
<td>1,852</td>
</tr>
</tbody>
</table>

**Memo items**

<table>
<thead>
<tr>
<th>Ward</th>
<th>C</th>
<th>B2</th>
<th>B1</th>
<th>A</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total admissions (number)</td>
<td>54,687</td>
<td>109,373</td>
<td>76,561</td>
<td>25,520</td>
<td>266,142</td>
<td>91,413</td>
<td>357,555</td>
</tr>
<tr>
<td>Share of public admissions</td>
<td>24</td>
<td>41</td>
<td>29</td>
<td>10</td>
<td>100</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Share of total costs</td>
<td>11</td>
<td>28</td>
<td>18</td>
<td>7</td>
<td>64</td>
<td>36</td>
<td>100</td>
</tr>
<tr>
<td>Share of total subsidy</td>
<td>25</td>
<td>59</td>
<td>15</td>
<td>2</td>
<td>100</td>
<td>0</td>
<td>—</td>
</tr>
<tr>
<td>Subsidy/total costs</td>
<td>74</td>
<td>67</td>
<td>26</td>
<td>8</td>
<td>50</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>Bill/total costs</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>38</td>
<td>—</td>
</tr>
<tr>
<td>Medisave/costs</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>68</td>
<td>—</td>
</tr>
<tr>
<td>Other copayment mechanisms/costs</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>38</td>
<td>—</td>
</tr>
<tr>
<td>Medisave/bill</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>45</td>
<td>—</td>
</tr>
<tr>
<td>Other copayment mechanisms/bill</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>55</td>
<td>—</td>
</tr>
</tbody>
</table>

a. Includes Ministry of Health and restructured hospitals.
b. Estimated as (patient bill size)/(1 − subsidy ratio).
c. Estimated as (estimated cost per admission) − (patient bill size).
d. Of this, S$ 828 was financed by Medisave and S$ 1,024 was financed by other copayment mechanisms.
e. Unweighted averages.

Source: Ministry of Trade and Industry 1996.
The incentive effects of this cost-sharing structure are attenuated for working users of Medisave by the widespread provision of employer-financed medical benefits. In 1995, 98.6 percent of all employees in private establishments with more than 25 employees—in other words, half the labor force—were given medical insurance by their employers (Ministry of Labour 1996). These benefits are typically comprehensive, including coverage of hospital ward costs, specialist and surgical fees, and outpatient consultations (Singapore National Employers Federation 1994a, 1994b, 1995). The average annual medical cost per employee was S$ 448 in 1995, implying a total value of medical benefits in the private sector of at least S$ 385 million—more than the amount withdrawn from Medisave. Civil servants also receive medical subsidies to help finance copayments for medical care. In 1989 the government implemented interdepartmental charging of health services, so these subsidies have since been borne by individual ministries instead of centrally by the Ministry of Health.

Cost containment. Whether medical savings accounts can help solve the moral hazard associated with cross-sectional risk-pooling is of great interest to U.S. observers (Hsiao 1995; Massaro and Wong 1995). Hsiao asserts that “Singapore implemented an MSA scheme to ameliorate the moral hazard arising from insurance... [and] has found that the theory has not been supported by the evidence.” This judgment attributes the U.S. goal of cost containment to Singapore, whereas Medisave was aimed at resource mobilization. As stated in the Blue Paper, the objective of the National Health Plan was “to build up individual financial resources so that those who fall sick would have the means to pay for their health care.” Indeed, Singapore’s remarkably low share of health costs in GDP rose from 3.1 percent at the beginning of Medisave to just 3.2 percent in 1995. Over the same period the U.S. share of health costs in GDP increased from 10.8 percent to 13.6 percent (Schieber, Poullier, and Greenwald 1994).

Equity

Medical savings accounts can pose equity risks by exposing patients to the full cost of medical care. Singapore manages these risks by incorporating two pro-poor design features into the multipillar financing framework in which Medisave is embedded.

Supply-side subsidies. Budget subsidies finance about 50 percent of public sector inpatient costs. These subsidies greatly augment the cross-sectional risk pool and are designed to be self-targeting to poor users. Subsidies are channeled from the Ministry of Health to public hospitals, and passed on to users through a multitier pricing structure.

The explicit policy of price discrimination is based on the four hospital wards in public hospitals, ranging in ascending order of comfort from class C through B2 and B1 to A. Data for 1995 indicate that subsidy rates are highly differentiated across ward classes—averaging 74 percent of hospital costs in class C and falling to 67 percent in class B2, 26 percent in class B1, and 8 percent in class A. Given the different patterns of use, the inpatient subsidies are efficiently targeted toward lower-quality wards. About 25 percent of subsidies are targeted to class C wards, 59 percent to class B2, 15 percent to class B1, and 2 percent to class A (see table 3).

These different subsidy ratios are intended to help equalize the affordability of the class-specific prices relative to the income levels (and corresponding Medisave balances) of the patients who select them. Public hospitals provide financial counseling to prospective inpatients to facilitate selection of an affordable ward class based on the expected hospital bill and the individual’s Medisave balance. The effect of the price discrimination policy on affordability can be illustrated by the distribution of price-income ratios, assuming a certain income distribution of use (which is not directly observable). Suppose the distribution of use is such that the poorest quintile uses class C, the next poorest quintile uses class B2, and so on, with the richest quintile using private hospitals. Given the average cost of a hospital admission in each service category, the price-income gradient would be regressive without the price subsidy. The poorest quintile would face a catastrophic price equivalent to 55 percent of annual per capita expenditure, while the richest quintile would face a price-income ratio of only 21 percent. With the subsidies, the price-income ratio gradient becomes progressive—starting at 14 percent for users of class C wards and increasing to 31 percent for class A wards.

Demand-side subsidies. Medifund provides a means-tested safety net of last resort for poor patients who cannot pay the copayments on subsidized bills. Medifund is not an entitlement program, and available funding is limited to the
investment income earned on discretionary allocations from
government budget surplus. Many indigent patients
have obtained assistance, however. Those assisted account
for an increasing share of inpatient admissions at the class
C and B2 levels—3.3 percent in 1993, 4.2 percent in 1994,
and 5.8 percent in 1995 (Ministry of Trade and Industry
1996).

The U.S. Experiments

The United States implemented a medical savings account
demonstration project in 1997. The political economy and
goals of medical savings accounts in the United States are
quite different than in Singapore and other East Asian coun-
tries, however. In the United States the overriding health
policy problem is cost control, not resource mobilization
or equity.

During the 1980s and early 1990s businesses, house-
holds, and public programs experienced double-digit infla-
tion in insurance premiums and direct payments for health
services. Today the United States spends 14 percent of GDP
on health—by far the highest percentage in the world, and
twice the level in 1970. Some 15 percent of the population
(about 40 million people) lacks health insurance, but most
uninsured who need acute care receive free hospital care
each year, with more than $17 billion financed directly
with government subsidies and indirectly with private price
discrimination by nonprofit providers. Most Americans
dowplay current equity or saving for future health care
needs because they know that the poor are insured through
Medicaid, they perceive that the uninsured have adequate
access to acute care through uncompensated care policies,
and they believe that the elderly will always have Medicare
(a pay as you go tax-financed insurance program for the
aged). Thus the goal of cost containment is paramount.

Medical savings accounts in the United States are a response
not just to the problem of cost control, but to its increasingly
common “solution”—the proprietary managed care health
plan. Unlike traditional indemnity (fee-for-service) insur-
ance carriers, managed care plans do not behave merely as
financial intermediaries who collect and pass insurance pre-
miums through to providers at prices and utilization levels
chosen by the providers. Managed care plans, epitomized by
health maintenance organizations (HMOs), actively structure
delivery patterns, information systems, and provider contracts
to maximize the incentives to provide cost-effective care—
and no more. In the U.S. context of a previously overfunded
and inefficient delivery system, this reorganization of care
delivery patterns has created and exposed considerable excess
provider capacity. Today U.S. hospitals operate at about 60
percent of capacity, and consensus estimates of a physician
surplus are in the 30–40 percent range.

The health system reorganization resulting from this
excess capacity has unleashed a struggle for control between
specialist physicians and managed care plans. Specialist
physicians, in great surplus, have found ready allies among
traditional indemnity insurers, for both have lost market
share to managed care plans. The rapid growth of man-
aged care has frightened some consumers who are worried
about the plans’ incentives to deny care and restrict access
to expensive specialists. Physicians and indemnity insurers
emphasize the importance of patients being able to choose
their providers, and view managed care as a path to cost
control that strips patients of that choice. Medical savings
accounts and high-deductible indemnity plans, they con-
tend, would control costs while preserving patient control.
This assertion, that cost containment can be had without
surrendering some control, supports specialist physician
self-interest, indemnity insurer self-interest, and a libertar-
ian preference for individual over institutional control that
has great resonance in the deeply individualistic ethos of
the United States. The strong desire to contain costs with-
out forgoing personal choice of providers or control over
care management strategies explains the political support
for medical savings accounts.

Medical savings accounts for the nonelderly

Intertemporal savings. Under the Health Insurance
Portability and Accountability Act of 1996 (Law 104-191),
the U.S. Congress authorized that up to 750,000 medical
savings accounts could be established on a tax-preferred
basis. Eligibility for coverage is restricted to the self-employed
and employees of small firms (fewer than 50 workers) for
a limited period (1997–2000).

The decision to create a medical savings account is entirely
voluntary. Since family coverage is allowed, 1.5–2.0 million
people—less than 1 percent of the population—could ulti-
mately have medical savings accounts under this experimental program. The experiment was limited because of fears about self-selection. It was feared that in a voluntary context, only the relatively healthy would be inclined to set up medical savings accounts. If the healthy left comprehensive insurance products—traditional cross-sectional risk pools—in large numbers, premiums and health care costs for the unhealthy could rise substantially. Thus an experiment was devised to observe actual behavior and the type of people attracted to medical savings accounts so that Congress could decide whether to broaden access to them. By 30 April 1997 about 9,000 medical savings accounts had been created.

A medical savings account in the United States is a trust or custodial account set up for the sole benefit of the individual or family. A bank or an insurance company must be the trustee of the account, and these private entities manage the account contributions, investments, earnings, and distributions to the account holder.

Contributions to the medical savings account can be made by employers or workers, but not both. As a practical matter employers are expected to contribute some large portion of premium savings (from switching out of a comprehensive policy) on behalf of workers, and the self-employed must contribute for themselves. Moneys contributed to medical savings accounts and earned by unused medical savings account balances are exempted from the employee’s or self-employed person’s income taxes only if an appropriately high-deductible (backup) insurance policy is also purchased each year.

Contributions have no lower limits but were subjected to upper limits for two reasons. First, there was a political concern that unlimited medical savings accounts might become an open-ended tax-preferred savings vehicle for high-income account holders, who would contribute while their income and progressive income tax rates were high and withdraw excess balances later when their income and tax rates were lower. Second, if the medical savings account balance were as large as the deductible, the household would effectively have first dollar coverage for all health expenses, and this could negate the cost containment incentives that some proponents were trying to create. So, contributions to the medical savings account were limited to 65 percent of the catastrophic plan’s deductible for an individual and 75 percent of the deductible for a family. Thus if an employer set up a family health insurance plan with a $4,000 deductible, the maximum amount of tax-free dollars that could flow into the account each year would be $3,000.

Withdrawals are not subject to limits as long as they are spent on medical expenses as defined (quite broadly) in the U.S. tax code. There are also no restrictions on the prices providers can charge medical savings account holders. Medical savings account balances can accumulate to any amount, and unused balances can be invested to earn income that is income tax-free unless withdrawn for nonmedical expenses. The prospect of balances accumulating above deductible amounts, along with no restrictions on how medical savings account funds can be spent on medical services, attenuates the cost containment incentives that some advocates have stressed. Withdrawals for nonmedical expenses are subject to income tax and a 15 percent penalty until the account holder reaches age 65. After 65, balances withdrawn for nonmedical expenses are subject to income tax but no penalty. Upon death, a medical savings account balance can be passed on to a surviving spouse with federal tax liability; otherwise it is included in the gross income of the beneficiary or taken into account for determining the federal estate tax.

**Cross-sectional backup insurance.** Limits were placed on the parameters of the required backup insurance policy to protect low-income workers from potential financial liability that would exceed their ability to pay. The backup insurance policy must have an annual deductible between $1,500 and $2,250 for individual coverage and between $3,000 and $4,500 for family coverage. In addition, the maximum amount households might have to pay in a given year—from their own funds or the medical savings account—is $3,000 for individual coverage and $5,500 for family coverage. (All these amounts apply in 1997 and thereafter rise with inflation through 2000.) To put these spending limits in perspective, in 1996 median household income in the United States was $35,082. Thus the family deductible and out-of-pocket maximums were set to be no more than 12–16 percent of median household income.

A Congressional agency, the General Accounting Office, is charged with evaluating the medical savings account experiment. The emphasis is, first, on what types of people and firms create them—to evaluate the selection issue. Second, to determine how much health expenditures...
change as a result of switching to a medical savings account—to evaluate their effectiveness as cost containment devices. And third, what (if any) effect the new arrangements have on local comprehensive insurance markets. Congress is to receive the report by 1 January 1999 and must decide by 1 January 2000 whether to expand, contract, or terminate tax-preferred medical savings accounts in conjunction with catastrophic insurance products.

Medical savings accounts for the elderly

The Balanced Budget Act of 1997 ushered in a similar medical savings account experiment for the main publicly funded health care program for the elderly, Medicare. The experiment will start in 1999. Like the program for the under-65 working population, a high-deductible insurance policy must accompany the medical savings account. Unlike the program for workers, the Medicare medical savings account requires neither a minimum deductible nor a required out-of-pocket maximum. There is, however, a maximum deductible of $6,000.

The mechanism envisioned is to use public funds to give Medicare beneficiaries a voucher roughly equal to the average spending of that type of person (adjusted for age, gender, and health status) in the traditional, comprehensive, fee-for-service Medicare program. With that voucher, beneficiaries could buy whatever high-deductible policy they want in the private market. The difference between the premium for that policy and the voucher amount would then be deposited in the beneficiary’s medical savings account. Accumulated balances that exceed 60 percent of the deductible could be withdrawn without penalty but would be subject to income tax. Medical savings account balances are assets that can be bequeathed upon death. The experiment will allow up to 390,000 Medicare beneficiaries—about 1 percent of all enrollees—to set up medical savings accounts, and it too will be evaluated before expansion or termination in 2002.

Dynamic prospects. Two questions are particularly relevant to the dynamic effects of medical savings accounts: what is the expected medical savings account savings rate, and how would widespread adoption of medical savings accounts change the health financing structure in the United States? Not enough data have been gathered from the medical savings account experiment to estimate the savings rate definitively. Eichner, McClellan, and Wise (1996) simulated a combined medical savings account and high-deductible insurance policy assuming a $2,000 annual contribution to the account. They found that 80 percent of workers would accrue an account balance at age 65 at least half as large as the sum of their annual contributions to it, and that only 5 percent would have less than 20 percent of their contributions.

These results may not be directly relevant to the U.S. medical savings account experiment, for two reasons. First, others modeling the legislation precisely (where employers or workers, but not both, may contribute) have estimated that the average employer’s contribution would be closer to $250–600 (American Academy of Actuaries 1995; Nichols,
Moon, and Wall 1996). This smaller balance is much more likely to be exhausted by annual withdrawals for out-of-pocket health care costs.

Second, no analysts have focused on how strongly the tax shelter motivation animates high-income medical savings account holders who are self-employed or who own or are employed by small firms. Since medical savings account contributions are tax-free up to the deductible and since interest earned on account balances is tax-free until it is withdrawn, high-income individuals may find it advantageous to contribute to medical savings accounts. Thus these accounts would be used as nonmedical savings funds, like another individual retirement account (IRA), to accumulate funds for old age by deferring high tax rates during one's working life and paying taxes only after retirement, when income and income tax rates fall. This motivation would tend to increase the average annual savings rate of medical savings accounts.

There are many more workers in the former situation (of small-employer contributions to medical savings accounts) than there are high-wage workers who might contribute the maximum allowed each year. But it is hard to know a priori whether the number of people who open medical savings accounts will be proportional to their representation in the workforce or general population. To the degree that most medical savings account holders are low- and medium-wage workers, the medical savings account savings rate would be well below that observed in Singapore. To the degree that most medical savings account holders are high-wage or self-employed workers, the U.S. savings rate could be high. Since this is most likely to be the case if the number of medical savings account holders remains small, the aggregate savings effect would be small.

If they become widespread, medical savings accounts will most likely substitute out-of-pocket payments for private insurance. The first-order effect would be to reduce private insurance and increase out-of-pocket spending, as deductibles would be higher than they are now. A more indirect effect is that premiums for the unhealthy, who may prefer to remain in comprehensive plans, could increase substantially. The remaining cross-sectional risk pool could be considerably worsened once healthy medical savings account holders are removed from it (Nichols, Moon, and Wall 1996). On balance, private insurance payments would likely fall and out-of-pocket payments likely increase, for one predictable response to higher comprehensive premiums will be to reduce the generosity of those plans. The larger point is that medical savings accounts are likely to shift private health financing moneys around but are unlikely to change the distribution of public and private health spending very much.

Since medical savings accounts could become (and in cases are being marketed as) more of a tax-preferred savings vehicle than a health financing instrument, estimating their ultimate effects in the United States is complicated. Especially if contribution limits are relaxed or removed after 2000, many more dollars than would have ever been spent on health care may flow into the accounts to escape current-year income taxation. These funds could be invested and earn income as stock mutual funds, with a penalty (until age 65) for withdrawals for nonmedical purposes. Since the average person contributing two-thirds to three-quar-

### Table 4

**Sources of health financing in the United States, 1960–95**  
(per cent)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector</td>
<td>22</td>
<td>35</td>
<td>40</td>
<td>39</td>
<td>40</td>
<td>42</td>
<td>44</td>
<td>45</td>
</tr>
<tr>
<td>Medicare</td>
<td>--</td>
<td>11</td>
<td>17</td>
<td>19</td>
<td>18</td>
<td>18</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Medicaid</td>
<td>--</td>
<td>8</td>
<td>11</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Other</td>
<td>22</td>
<td>16</td>
<td>12</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Private sector</td>
<td>78</td>
<td>65</td>
<td>60</td>
<td>61</td>
<td>60</td>
<td>59</td>
<td>56</td>
<td>55</td>
</tr>
<tr>
<td>Out-of-pocket</td>
<td>55</td>
<td>39</td>
<td>28</td>
<td>27</td>
<td>24</td>
<td>22</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Private insurance</td>
<td>21</td>
<td>23</td>
<td>29</td>
<td>30</td>
<td>33</td>
<td>33</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Other private funds</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Health Care Financing Administration data.
ters of a deductible each year is likely to accumulate considerably more than the deductible fairly quickly, there would be a potentially large fund to purchase medical services and devices tax-free. This could easily lead to higher total health care spending than would otherwise have occurred (Pauly 1994). But again, this would be recorded as higher out-of-pocket spending, not private health insurance or public health spending, even though the tax expenditure would be largely responsible for the effect.

Efficiency

Many observers, especially medical savings account advocates, believe that the growth in U.S. health spending is related to the decline in household out-of-pocket spending for health care services. The "culprits" in this story are, first, the increasingly comprehensive private insurance plans encouraged by the tax breaks for employer-sponsored insurance (employer contributions for employee health insurance are not taxable as employee income) and, second, the rise of overly generous public insurance programs. If these are the problems, the solution is obvious: all insurance plans, private and public, should be made less comprehensive. By making people pay more out of their own pocket, the theory goes, market forces would start to check spending growth.

The most economically efficient way to achieve this goal would be to force the insured population to switch to high-deductible plans. But aside from the fact that mandates are rarely tolerated in the United States, high-deductible policies have never been effective competitors of comprehensive plans, partly because tax breaks extend only to employer premium payments. Since World War II there have been tax advantages to having a comprehensive insurance policy with high premiums and low out-of-pocket obligations relative to having a high-deductible policy with lower (tax-exempt) premiums but higher out-of-pocket risk. By making contributions to and disbursements from medical savings accounts tax-exempt, the new law for the nonelderly helps level the playing field between these two alternative insurance arrangements, for the first time leaving risk-neutral individuals theoretically indifferent between them. This is an example of typically modest U.S. social policy: providing the same tax incentives for all health financing instruments and letting citizens, through the marketplace, decide.

Most health economists and policy analysts do not believe that medical savings accounts will substantially lower health care costs in the United States in the long run, for four reasons. First, and most important, the advance of effective and desirable medical technology is a more plausible explanation for rapidly rising costs than is lower cost sharing (Newhouse 1992). The United States has had faster cost growth than most OECD countries, all of which have much lower out-of-pocket obligations for patients.

Second, evidence on the response of patients to higher cost-sharing obligations supports the inference that the elasticity of demand for the services that account for most health spending among U.S. workers—hospital inpatient services—is very low. The elasticity for inpatient services is less than half that for many ambulatory services, which is also less than unity (Newhouse and the Insurance Experiment Group 1993; Manning 1987). Moreover, tax-preferred medical savings accounts attenuate the incentives of high-deductible health insurance policies by providing a readily available source for first dollar coverage—precisely the problem with comprehensive insurance from the efficiency perspective in the first place.

Third, the cost-reducing effect that would follow from the widespread adoption of medical savings accounts would more likely be a one-time shift than an ongoing reduction in the underlying rate of technology-driven growth (Nichols, Moon, and Wall 1996; Ozanne 1996).

Fourth, medical savings accounts may prove no more popular in the U.S. context of a comprehensive insurance norm and rising managed care than purely high-deductible insurance policies have been. While the experiment was launched with great public fanfare, by April 1997 only 9,000 medical savings accounts had been established.

Even if they become a major part of the U.S. health care financing universe, for the most part medical savings accounts simply transfer spending from one private source (insurance) to another private source (out-of-pocket payments). Thus by themselves they will not alter the fundamental dynamic at work in the United States for the past 40 years, the substitution of public for private funds. That dynamic would be reversed only by political decisions to reduce subsidies for the elderly and the poor.
Equity

Unlike in Singapore, the design of medical savings accounts in the United States does not explicitly link them to any pro-poor elements of the overall health financing framework. There are no supply-side subsidies aimed at discriminating the price structure confronting withdrawals from medical savings accounts. Nor are there demand-side subsidies such as progressive matching grants from government into accounts held by the poor. Indeed, given the nonuniversal nature of the medical savings account experiment, there is little reason to expect the poor to enroll anyway. Indeed, enrollees are more likely to be well-off professionals seeking additional tax shelters for their savings. It should be borne in mind, however, that the U.S. Medicaid program serves as a (incomplete) safety net to catch some of the poor, and most hospitals provide free acute care to the uninsured.

To the extent that medical savings accounts become important in the United States, they would reduce the cross-sectional risk-pooling nature of the health financing system and provide the potential for adding a considerable intertemporal dimension. But regardless of whether substantial medical savings account balances were accumulated by households for future health care use, the primary effect would be to increase the correlation between health status and household payment. This would be true for those who open medical savings accounts, and especially for those who remain in comprehensive plans whose premiums rise after the healthy set up medical savings accounts. There is a sense in which this development is economically efficient, and it fits some U.S. definitions of equity—for example, people should pay for their own care. But another concept of equity, based on the view that many health conditions are randomly distributed, is violated by the reduction in cross-subsidies of the sick by the healthy. The policy debate about medical savings accounts in the U.S. context has focused much more on these selection and equity effects than on the technicalities of cost control elasticities.

Conclusion

The policy objectives motivating the implementation of medical savings accounts in Singapore and the United States were quite different. Singapore anticipated the growing problem of intergenerational transfers from young savers to elderly consumers, and sought to shift those pressures away from the pay as you go tax-financed instrument in its health care system. The force driving Singapore's medical savings accounts was the desire to mobilize nonbudgetary resources to help finance medical care for the elderly. In contrast, the political economy of medical savings accounts in the United States has been forged by the paramount need to contain costs. Little attention has been paid to the potential role of medical savings accounts in accumulating funds to pay for medical care for the elderly. Given the different underlying policy objectives, it is hardly surprising that the blueprints for the two country's systems do not resemble each other in any respect other than merging the intertemporal risk-pooling approach with cross-sectional backup insurance.

To start with, the Singapore model is essentially compulsory and universal; the U.S. approach is voluntary and segmented. Singapore's design parameters are set to generate a high savings rate during the working part of the life cycle, in order to finance dissavings for medical care in old age. The U.S. parameters will likely produce a low savings rate, and do not require savings at retirement to be reserved for subsequent medical expenses. The U.S. model would be more accurately described as medical spending accounts or nonmedical savings accounts. Ironically, the recent U.S. effort to introduce medical savings account vouchers into Medicare is financed by the same intergenerational tax transfer that pays for Medicare in the first place.

Recognizing that the price reforms necessitated by medical savings accounts posed equity risks, Singapore linked the accounts to a strongly pro-poor price discrimination strategy in the public hospitals that serve most patients. While medical savings accounts help absorb the growing pressure on public subsidies, the remaining subsidies are targeted where they are needed most. In contrast, the U.S. approach to medical savings accounts does not incorporate any features favoring equitable access to medical care.

The most obvious lesson for other countries is that the design of medical savings accounts depends on which policy objective matters. Clarifying a country's objectives and understanding the objectives underlying approaches in other countries would seem to be a prerequisite to developing such systems. With these qualifications in mind, it seems
likely that fewer countries will have much to learn from the U.S. experiments, while many might learn from Singapore's experience. Among industrial countries, the magnitude of the U.S. cost containment problem and its corresponding obsession with efficiency incentives put the country in a league of its own. Among developing countries the paramount health policy issue is not containing costs. Rather, it is mobilizing nonbudgetary resources to pay for the inevitable increase in costs while simultaneously preserving equity (Prescott 1997).

Notes

1. \( T(x) \) and \( HH(x) \) are drawn with the commonly observed, approximately log normal shape for health expenditure density functions.

2. For example, designer eyeglasses, cosmetic surgery, and dental and mental health services could be covered by medical savings accounts but usually are not covered by U.S. health plans.

3. The estimates of average balances may have been inflated by the assumption that if a worker's medical savings account balance ever reached zero, the insurance policy would cover 100 percent of medical expenses. It is unlikely that insurance policies sold in the U.S. market would be so generous.

References


CHOICES IN FINANCING HEALTH CARE AND OLD AGE SECURITY 32
Financing Health Care in Old Age: A Case Study of Singapore

Kai Hong Phua and Yap Mui Teng

In planning for the health care needs of a population, demographic variables that interact with social, economic, and cultural factors must be taken into account (WHO 1982). Shifts in basic demographic characteristics—such as a population's age distribution, sex composition, family formation, and life expectancy—have sizable effects on a country’s economy and social structure. Some of these effects are increasingly being felt in countries whose populations are aging rapidly, and the implications are immense for social and support services—among them, health care, housing, welfare, and income security.

The pace of social and economic transformation can also exacerbate the problems of the elderly, especially sick or destitute people who lack family support. Rapid urbanization, housing development and resettlement, industrialization, and labor force participation (especially of women) also may weaken the extended family structure, a traditional support system for the elderly. A shift away from care provided in the home and community leads to growing demand elsewhere, and strains public services and available resources. Thus financing care for the elderly—particularly the increasing costs of their health care—is a crucial issue in newly industrializing economies such as Singapore, where the demographic transition will be rapid.

Population Aging and National Health Expenditure

As did many other countries, Singapore experienced an extended baby boom just after World War II. The aging of these baby boomers, together with rapid declines in fertility and increases in longevity since the 1960s, means that Singapore’s elderly population will balloon in the early part of the next century—in both absolute and relative terms (table 1).

An aging population's effect on health services

The ratio of the elderly to the working-age population (that is, the old dependency ratio) is set to increase dramatically. This shift will likely have significant consequences on the demand for and provision of health services, because the incidence and severity of diseases and disabilities increase with age. In 1995, for example, people 65 and over accounted for just 7 percent of Singapore’s population but for 17 percent of hospital admissions and 19 percent of outpatient polyclinic visits (Wong 1997). Their average hospital stay was 11.3 days, compared with an average for the overall population of about 5 days. This expected rise in demand for health care is intensified by both the increasing proportion of the elderly and by the aging of the older population—that is, the growing number of older people who are living longer. Such demographic and epidemiological demand factors will exert economic pressures that are likely to be aggravated by supply factors such as the introduction of life-sustaining but costly medical technologies.

Trends in the sex ratio, marital status, and family formation have a bearing on the care for the elderly at home. Because women generally outlive men, and mortality rates are falling faster among women than men, the elderly...
population is becoming increasingly female. In Singapore’s 1990 census the age-specific sex ratio fell from 97 men per 100 women in the 60–69 age group to 80 per 100 in the 70–79 age group and 60 per 100 in the 80 and over age group (Shantakumar 1994). As a result the health conditions of the elderly are increasingly reflected in the conditions and needs of older women. Because women are likely to use health services more often than men, the differential demand will be increasingly pronounced with the changing sex ratio.

By itself a declining sex ratio does not necessarily lead to greater demand for social services. The family structure and marital status of those affected also matter. With declining fertility and family sizes, there will be more elderly with fewer family members to care for them. Moreover, women are more likely than men to be widowed: in 1990, for example, 54 percent of elderly women were widowed compared with 19 percent of elderly men. Because the common pattern is for older men to be cared for by a younger spouse or female family member, this pattern does not pose more problems for the care of elderly men than of elderly women. Earlier deaths of men, usually husbands and fathers who are bread-winners, would typically result in widowhood, as well as more one-parent (maternal) and one-person (female) households. Such households are usually associated with reduced income, increased poverty, and enhanced risks of ill health for the survivors (Siegel and Hoover 1982). Population shifts due to housing and employment patterns can exacerbate the situation when a large portion of the elderly already require increasing external assistance for their well-being (Ministry of Health 1984).

### TABLE 1

**Singapore’s current and projected population, by age group**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>1994</th>
<th>2000</th>
<th>2015</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number (thousands)</td>
<td>2,930</td>
<td>3,259</td>
<td>3,764</td>
<td>3,940</td>
</tr>
<tr>
<td>Share (percent)</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number (thousands)</td>
<td>675</td>
<td>743</td>
<td>715</td>
<td>686</td>
</tr>
<tr>
<td>Share (percent)</td>
<td>23.0</td>
<td>22.8</td>
<td>19.0</td>
<td>17.4</td>
</tr>
<tr>
<td>15–64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number (thousands)</td>
<td>2,061</td>
<td>2,284</td>
<td>2,635</td>
<td>2,459</td>
</tr>
<tr>
<td>Share (percent)</td>
<td>70.4</td>
<td>70.1</td>
<td>70.0</td>
<td>62.4</td>
</tr>
<tr>
<td>65+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number (thousands)</td>
<td>194</td>
<td>233</td>
<td>414</td>
<td>794</td>
</tr>
<tr>
<td>Share (percent)</td>
<td>6.6</td>
<td>7.1</td>
<td>11.0</td>
<td>20.1</td>
</tr>
<tr>
<td>Dependency ratios</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Young</td>
<td>32.7</td>
<td>32.5</td>
<td>27.1</td>
<td>28.0</td>
</tr>
<tr>
<td>Old</td>
<td>9.4</td>
<td>10.2</td>
<td>15.7</td>
<td>32.3</td>
</tr>
<tr>
<td>Working-age persons per elderly</td>
<td>10.6</td>
<td>9.8</td>
<td>6.4</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Note: Based on the median fertility model, in which the total fertility rate remains at 1.85 children per woman throughout the projection period, life expectancy at birth is 73.8 years for men and 78.2 years for women, and net migration is 22,000 a year until 2005, after which it is 0. Source: Ministry of Health, Population Planning Section.

### TABLE 2

**Singapore’s current and projected national health expenditure**

<table>
<thead>
<tr>
<th></th>
<th>1994</th>
<th>2000</th>
<th>2015</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP (billions of U.S. dollars)</td>
<td>105.3</td>
<td>155.8</td>
<td>357.9</td>
<td>744.0</td>
</tr>
<tr>
<td>Real national health expenditure (billions of Singapore dollars)</td>
<td>2.84</td>
<td>4.38</td>
<td>12.78</td>
<td>30.65</td>
</tr>
<tr>
<td>Demographic</td>
<td>0.00</td>
<td>0.12</td>
<td>0.92</td>
<td>1.50</td>
</tr>
<tr>
<td>Income</td>
<td>0.00</td>
<td>1.42</td>
<td>9.02</td>
<td>26.31</td>
</tr>
<tr>
<td>Real national health expenditure/GDP (percent)</td>
<td>2.7</td>
<td>2.8</td>
<td>3.6</td>
<td>4.1</td>
</tr>
<tr>
<td>Price indexes (1994 = 1.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>1.00</td>
<td>1.24</td>
<td>2.15</td>
<td>3.70</td>
</tr>
<tr>
<td>National health expenditure</td>
<td>1.00</td>
<td>1.37</td>
<td>3.00</td>
<td>6.58</td>
</tr>
<tr>
<td>Nominal GDP (billions of Singapore dollars)</td>
<td>105.3</td>
<td>193.8</td>
<td>768.0</td>
<td>2,754.5</td>
</tr>
<tr>
<td>Nominal national health expenditure (billions of Singapore dollars)</td>
<td>2.84</td>
<td>5.99</td>
<td>38.38</td>
<td>201.75</td>
</tr>
<tr>
<td>Nominal national health expenditure/GDP (percent)</td>
<td>2.7</td>
<td>3.1</td>
<td>5.0</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Note: Based on the median fertility model, in which the total fertility rate remains at 1.85 children per woman throughout the projection period, life expectancy at birth is 73.8 years for men and 78.2 years for women, and net migration is 22,000 a year until 2005, after which it is 0. Real GDP growth is projected to decline by 0.5 percentage point over successive five-year periods, from 7.0 percent in 1995–2000 to 5.5 percent in 2011–2015, and thereafter remaining at 5 percent. Real GDP and national health expenditure are measured in constant 1994 prices. Income elasticity equals 1.0. GDP deflator increases at 3.70 percent (the average for 1989–93); Medical services deflator increases at 5.37 percent (the average for 1989–93). Source: Low and others 1996.
TABLE 3
Singapore's project national health expenditure in 2030 under three demographic scenarios

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Low fertility (total fertility rate = 1.7)</th>
<th>Median fertility (total fertility rate = 1.85)</th>
<th>High fertility (total fertility rate = 2.1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (millions)</td>
<td>3,775.5</td>
<td>3,940.1</td>
<td>4,148.3</td>
</tr>
<tr>
<td>Population 65+ (percent)</td>
<td>21.0</td>
<td>20.1</td>
<td>19.1</td>
</tr>
<tr>
<td>Real national health expenditure (billions of Singapore dollars)</td>
<td>29.8</td>
<td>30.6</td>
<td>31.7</td>
</tr>
<tr>
<td>Real national health expenditure/GDP (percent)</td>
<td>4.01</td>
<td>4.12</td>
<td>4.26</td>
</tr>
<tr>
<td>Nominal national health expenditure/GDP (percent)</td>
<td>7.12</td>
<td>7.32</td>
<td>7.58</td>
</tr>
</tbody>
</table>

Note: Except for total fertility rates, all assumptions are the same as in table 2.
Source: Low and others 1996.

TABLE 4
Singapore's current and projected national health expenditure using income elasticities of 1.2 and 1.5

<table>
<thead>
<tr>
<th>Income elasticity of 1.2</th>
<th>1994</th>
<th>2000</th>
<th>2015</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real national health expenditure</td>
<td>2.84</td>
<td>5.25</td>
<td>15.34</td>
<td>36.78</td>
</tr>
<tr>
<td>Nominal national health expenditure</td>
<td>2.84</td>
<td>7.19</td>
<td>46.06</td>
<td>242.10</td>
</tr>
<tr>
<td>Nominal national health expenditure/GDP</td>
<td>2.7</td>
<td>3.7</td>
<td>6.0</td>
<td>8.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income elasticity of 1.5</th>
<th>1994</th>
<th>2000</th>
<th>2015</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real national health expenditure</td>
<td>2.84</td>
<td>6.57</td>
<td>19.18</td>
<td>45.97</td>
</tr>
<tr>
<td>Nominal national health expenditure</td>
<td>2.84</td>
<td>8.99</td>
<td>57.57</td>
<td>302.63</td>
</tr>
<tr>
<td>Nominal national health expenditure/GDP</td>
<td>2.7</td>
<td>4.6</td>
<td>7.5</td>
<td>11.0</td>
</tr>
</tbody>
</table>

Note: Except for income elasticities, all assumptions are the same as in table 2.
Source: Low and others 1996.

Changes in national health expenditure

A study projecting national health expenditure from 1994 to 2030 shows that real spending will grow more than tenfold over this period, from S$ 2.84 billion to S$ 30.65 billion (table 2). Much of this increase is due to the projected growth in income. Excluding the income effect, the shift in demographic characteristics will raise national health expenditure by S$ 1.5 billion, from S$ 2.84 billion to S$ 4.34 over the same period. The nominal national health expenditure, on the other hand, will grow by more than 70 times, from S$ 2.84 billion to S$ 201.75 billion. As a percentage of nominal GDP, nominal national health expenditure will rise from 2.7 percent in 1994 to 7.3 percent in 2030.

Abstracting from the effect of higher income, table 3 summarizes the effect on real health expenditure under three demographic scenarios for 2030. As would be expected, Singapore's population will age fastest under the low-fertility model, although the population in 2030 will also be the smallest. In comparison, the youngest population occurs under the high-fertility model, but the total population is higher.

These findings are based on an assumption of unitary income elasticity for national health expenditure. The results based on income elasticities of 1.2 and 1.5 are presented in table 4. By 2030, based on an income elasticity of 1.5, national health expenditure will rise to 11.0 percent of GDP. Using a more moderate income elasticity of 1.2, national health expenditure will absorb 8.8 percent of GDP in 2030.

It is apparent from table 3 that population size has a stronger effect on national health expenditure than the age structure of population. National health expenditure in 2030 is largest under the high-fertility model and smallest under the low-fertility model, which has the smallest but oldest population. This could be due to the fact that while the elderly are more likely to be admitted to hospitals, and to stay longer once admitted, the average cost per patient-day of hospitalization is lower for older than for younger populations. Inpatient hospitalization costs account for the largest share of national health expenditure, and rise from about 50 percent in 1994 to 61 percent in 2030 under the median fertility model.
Saving for Health Care

Meeting the rising costs of health care and hospitalization will be a major challenge for Singapore. Innovative ways of providing cost-effective health care for a growing elderly population are needed, as are more sustainable methods of financing care within an old age security system.

In the late 1970s it was proposed that the scope of the Central Provident Fund—Singapore’s government-run, compulsory social security system—be broadened to cover areas that would be consistent with the social objective of providing old age security (Chew 1997). One of the areas identified by policymakers was health care coverage, especially to protect the elderly against the high costs of hospitalization. Traditional health care financing—through taxes or out-of-pocket payments—was inadequate to pay for quality health care. As a result prior savings had to be enforced to meet the anticipated rising costs of medical care.

These considerations formed the basis for the National Health Plan formulated in 1983. The plan’s key proposal, the Medisave scheme, attempted to impose compulsory savings and to restructure the system of medical care financing. The plan’s main objectives are to secure a healthy, fit, and productive population through active preventive care and promotion of healthy lifestyles, and to make health services more cost-efficient. In addition to promoting individual responsibility for maintaining good health, the plan aims for members to build up financial resources to create the means to pay for medical care during illness, especially in old age (Ministry of Health 1983).

Medisave can be used to pay the hospital expenses of immediate family members. This fits in with the concept that the basic social and economic unit of any society should be the family, with care for the welfare of ill and aged members to remain first and foremost a family responsibility. The aim is to preserve certain desirable values, such as filial piety, that could enhance the stability of an essential societal structure amid rapid change. But where families are genuinely unable to share in the medical expenses of their sick and elderly members, the state can step in to subsidize costs from public taxes (Phua 1986).

The 1995 national survey of senior citizens in Singapore found that Medisave is the most important mechanism for those age 55 and above to finance their health care. More than half (55 percent) of senior citizens depended on their children’s Medisave to pay for their medical expenses, while 18 percent depended on their own Medisave and 2 percent on their spouse’s Medisave. Thus Medisave funds accounted for 75 percent of the health care financing of those 55 and above. More women (65 percent) than men (44 percent) depended on their children’s Medisave.

With men likely to have accumulated more Medisave funds over their working life, the proportion of men depending on their own Medisave to finance their health care (30 percent) was higher than that of women (7 percent). However, 8 percent of senior citizens had not made any financial provisions for health care. Nearly 42 percent of this group indicated that they were not able to accumulate Medisave or personal savings because of unemployment or low income, and a similar portion had not done so because they felt that they could rely on their children to pay their medical bills if required.

The Medisave Scheme

Compulsory savings for medical care are set aside by transferring 6–8 percent of earnings (depending on the age group) into a personal Medisave account as part of monthly Central Provident Fund contributions (which consist of 40 percent of salaries—20 percent contributed by employees and 20 percent by employers). Thus the Medisave account represents a 3–4 percent contribution by employees, matched by employers. A ceiling on the monthly Medisave contribution is linked to the Central Provident Fund salary ceiling of S$ 6000. The earmarked Medisave account accumulates interest at the prevailing Central Provident Fund rate, which is pegged to the average half-yearly rates of domestic banks.

Coverage

Funds in the Medisave account can only be withdrawn to pay for hospital charges and surgical operations, including day surgery and certain outpatient procedures that are costly but do not require hospitalization. Medisave covers up to S$ 300 a day for hospital charges and a fixed limit for surgical operations according to a fee schedule that ranges from S$ 150–5,000. Medisave is not intended to cover catastrophic and long-term chronic illnesses, for which there is a separate catastrophic illness insurance scheme.
Medishield). Moreover, other modes of care provided through subsidized government programs and voluntary and charitable bodies continue to play a major role.

Family responsibility

Medisave can be used to pay the hospital expenses of immediate family members, defined as spouses, children, parents, grandparents, and, where justifiable, dependent siblings. Thus the family shares a responsibility for looking after the welfare of its members, and it is hoped that Medisave will provide a financial incentive for families to stay fit and well, and avoid incurring hospital expenses.

Minimum balance

If the Medisave account is not used, it is allowed to accumulate until the account holder reaches withdrawal age (currently 55). Whereas most of the savings from the Central Provident Fund can be withdrawn at this age, a minimum balance must be retained in the Medisave account to cover future hospitalization. The minimum balance was increased by S$ 500 a year (from a base of S$ 5,000) from 1984 to 1995. Since 1995 the ceiling has been increased by S$ 1,000 a year, and will continue to be raised until it reaches S$ 20,000. According to the 1983 National Health Plan, the minimum balance is calculated to cover the expected hospitalization expenses of a typical three-generation family in Singapore, based on prevailing hospital charges at subsidized rates (Ministry of Health 1983). If an account holder dies, any balance in the Medisave account—such as remaining Central Provident Fund savings—can be paid out to specified nominees or distributed to the beneficiaries of the deceased. Such bequests are free from estate duty.

Financial assistance

Medisave accounts that are overdrawn are generally allowed to go into debit, and can be settled either by cash reimbursement or by subsequent contributions. Installment payments are levied at the prevailing Central Provident Fund interest rate. This applies to lower-priced ward classes, which are mainly used by low-income citizens. Essential medical treatment is not denied if Medisave funds are inadequate or there is financial hardship. Moreover, charges can be waived by the Medifund for the indigent, subject to approval based on a means test.

Medishield and Medifund

Once Medisave was implemented in 1984, experience showed that there was still a need for additional coverage of major or chronic illnesses requiring expensive or prolonged treatment. Serious consideration of some form of a catastrophic illness insurance scheme took place from 1985 onward. The Ministry of Health, working with the Central Provident Fund Board, developed this scheme with inputs from the private insurance industry. A cautious approach was taken because of the long-term implications, especially with the potential for abuse and inflated costs. A comprehensive national health insurance scheme was rejected in favor of a more basic catastrophic illness insurance scheme, to avoid the "buffet syndrome" of excess consumption.

Medishield

While Medisave is adequate for the hospitalization needs of the average Singaporean, it might not provide adequate protection against expensive or long-term treatment associated with chronic or catastrophic illnesses. Thus a low-cost national catastrophic illness insurance scheme, known as Medishield, was introduced on 1 July 1990. To avoid problems associated with prepaid insurance, there is a system of deductibles and coinsurance. All Central Provident Fund members who are Singapore citizens or permanent residents are automatically covered unless they opt out of the scheme. Participation of Central Provident Fund members' immediate dependents is voluntary. Non-fund members may opt into the scheme by contributing toward Medisave.

Central Provident Fund members and their dependents are insured up to age 75. To encourage as many Singaporeans as possible to participate in the scheme, premiums are kept low. The premiums vary by age group to minimize cross-subsidies. Annual premiums range from S$ 12 for those under 30 to S$ 96 for those between 60 and 65, S$ 132 for those between 65 and 70, and S$ 204–240 for those between 71 and 75. Premiums can be paid from Medisave funds.
Reimbursement is on actual expenses incurred up to a limit under the plan, less the initial deductible of S$500–1,000, which is borne by the insured. There is also coinsurance of 20 percent, as well as a claims limit within a policy year and per lifetime. Medisave funds can be used to pay the deductibles and coinsurance. The deductibles are deliberately kept high to avoid excess demand for medical services. The deductibles were pegged at the level where only 5 percent of all hospitalizations in a year would be eligible for Medishield claims.

Medifund

Despite the widespread coverage of Medisave and Medishield, a small number of needy Singaporeans still lack adequate savings or family support. This group includes older cohorts of low-income individuals (often without families) who have insufficient or no Central Provident Fund accounts. The idea of setting up a large endowment fund to help fill this financial gap was broached in 1991, and parliamentary approval was granted in 1992. According to the Medical Endowment Act, the government will deposit grants in special accounts for public hospitals to defray part or all of the bills incurred by eligible patients in need. Medifund was given startup capital of S$200 million, which is increased by S$100 million every year from budgetary surplus. A Medifund Advisory Council was formed to advise on the use of the income derived from the endowment. Each hospital appointed a Medifund committee to approve payments based on the guidelines provided by the Medifund Advisory Council. Since 1 April 1993, needy patients have been able to apply for partial or full waivers of their medical fees through medical social workers. Prior to this, waivers and subsidies had to be absorbed by individual hospitals through government subventions, obtained from general tax revenues. Thus Medifund further relieves the dependence on taxes as a means of health care financing.

Policy Issues and Implications

The socioeconomic implications of a rapidly aging population can be significant. Governments are strained to finance ever-increasing public spending from a shrinking tax base. Facing demands from an increasingly vocal and aging electorate, many governments have found it unpopular to cut back on existing social programs. This situation is compounded by poor economic conditions, unemployment, and mounting public expenditures, which add to the crisis of financing social security schemes supported by a declining number of contributors. Some countries have resorted to cost containment measures and are reexamining systems for financing social programs, especially health care. Countries with indirect health care financing through social insurance or taxation have removed many restraints on individual demand, and thus ration services by intervening mainly on the supply side.

In the past Singapore sought to balance the health sector by making clear plans for staffing and facilities on the supply side, and by mobilizing individual savings through the Medisave scheme on the demand side. Thus demand has been rationed implicitly through consumer purchasing power in the market. Such policies have been necessary to avoid problems in maintaining a balance between demand pressures and supply capacity. The situation is even more acute for a small population like Singapore’s, where rising expectations for higher-quality services have surfaced with growing affluence (Phua 1987b).

In anticipation of the future demands and needs created by demographic trends in Singapore, the Committee on the Problems of the Aged (chaired by the minister of health) was convened in 1983 to recommend measures to prevent, ameliorate, or deal with such problems. Among the recommendations in the committee’s report, released in 1984, was a national policy for the elderly covering employment, financial security, health and recreational needs, social services and institutional care, and family relations (Ministry of Health 1984). This was followed by the 1989 report of the Advisory Council on the Aged, which recommended the development of community-based programs for maintenance of good health, prevention of disease, and rehabilitative and social support for the elderly.

Concomitant with this were related developments such as the implementation of the National Health Plan and the Medisave scheme. These reflected an integrated and consistent policy of ensuring that Central Provident Fund savings would form the backbone for viable long-term financing of increasingly expensive health care for the elderly. This was further strengthened by introducing Medishield as a
backup catastrophic illness program and Medifund for the indigent.

Singapore has enjoyed lower growth in health care spending relative to GNP than many other countries. There is a general belief that the system of cost sharing and medical savings has contributed to more effective health care spending by reducing wasteful and unnecessary consumption. In essence, Medisave serves as an additional source of personal financing for medical expenditures borne by families. With this shift in public cost sharing, government tax revenue is freed to meet other priorities and to contribute to better targeting of subsidized health services. It is also hoped that Medisave, acting as a substantial health financing and payment scheme, controls effective demand through the price mechanism.

Payment and reimbursement

Under Medisave, most payment for health care is made at the point of consumption. It is intended that this nexus between payment and use reflects the real costs of health care and prevents excess use. Medisave also caters to consumer preferences for ward accommodations in public or private hospitals. Thus it can be used to provide complete coverage in lower-priced wards with basic essential services, or to subsidize more expensive hospital charges (if preferred) within certain limits.

Medisave reimbursements for private hospitalization are pegged to rates set by the more pervasive public hospital sector, which is subject to strong budgetary controls on the supply side. With the imposition of limits on daily charges and on the type of procedures performed, potential abuse of Medisave withdrawals is prevented. But with such price caps in place, do providers have any incentive to increase the volume or quality of services? There is also the question of whether the withdrawal limits need to be adjusted periodically to reflect rising costs, as otherwise the balance of charges would have to be borne from increasing out-of-pocket payments, which would hurt low-income groups. Similarly, withdrawal limits may need to be adjusted to take into account the different costs of medical care for the elderly. More fine-tuning and revisions could also be implemented to improve the reimbursement method as it evolves in the local situation, to avoid having “balance billing”—that is, extra charges additional to the rates set by Medisave—become a serious issue.

Financial burden

Unlike social insurance and tax-based financing, the savings approach will not place an unduly heavy burden on the decreasing number of young and productive workers, and will free public expenditure from the vagaries of economic cycles. The current generation of wage-earners is obliged to save for the future, instead of relying on the uncertain taxes of the next generation for future support. This is in line with official policy to promote financial independence among the aged, whose medical needs are expected to increase. But this also means that employees and employers will be squeezed hard to make Central Provident Fund contributions, on top of rising wage costs that will subtract from private incomes and profits. In addition, the present cohort of wage-earners could be doubly affected, since they not only have to save for their own old age but also have to provide for elderly dependents without substantial Central Provident Fund savings (Phua 1987a).

Catastrophic insurance

Support for extending catastrophic health insurance to meet the higher costs of upgraded hospital services appears to be growing. There are calls to increase coverage of the basic Medishield scheme, given the lukewarm response to private catastrophic insurance schemes that had earlier appeared to be proliferating in the market. This has been partly addressed by the introduction of optional Medishield Plus plans to cater to those using private hospitals or class A and B1 (private) wards in the public sector. These plans offer two tiers (plan A and plan B) on a voluntary opt-in basis.

Against the rising costs of medical care in Singapore, fears have also been expressed about the possible inflationary effects of expanded health care financing through insurance. Some outstanding matters that concern extension of health insurance are the issues of who is to be covered, what kind of coverage is to be provided, and how additional benefits and plans should be financed and administered within the framework of the Medisave and Medishield schemes.

FINANCING HEALTH CARE IN OLD AGE: A CASE STUDY OF SINGAPORE 39
Extension of Medishield

There is a strong case to extend the coverage of Medishield to those age 75 and above. Commercial insurance schemes would not find it profitable or viable to provide such coverage, given the increased risks of catastrophic illness among the elderly. But since cost-effectiveness is a major consideration in all public programs, the unlimited expansion of Medishield to cover all conditions would be financially imprudent.

On the other hand, desires for social justice and solidarity make it politically desirable to provide equal access to a national health insurance program, at least up to the average life expectancy, which is currently above 75. This has appeared to be a reasonable cutoff limit because most degenerative diseases occurring beyond this age are difficult to ameliorate and death becomes certain and predictable. Hence, rationing of care to the very old has become less unacceptable to society. But as more of the elderly survive to older ages, the policy issue is whether Medishield coverage should also be adjusted upward. Life expectancy at 60 is currently 20 years longer in Singapore, which probably provides an actuarially fair basis for the newly introduced National Trades Union Congress Incomeshield catastrophic health insurance plan, which provides coverage up to the age of 80.

Adverse selection

Medishield has been optional from the start. But despite the considerable publicity and educational efforts associated with its implementation, a large number of the elderly have opted out (Ministry of Trade and Industry 1996). Adverse selection of this nature has resulted in inadequate coverage of precisely the population groups with the greatest risks and needs. Even though premiums appear to be low, the elderly who have opted out must have perceived these as being substantial relative to their incomes.

It is unlikely that those who have opted out have comparable coverage in alternative plans. Even more alarming is the large number of younger people who have opted out of Medishield—despite having relatively low premiums that are risk-adjusted rather than community-rated. The high rate of opting out is not conducive to the insurance principle of pooling risk across population groups. Thus there are grounds for extending universal coverage to the entire population, although limited to the basic package for catastrophic illness insurance.

Moral hazard

It is debatable whether existing deductibles and copayments deter unnecessary use. Since catastrophic care is likely to be supplier-driven, checks and controls aimed at the supply side would be more appropriate because the moral hazard problem would likely be due to overzealous doctors trying to preserve life at all costs. Unlike the case for comprehensive insurance, the likelihood for abuse on the demand side is less for catastrophic illnesses because definitions and eligibility are more clear-cut. Clinical guidelines and treatment protocols for disease management and outcomes measurement need to be further developed and applied among health care providers.

Technology assessment

Another issue concerns the range of conditions and new medical technologies that are eligible for coverage. The current list of claimable limits and exclusions should continue to be updated and clearly defined. Excessive spending on hi-tech treatment and life support systems for unnecessary prolongation of life should be avoided. As the pressure to expand the list of conditions will always be present, new demands should be subjected to critical review by an independent expert panel, especially in the area of technology assessment.

Universal coverage

To be truly effective, the catastrophic insurance components in Medishield should be made universal and compulsory. This would mean that different modes of financing its premiums could be introduced in addition to payroll contributions to Medisave. To capture the rest of the population (besides the employed and self-employed), the financing of catastrophic illness insurance could be a combination of transfers and equitable contributions into Medisave accounts from other sources, as is the case for Medisave top-up.
schemes. Medishield should continue to be an earmarked plan linked to the Central Provident Fund. On balance, it would probably be cheaper if it continues to be government-run than provided by the private sector because the government has greater potential for controlling prices as a result of economies of scale and standardization. The private sector could still provide additional frills and up-market schemes, such as disability insurance and alternative types of care (including long-term care, home care, and managed care).

Whatever the method of financing, it will not diminish the need to improve delivery and use of health care for the elderly through efficient, equitable, and cost-effective means. The expanded use of health insurance would, in fact, emphasize the need for even greater vigilance in monitoring cost and quality, which should include stronger utilization review and medical auditing. Financial incentives and control measures should encourage doctors and patients to use health care at the most appropriate level and at a cost that the nation can afford.

Conclusion

Given projected demographic, epidemiological, social, and economic trends, existing tax-based health care financing schemes have to be adjusted to support the growing needs of the population. The Singapore model tries to avoid increasing the tax burden on the productive, including employers and employees, and does not subject social spending to the vagaries of economic cycles. Current generations of young wage-earners are mandated to save for their health care needs in old age instead of relying on the uncertain taxes of future generations. Through this multilayered health care financing system, combined with varying cost sharing and subsidies in a public-private mix of health services, it is hoped that the economy can absorb a growing elderly population and the attendant increasing burden of health care costs while providing a sustainable degree of social security (Phua, Seow, and Lee 1996).

Against the background of rapid economic growth and dramatic demographic and health transitions, concerns about health care and income security have surfaced with greater alarm in some other East Asian countries (United Nations 1991). More attention is being paid to social care, including living arrangements, family and community support, formal and informal care networks, and their relations with other welfare needs. Of particular interest is the status of elderly people in the societies undergoing rapid changes. There will be related social costs and policy implications for support systems, presenting new challenges to the development of innovative and cost-effective models (Phillips 1992).

The World Bank’s Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth sounded the alarm about the potential crisis facing old age security systems. As life expectancies increase and birth rates decline, the proportion of the old is expanding, threatening old age security systems supported by the young. In industrial countries escalating costs in public pension plans impede economic growth, and such formal systems appear to be both unsustainable and difficult to reform. In developing countries urbanization and increased mobility are eroding extended family networks and traditional means of support. The newly industrializing countries that are developing old age security systems risk repeating the costly mistakes of the more experienced economies. Thus the study recommends a mix of three “pillars” to support the basic functions of old age security systems—redistribution, savings, and insurance. The first is a mandatory publicly managed and tax-financed system; the second is a mandatory privately managed and fully funded savings system. Both are supplemented by a third voluntary system of occupational or personal saving plans. Together the three pillars co insure against risks of old age without impeding growth in aging societies (World Bank 1994).

Considering that health care needs are expected to be greater in old age, should not the same requirements be met for health care financing systems? The three basic functions of redistribution, savings, and insurance are just as applicable for financing health care as for old age security. Even though the relative risks and uncertainties may be different for health care needs, a similar mix of financing methods can still be recommended to offer more protection while promoting growth in countries with aging populations. These considerations have formed the basis for Singapore’s integrated systems of old age security and health care financing.

Innovative means of financing have to be explored to guarantee the cost-effectiveness of providing other essen-
tial services for the aged, straddling the full range of types and levels of health care (acute and chronic care, nursing home, residential, and home care, preventive, curative, and rehabilitative care, and so on). In the varied forms of care for the elderly, more economic checks and balances would inevitably be introduced in response to increasing expenditure because of the competition for scarce resources. Of particular relevance would be the introduction of acceptable methods of cost sharing or cost containment aimed at balancing supply and demand forces. A more discerning and educated elderly population would subject care providers to greater public expectations of professionalism and scrutiny of their practices. Rising pressures on the caring professions to provide more affordable services of good quality would put an increasing emphasis on the development of alternative cost-effective programs for the aged, such as community-based care and health promotion. The future nature of health care financing will have to respond to these new forces.

Note

1. This section is drawn from Low and others (1996). The author gratefully acknowledges the contributions of Linda Low and Toh Mun Heng.

References


Choices in Financing Health Care and Old Age Security 42
I want to thank the first three speakers for their interesting and, in some areas, provocative papers. In the interest of time, I will confine my comments to Singapore’s experience with financing health care for the elderly. The points I will highlight fall under four main areas: consumption of health services by the elderly, the demand and cost pressures resulting from the rapid aging of our population, and the financing of acute and of long-term care.

Consumption by the Elderly

Singapore’s elderly consume more health services than the general population. Consider inpatient services—the admission rate for the elderly is nearly three times higher, and their stays are more than 1.5 times as long (table 1). Moreover, 73 percent of the elderly population opts for class B2 and C hospital beds, compared with just 49 percent of the general population. These public beds attract the highest subsidies (80 percent for class C and 65 percent for class B2).

The elderly also consume more at the outpatient level. Attendance rates at specialist outpatient clinics are more than 1.5 times as high for elderly patients. And their day surgery rate is about 2.5 times that of the general population.

Now consider age-specific hospitalization days. The number of days rises with age, and the increase is steepest after age 65. Thus the elderly impose considerable demand pressures on Singapore’s health care delivery and financing systems. The situation is challenging, and we must strike a proper balance between supply and demand to ensure that the elderly can access and afford health services.

Demand and Cost Pressures

On the supply side, we must ensure not just an adequate supply of hospital beds but also of health care professionals, including doctors, nurses, and therapists. The supply must keep pace with the demand in order for us to successfully moderate the cost pressures.

But as the speakers have pointed out, Singapore’s population is aging rapidly. In 1996 the country’s 200,000 elderly accounted for 7 percent of its population, but by 2030 the 800,000 elderly will make up 18 percent of the population.

One widely debated issue is whether aging affects a country’s overall health care expenditure.

As Kai Hong Phua and Yap Mui Teng noted, a 1996 National University of Singapore study indicated that at the current level of health care servicing, national health expenditure will rise from 3 percent of GDP now to 7 percent in 2030 simply as a result of the aging population. Given the pattern of consumption of the elderly and the supply constraints, health care demand and cost pressures in Singapore will definitely grow because of aging. And this is in addi-

<table>
<thead>
<tr>
<th>Indicator</th>
<th>General population</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission rate per 1,000 people</td>
<td>98.6</td>
<td>275.1</td>
</tr>
<tr>
<td>Share using class C and B2 (subsidized) wards</td>
<td>49.4</td>
<td>72.6</td>
</tr>
<tr>
<td>Average stay (days)</td>
<td>5.1</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Source: Singapore Ministry of Health.

Choong May Ling is director of policy and planning at Singapore’s Ministry of Health.
tion to the pressures we face from technological advances and their effects on medical practice.

Singapore will not be alone in having to address the financial pressures created by an aging population. But Singapore will have far less time than other countries—such as Japan and the United States, which already have far more mature populations—to address aging-related issues.

### Financing of Acute Care

Singapore's health care financing philosophy will be the key to containing rising health care costs. The guiding principle, as noted by several speakers, is one of individual responsibility coupled with government subsidies. Since individuals must save for their health care needs and pay a share of medical expenses at the point of consumption, they are likely to be responsible consumers of health care services. This approach will help us both moderate demand and cost pressures and ensure that all Singaporeans can access affordable health care.

As indicated by Nicholas Prescott and Len M. Nichols, there has been growing interest worldwide in medical savings accounts. Medisave is Singapore's equivalent of a medical savings account, but Singapore's health care financing system is more than just Medisave. It includes several other elements, including Medishield and Medifund, supplemented by government subsidies. Medisave alone does not pay the full costs of any hospitalization. For example, class C inpatients are required to pay 20 percent of the cost (using Medisave funds); the remaining 80 percent is paid with government subsidies. Patients obtaining private care are not eligible for subsidies, and must pay the full costs themselves. Medisave has withdrawal limits, however, so patients and their families must mobilize additional resources to pay these bills, including cash, insurance, and employer benefits.

Questions have been raised about Medisave's withdrawal limits. Medisave contributions are based on the average hospitalization expenses incurred by subsidized inpatients in acute public hospitals. Thus the withdrawal limits are also pegged to the average needs of these inpatients. It is important to remember that the Medisave account, which is built up over an individual's working life, is intended to last for an entire lifetime of hospitalization needs—not just one hospitalization episode. Thus individuals who consume private services must mobilize resources other than Medisave. This policy reduces the risk of individuals deciding inappropriately on private care, then exhausting their Medisave savings and leaving an inadequate financial buffer for future hospitalizations.

To help individuals make the right choice, pre-admission financial counseling is compulsory in all hospitals in Singapore. All Singaporeans are free to choose the class of inpatient care according to their financial means. People who do not have adequate non-Medisave resources to pay for private care should consider using subsidized public services instead. The Medisave minimum sum is intended to help individuals pay for average hospitalization expenses in subsidized wards after retirement. But a sizable portion of the elderly have not accumulated sufficient Medisave funds on their own, and must depend on their children's Medisave (table 2). This is not surprising because Medisave was only implemented in 1984. In the future a growing number of elderly will be able to accumulate their own minimum sum.

Again, as Prescott and Nichols helped clarify, Medisave was never meant to curtail health care expenditure by individuals. The principle of individual responsibility, coupled with family, community, and government support, underpins all health care cost containment measures in Singapore. Medisave was set up primarily to help individuals mobilize sufficient financial resources to pay for average hospitalization expenses for themselves and their immediate family. And in fact, Medisave has contributed to the shift toward private health services. Over the years, as Medisave accounts have built up, private services have fallen within the reach of more Singaporeans. One example is obstetric care. In 1981, before Medisave, 15 percent of babies were deliv-

<table>
<thead>
<tr>
<th>Source</th>
<th>55–64</th>
<th>65–74</th>
<th>75+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children's Medisave</td>
<td>43.3</td>
<td>65.3</td>
<td>66.1</td>
</tr>
<tr>
<td>Spouse's Medisave</td>
<td>3.2</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Own Medisave</td>
<td>26.9</td>
<td>10.6</td>
<td>2.8</td>
</tr>
<tr>
<td>Own savings</td>
<td>12.2</td>
<td>11.0</td>
<td>13.4</td>
</tr>
<tr>
<td>Other provisions</td>
<td>4.5</td>
<td>4.7</td>
<td>8.6</td>
</tr>
<tr>
<td>No provisions</td>
<td>7.9</td>
<td>7.5</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Source: Singapore Ministry of Health.
ere by private medical personnel. By 1991 that share had reached 48 percent.

Some analysts have suggested that Medishield coverage be extended beyond the age of 75. Medishield premiums are based on risk-pooling within specific age groups. Premiums are set based on self-sufficiency within each age group, without intergenerational subsidies. Thus the premiums for those older than 75 would be extremely high given the small number of people in this pool and their high mortality rates. And because few of these people would be working and most would be living off their minimum sum, the affordability and cost-effectiveness of this approach are questionable. The more viable option for these individuals is to use subsidized services. They can then apply for Medifund if they are unable to afford these heavily subsidized bills.

**Financing of Long-term Care**

Finally, I agree that prevention is the best approach to long-term care. Still, we must make adequate provision for long-term care. The key challenge is, how do we ensure that people can mobilize sufficient resources to pay their share of the bill for long-term care if they require such care? Medisave, Medishield, and Medifund, as they are currently structured, may not be the answer. This is because the Medisave contribution rates, contribution ceiling, and minimum sum, as well the Medishield premium, are based solely on (expensive) acute care needs today. I look forward to hearing innovative proposals for the financing of long-term care for the elderly in this conference.
Comment

Lim Chin

In any market the equilibrium price, the equilibrium quantity, and their product, the expenditure level, summarize all the information underlying demand and supply conditions. Changes in equilibrium values reflect the changing information underlying demand and supply conditions. But unlike other markets, in the health care market demand and supply conditions are interdependent, such that the effects acting on both sides of the market can be superadditive.

It is generally recognized that the primary demand factors in the health care market are rising national income, falling effective price to consumers (due to state subsidies embedded in national health insurance schemes), and an aging population. But even when taken together, income, price, and aging effects do not come close to explaining the bulk of the growth in health care expenditures. To understand where else the growth in health care expenditures comes from, one must examine the cost push forces embedded in supply factors—for example, the bulging administrative costs of insurance (especially in the decentralized U.S. market), the proliferation of research and development of costly medical technology, and the growth in diagnostic tests, surgical procedures, drug prescriptions, and other services made available by modern medical technology.

It may appear that the total effect on health care expenditures would simply be the sum of these demand and supply effects. This is not the case, however, because in the health care market the total effect is more than the sum of the parts. This superadditivity is caused by the interdependence between demand and supply conditions.

Interdependence between Demand and Supply Conditions

Studies on the demand elasticities for health care attributable to income, price, and aging indicate that, by themselves, they are not large enough to warrant the escalating health care expenditures observed in most industrial countries. But these elasticities can become large when their effects are magnified by comprehensive (open-ended benefit-guarantee) health insurance schemes.

The demand for health care is not the same as the demand for health care services. Unlike in other markets, consumers demand health care when they need it, but providers choose health care services to meet consumer needs. In other words, there is a serious market failure, with consumer sovereignty over the choice of health care services effectively transferred to providers. The result is the unleashing of incentives for providers, especially those paid on a fee-for-service basis, to prescribe whatever medical technology is made available to them by upstream researchers and developers. This in turn creates incentives for more research and development of medical technology—regardless of whether it is cost-effective in improving health status.

In this vicious cycle, comprehensive insurance magnifies the demand for health care, which in turn causes (through fee-for-service payments to providers) the proliferation of research and development and the prescription of costly technology and services. These, in turn, create the need for further insurance coverage. This cost spiral

Lim Chin is associate professor in the Department of Business Policy at the National University of Singapore.
can easily spin out of control. Aging enters the equation because old people have a higher incidence of chronic disease, so most of the costly medical technology is used for their care.

Cost-effective Remedies to the Challenge of an Aging Population

While an aging population places additional pressure on health care costs, the interconnectedness between demand and supply forces in the cost spiral implies the futility of seeking an isolated solution to the problem. What is needed is a holistic approach that simultaneously addresses both the demand and supply conditions.

To curb excess demand for costly services, it is necessary to:

- Promote, as a first line of defense, legislation and health campaigns that prevent chronic disease.
- Search for a measure of “affordable equity” wherein state-financed health insurance schemes are not comprehensive but confined, for example, to catastrophic illnesses and basic medical treatments.
- Replace open-ended benefit-guarantee insurance schemes with insurance programs that require patients to pay deductibles.
- Shift, in countries with high public health care expenditures, some of the burden of public finance to personal finance through medical savings accounts.

To curb the cost push coming from the supply side, there is scope for:

- Assessing technologies, to avoid those that are not cost-effective and that have minimal marginal effect on health status.
- Changing the incentives for research and development of health care technology.
- Changing incentives to make providers more cost-effective (for example, by using a capitation system of payments to providers instead of fee-for-service).
- Rationing of services by providers.
- Finding more cost-effective ways to provide long-term care for the elderly (domiciliary care, nursing care, and so on).
- Lowering the administrative costs of insurance through centralization (as in Canada).

Conclusion

Although every society yearns to achieve efficiency and equity in the delivery of health care services, not every society has the flexibility to implement all the measures listed above. The reason is the intrinsic tradeoff between efficiency and equity. Each society must find an optimal tradeoff that reflects its traditions, politics, and social contract. Thus it is difficult to talk about an ideal health financing system that can be used as a role model.

For instance, the principle of “universal access to equal need” in health care is enshrined in Canada’s constitution, and is the reason the country has a compulsory national health insurance scheme financed strictly by taxes. The system is expensive: health care expenditure is about 9 percent of GDP. The national obsession with equity in health care gives Canada little flexibility to implement measures that curb excess demand, except in the area of preventive care. Thus, to curb rising health care costs, Canada has no choice but to resort to cost containment measures on the supply side—albeit with some sacrifice of efficiency.

The social contract in the United States does not require the government to deliver equity in health care to all but two groups: the old (who are covered by Medicare) and the poor (who are covered by Medicaid). The rest of the population finances health care services using a range of private insurance schemes. It would seem that this less egalitarian, more flexible system would be more efficient. But with health care expenditure at 14 percent of GNP—the highest in the world—and rising, it is highly questionable that the U.S. system is efficient in the sense that quality care is delivered at the lowest cost. However, the United States has more room than Canada to experiment with the measures listed above to curb demand pull and cost push. The recent U.S. pilot of medical savings accounts (pioneered by Singapore) is still in its infancy, and may or may not effectively regulate demand pull or cost push.

In contrast, Singapore’s social contract gives the government the flexibility to define and implement its own measure of “affordable” equity, with state subsidies varying according to patients’ ability to pay. Consequently, Singapore’s government has considerable flexibility (relative to Canada and the United States) in regulating demand.
by structuring its health care financing using Medisave, Medishield, and Medifund.

Singapore's system is far cheaper than the Canadian or U.S. systems—health care services account for just 3 percent of GDP—but it delivers fewer subsidies and less insurance coverage to the population as a whole. Combined, Medisave, Medishield, and Medifund are an innovative health financing mechanism that regulates demand. But two factors suggest that moral hazard problems may have been overstated, leading to excess regulation on the demand side. First, lower health care expenditure does not imply more efficient health care delivery. Second, there is no evidence of significant moral hazard behavior, especially with catastrophic illness insurance. Catastrophic illness insurance under Medishield requires a large deductible and a high copayment that could be a heavy financial burden on some patients. Thus there may be considerable scope for squeezing more consumer efficiency out of the system—even if it means spending a little more to lower the copayment by increasing the premium or state subsidy in the Medishield fund.

If rising costs for health care services in Singapore are of great concern, efforts should not be directed at further regulating demand. Instead, more should be done to investigate and implement measures that curb the cost push forces acting from the supply side of the equation.
Old Age Security
Social Security Financing Policies and Rapidly Aging Populations

Aviva Ron

By 2025, 58 percent of the world's projected 1.2 billion people over 60 will be in Asia (ILO 1997). Among this group, 11 percent are expected to be over 80. Thus Asia can expect to have nearly 700 million elderly persons, of whom about 77 million will be over 80. This population will contain more women than men. These projections should be at the core of the region's long-term approach to social protection for the elderly.

Challenges of an Aging Population

The paper covers developments in pension and health care benefits within the framework of social security. Since health care can account for a significant portion of household spending in old age, income security and insurance-supported access to health care are closely linked.

Inadequate social security coverage

In most Asian countries social security coverage is restricted to workers in the public and private (formal) sectors. Most of the working-age population who will become elderly by 2025 are now in their 40s and 50s. Not taking life expectancy differences by income level into account, most of these individuals are not formal workers. Under current arrangements they are unlikely to have social protection for income or health care in old age, whether through national social security schemes, community initiatives, or private commercial insurance.

The situation is particularly difficult for women, who are more likely to be engaged in informal economic activity or employed as domestic workers without social protection in their own right and without the protection they may be afforded as dependents of insured workers. For most of their lives, the elderly women of the early 21st century will have borne major burdens without remuneration in household tasks and in the provision of livelihood means. In any event, a smaller portion of elderly women than men is likely to be covered by social security systems.

Strained living arrangements and personal care

Another set of issues that will become more prominent are living arrangements and personal care of the elderly. Today most elderly men and women in Asia live with their adult children. For example, in 1994, 92 percent of the old people in the Philippines lived in households with relatives. In Singapore it was 81 percent and in Indonesia, 81 percent (Association of Southeast Asian Nations data). This situation will change dramatically by 2025, when there will be fewer older children for parents to live with. Increasing urbanization could force elderly rural residents who require assistance with daily living to move to cities to live with fewer or even lone adult children.

These adult children and their spouses may be extremely busy workers, away from home for most of the day, or themselves already over 60. Thus it may be unrealistic to expect a significant portion of the elderly to live with adult children in the coming decades. In terms of financing policy for social protection, the concept of basic services for the elderly may need to be broadened to deal with housing and personal care.

Aviva Ron is senior specialist on social security on the South-East Asia and Pacific Multidisciplinary Advisory Team at the International Labour Organization in Manila.
What types of social protection do the elderly need?

A third element relates to the nature and scope of the benefits to be covered under the broad objective of providing old age security. Defining these benefits raises issues of need, demand, cultural values, and perceptions and expectations. Some people aspire to live in luxurious retirement, without any barriers to seeking high-quality medical care. Most older people, however, simply want to live with dignity and to enjoy good health, without getting themselves or their children into debt when medical services and changes in living arrangements are required.

When trying to define what type of social protection is needed, we may find that from middle age, people will seek protection from the lack of cash resources during retirement, a period of much lower or no income. Many are aware of the changing economic factors that may reduce the value of cash or other assets accumulated during their working lives. They may also be confused by reports on the future viability and value of savings, pensions, or provident funds. Most elderly will essentially seek protection from poverty.

Among those who have accumulated savings, some may be irrational in using money for health care. They may delay seeking care in the early stages of disease or avoid obtaining basic services that they have always considered a low priority, such as clean water and sanitation. The elderly often do not pay sufficient attention to the hazards of ill health, including those prompted by a lack of cash resources for adequate nutrition, shelter, and mobility. The vast majority of the elderly see these goods within a general context of available cash resources, rather than as necessary for their health. Yet when the longstanding chronic condition of an individual or spouse becomes life-threatening, life savings can be wiped out in a short time by just a few high-cost medical treatments—without significant health benefits.

The approach to social protection should be basic, allowing all funding partners to provide benefits within an affordable spending limit, regardless of the sources of revenue. But defining basic levels of income, housing, and health benefits can be extremely difficult and delay the development of appropriate social security schemes. Both consumers and policymakers need to change some of their perceptions and expectations to ensure a higher-quality and more productive old age. Many elderly populations perceive that deterioration of vision to eventual blindness is part of growing old. Access to health care that removes a cataract to retain sight may be beyond the expectations of many. A similar situation applies to mobility. There is little awareness of the improvement in the mobility of the elderly that can be attained with simple aids and physical changes in and around the home. Safe water and sanitation in the household make a significant difference in the functioning of an older person with motor difficulties. These utilities are not just public health concerns but also personal preventive measures. Broadening the nature and scope of basic benefits ensures a higher-quality old age by adding preventive and rehabilitative services. Moreover, reduced dependency in old age is generally cost-effective.

Recent Changes in Social Security Financing

Gruat (1997), in a review of trends in social security systems, identifies three main reasons for social security reform around the world. The first is to make the systems responsive to social needs by targeting the benefits to populations with the greatest needs. Reform may, for example, seek to cover informal workers, including those engaged in irregular economic activity and with unstable incomes. Social protection schemes can be developed by extending formal sector schemes through legislation that implements national social protection policies—as in Japan, the Republic of Korea, the Philippines, and Vietnam.

Recent years have seen sporadic growth in schemes for the informal sector, in some cases ahead of national policy or when the implementation of national policy has been too slow to achieve local goals. These schemes may be implemented using innovative approaches—for example, by operating through cooperatives, introducing new contractual agreements with providers of benefits, or cooperating with nongovernmental organizations (Ron 1997).

Informal sector initiatives usually start with short-term benefits, such as health care. Though the move toward such systems is positive, the list of problems to be dealt with is long, particularly if long-term benefits are included. Because the schemes are likely to start with voluntary affiliation, there may be adverse selection, and therefore a need for stringent monitoring of eligibility to prevent abuse. The con-
cept of insurance, or prepayment for services that may not be used, is difficult for some people to comprehend. A multitude of schemes may result that lack sufficient commonality in basic conditions and benefits and do not offer portability of entitlement. While it is neither realistic nor desirable to plan for unified systems in all countries, in pluralistic systems the unguided growth of such schemes may show many cases of failure.

The second reason for social security reform is the increasing prominence of economic over social concerns. Reforms seek greater targeting efficiency by changing the conditions of entitlement and the method of calculating benefits and reimbursements. This approach appears to divert the social security system to financial activities outside its basic objectives, such as promoting capital markets. There may be a risk of neglecting membership and benefit objectives, and of undermining the social security scheme’s responsiveness to changing needs.

The third reason for reform is to promote individual options. Changing supply and demand factors, including privatization, encourage reform that allows for individual preferences. The scope of this reform is enormous, from the addition of voluntary, supplementary insurance options above the basic benefits (through both public and private initiatives) to the development of purely private insurance systems for specific groups. The opening of social protection mechanisms to market forces need not necessarily mean a transfer to private for-profit insurance entrepreneurs, as often seems to be the case in discussions of social security reform. Constructive competition involving both the public and private sectors could cater to the demand for individual preferences. For example, health insurance schemes can generate competition between public and private health care providers. Thus improvements can be made without destroying equity and with due regard for international standards on social security.

Although these reforms have extended coverage and made benefits more compatible with needs, there have also been some unforeseen consequences. Collective financing is less common. Diverse, separate schemes do not offer the benefits of core principles and practices to ensure equal treatment under the various schemes, portability between them, and some minimal redistribution of funding resources. Conditions of entitlement are more likely to have means-tested benefits and limitations, leading many to wonder whether the new forms are social insurance or social assistance. And though there are new social partners, there are not yet effective mechanisms for holding them accountable in social insurance schemes.

The reform process

The development and implementation of reforms are part of a process that is not always coherent. More attention tends to be paid to stating objectives and identifying stages than to developing workable definitions of the benefits to target populations and specifying the responsibilities of each partner in funding, management, and financial control. Defining “basic” benefits is often a major stumbling block in the reform process, or even a way to delay the extension of coverage to new target populations.

To better understand the process, consider the relationship between social development and social security systems. Social development is dynamic, and Asia’s pace appears to be comparatively rapid. Social security systems can be based on the principles embodied in International Labour Organization (ILO) conventions and ratified by most ILO member states. But each scheme has its own history and own pace of responding to change. In general, social security systems tend to be slow in dealing with changing needs linked to shifting demographics, employment, and globalization, and the related health hazards. Reforms that are meaningful beyond policy declarations must cover all these changes.

Thus we must define both old and new benefits over a longer lifespan, covering new populations with unstable sources of income (such as the self-employed or informal workers) or populations with changing locations for the provision of benefits (such as migrant workers). The spectrum of health care traditionally covered by social insurance mechanisms is being challenged as it becomes increasingly clear that preventive and rehabilitative components are essential not only for the health of the insured populations but also for the health of the funds. In addition, early return to productive work means a return to contributory status for an insured person, who in turn contributes to economic growth.

The nature of social security systems explains part of the delay in responding to needs. These systems may be

SOCIAL SECURITY FINANCING POLICIES AND RAPIDLY AGING POPULATIONS
governed by national legislation that can be amended only when certain political circumstances prevail, requiring a lengthy process under the best conditions. The regulations for operation of the law may be misused and even abused. And even when social security systems have a quasi-autonomous administrative structure, their daily management may be more political than professional.

Thus it is important to be realistic when planning, legislating, and implementing reform, and to ensure that at least five essential areas are covered: administrative structure, benefits, contributions or sources of revenue, target populations, and relationships with social partners. In addition, it is important to bear in mind that extending coverage and benefits to self-employed, informal, and migrant workers could quickly double or triple the number of insured persons. Some new social partners have less experience with planning and negotiations, as they are indeed new to social security.

Shifts in the burden of responsibility for social protection

The reform of social security systems is also shifting the burden of responsibility. One type of shift is from government responsibility for financing services, such as health care, to consumer responsibility. Another is from enterprise or employer liability for reimbursement or provision of benefits to a contributory and cost-sharing approach through regular prepayment of a defined contribution or percentage of wages by workers, employers, and sometimes governments.

Some countries have retained government responsibility for direct financing by legislating that it must pay a defined part of the contribution. Such was the case in Thailand, where the first Social Security Law, passed in 1990, stipulated government responsibility for one-third of the contribution for salaried workers in the private sector. Given Thailand’s current economic crisis, government participation is now being questioned, particularly for the contribution to pensions scheduled to start in 1998. Although many successful national pension schemes do not depend on government contributions, Thailand’s current political climate does not facilitate amending the law—providing an example of the problems faced in social security reform.

In transition economies such as China and Vietnam, social security reforms reflect a shift in the burden of responsibility for financing from enterprises (including state enterprises) to employees and employers. China’s social security reform for public and private sector salaried workers is raising salaries to compensate for the employee contribution, even for the 1 percent employee contribution toward health insurance. In the reform of rural medical cooperatives in China, local governments can add to the contributions of the rural insured population at will. In practice, local governments add a flat amount per insured person that reflects their financial situation each year (Carrin and others 1996).

Vietnam’s Health Insurance Decree of 1992 imposed compulsory health insurance for active and retired salaried workers, funded by employee and employer contributions. The same decree stipulated central government contributions for veterans or their survivors and the disabled through the Ministry of Labor, Invalids, and Social Affairs. While the operations of the health insurance system are centralized, Vietnam’s Health Insurance Company encourages initiatives in voluntary affiliation through its provincial offices. One such initiative is the coverage of the elderly indigent by the People’s Committee (local government) of the province of Hai Phong, through payment of the contributions of these individuals to the provincial Health Insurance Company (Ron and Carrin 1996).

The shift in responsibility for financing by no means terminates government responsibility. In fact, this transition should strengthen governments’ role and responsibility in developing the optimal financing policies for social protection, enacting the required legislation, and ensuring effective implementation. The paradox is that often when government has relinquished financial responsibility and passed the necessary legislation, interest dwindles along with its financial commitment.

Pooling of funds

The pooling of funds is a basic tenet in the concept of social security, as is the pooling or spreading of risks. In recent years renewed attention has been paid to the pooling of funds (with somewhat less attention to the pooling of risks), prompted by the trend toward establishing individual savings under or on top of pooled funds in social insurance schemes.

The elderly are a high-risk population for social protection schemes. Thus it seems that the most logical way to
cost-effectively meet their needs is to share their risks with low-risk populations. Yet the population currently making contributions may not be large enough to cover its own risks over time, particularly if there is little control over how quickly funds are spent.

Who will make up future vulnerable populations? Most Asian social security schemes for public and private sector salaried workers, and for the informal sector and self-employed, cover insured persons, as retired workers, and dependents of insured persons or survivors of active and retired workers. These groups do not include most women working in family enterprises or migrant workers returning to spend their final years in their home country. Social security coverage was recently extended to overseas Filipino workers but is aimed mainly at protecting against contingencies.

In any case, many of those currently covered as workers may not be eligible for benefits in old age, either because they will not have made sufficient contributions to entitle them to old age benefits or because some benefits do not continue into retirement. Health care benefits were extended to retired workers in the Philippines only recently. In Thailand retired workers can opt to pay a flat-rate contribution to retain coverage for health care. Few countries in Asia have universal coverage through national tax-funded pension and health schemes or compulsory social security schemes. If current practices continue, the individuals now covered will not account for a significant percentage of the elderly in most of Asia by 2025.

For health care, universal coverage may be more likely through compulsory contribution schemes than through national systems funded entirely by general taxation. Once funding partners have been identified and mechanisms developed for individuals outside the system, the extension of coverage will need to be rapid. Even if the elderly are given top priority, there is no time and certainly no justification to collect contributions from them and then create funds by imposing lengthy qualifying periods. There does not seem to be any logical alternative to pooling active and retired workers, across private and public sectors and across generations, to achieve fund viability.

In this regard, consider what has happened in pluralistic systems where separate funds are operated for different groups. In the Republic of Korea active industrial workers have a well-balanced health insurance fund that runs a surplus (Lee 1995). Retirees from all labor sectors are covered by a special fund for retired workers and their dependents. Cost-sharing levels for health care are rising for members of this fund because it the only apparent way to avoid huge deficits. Yet raising contribution rates for retirees is hardly a rational solution.

One variation being tried in the reform of social health insurance for salaried workers in China is to use pooled funds after individual accounts have been exhausted, or when high-cost services are required. The individual accounts accrue about half of the employer and employee contribution, which is based on a percentage of each employee’s salary. These funds are kept in the bank to earn interest and are transferable as inheritances. Questions are now being raised on the equity and rationality of this approach in the first of 60 cities included in this experiment. Individual accounts are in fact not an insurance mechanism but compulsory savings that would otherwise be difficult to put aside.

In several of the pilot cities the individual savings are to be used for minor illness, while the pooled funds are for more costly care. Workers are reluctant to use their savings for illnesses perceived as minor, while providers have become adept at emptying the pooled funds. The neglect of minor cases often occurs at the onset of chronic disease, and the consequences of such disease further deplete pooled funds and workers’ long-term capacity to work.

The trend toward privatization in transition economies must also be considered in the pooling issue. There are wide disparities in salaries and income within and between state and private enterprises. Social insurance systems that place individual savings at the base and pooled funds above put low-income workers at a double or triple disadvantage. They exhaust their smaller savings faster, possibly with a higher prevalence of health problems and with less knowledge to guide them about rational use of the system.

For all these reasons it would seem preferable and logical to continue with past social security practice. That is, pooled funds should form the base for risk sharing among all members of the insured population, and cover an essential and balanced spectrum of benefits. Individual accounts can then be used for supplementary benefits.

**Pension Benefits**

The rapid aging of the population in Asia is not the main reason to establish or extend pensions systems for old age.
As noted, anticipated changes in living arrangements for the elderly are prompting concern about support in old age in general. In parallel, employment and labor force factors have spurred interest in pensions as a form of support (Beattie 1997). The growth of the salaried sector has put a time dimension into the search for income replacement during retirement. Salaried employment generally involves a mandatory retirement age, after which the employee may or may not find a new job with a new employer or become self-employed.

The importance of some form of income replacement during old age is increasingly recognized, though not necessarily by most of the individuals who will be at risk in the coming decades. Awareness of the need for this form of social protection will probably grow in the near future, along with national and international activities. In the meantime, the problem of finding the optimal financing solution is compounded by projections of the population at risk, and by the length of time during which such support may be needed.

Current arrangements for financial protection in old age in most countries in Asia and the Pacific will not come close to meeting the challenges created by the expected elderly population. A small number of countries offer financial support for all their older citizens. Australia and New Zealand have statutory pension schemes funded by general taxes. Japan provides old age pensions through a contributory social security mechanism (Beattie 1997). And provident funds have developed in some countries where British influence pervaded, such as India and Malaysia.

Political and technical factors make it difficult to transform a provident fund into a pension scheme, and only recently have some countries pursued such reforms. This change has been driven by the fact that the duration of life after retirement is getting longer. The lump sum payments of provident funds are not an appropriate form of social protection for old age, particularly when this period may be more than a quarter of the lifespan. From the viewpoint of the adequacy of pension funds, a country’s retirement age is crucial. The statutory retirement age may be influenced by economic recession and employment (Anderson 1994). Over the past two decades some European countries lowered the retirement age and provided incentives for early retirement. In response to largely unforeseen negative consequences, such policies are now being reversed. In Asia retirement ages are likely to rise, partly because of the increase in life expectancy.

In some systems, such as the Fiji National Provident Fund, beneficiaries can choose between lump sum and pension payments. Most members choose the lump sum, which may indicate some lack of awareness of long-term needs. Since 1995 India’s Employee Provident Fund has been partially converted into a pension scheme. Employer contributions now finance a pension, while worker contributions continue to be paid into individual savings accounts.

Countries that have developed compulsory pension funds have started with salaried workers and gradually expanded to workers in small enterprises and the self-employed. But the growth in coverage of the self-employed, including individuals in high-income occupations, has been slow. Here again there may be a lack of awareness of the potential benefits of this form of social protection. Making regular contributions to a pension that will replace income in the not too immediate future may not be attractive to workers, even when the contribution is shared with employers. And employers in the salaried sector are not likely to make contributions when the capacity of pension schemes to enforce compliance with legislation is not well developed.

Throughout Asia there is increased understanding of and interest in compulsory pension schemes, and efforts are being made to extend or merge existing schemes. In Lao PDR and Vietnam schemes for civil servants are being extended to private sector workers. Since 1995 the Korean government has subsidized the administration of the pension scheme for farmers, fishers, and other rural self-employed persons as part of its efforts to implement compulsory coverage of this population. The Philippines is trying to adapt administrative mechanisms and reach reciprocal agreements with other countries for millions of migrant workers.

The continuation of entitlement to health care for retired workers and their dependents seems logical but is not always practiced. Two reasons cited are the difficulty in collecting contributions from individuals rather than from employers, and the possible unfairness of flat-rate contributions. A pension scheme enables the deduction of health care contributions at the source, simplifying matters. Where desirable, a pension scheme can also allow for a progressive

**CHOICES IN FINANCING HEALTH CARE AND OLD AGE SECURITY**

56
contribution, based on percentage of pension, rather than a flat-rate contribution. Thus this approach deals with the criticism of cross-subsidization of health care between the elderly who have accrued significant assets and sources of income and those who depend on pensions.

**Health Care and Welfare Services**

Health care financing reflects the shift in government responsibility in most countries in Asia. Responsibility for both the financing and delivery of services is generally detailed in basic health laws, which stipulate free care in government facilities. While most governments have adopted the target of providing universal health care by 2000, few continue to automatically deliver free care to all but their very poorest citizens. In recent years ministries of health have introduced user fees in their health care facilities at both the national and local levels. The application of user fees has forced these ministries to develop budgeting and pricing mechanisms, leading to better financial management by governments and providers.

User fees have potential drawbacks, however (Abel-Smith 1992). Applying user fees at the time of illness can lead to irrational health behavior, first by prompting delays in seeking care and then by distorting decisions on what services to purchase beyond the initial consultation. Some old people may purchase whatever care is advised in an attempt to lengthen life, whatever the cost. Many more, however, may take a skeptical approach and do very little in terms of seeking care—particularly when it requires them to spend scarce resources.

The revenue generated by user fees, particularly if the payment is minimal in the first stage, may be less than expected and may not even justify the cost of collection. In addition, user fees can encourage patients and providers to behave unethically in seeking exemptions from payment. Health care providers quickly realize the potential for generating revenue by generating demand for care, and may start encouraging unnecessary care. In developing countries such behavior is not limited to overuse of high technology or lengthy hospital stays. More common is the large portion of patients who receive vitamins and antibiotics, often by injection.

User fees cannot become the preferred alternative to health care financing. But despite the current increase in economic activity and the potential for increases in general tax revenue, governments are not likely to return to the "free"—that is, funded through general tax revenues paid by the economically active members of society—care system. Tax collection systems are generally not well developed. And even if tax collection produced sizable revenues, other priorities (education, housing, roads, transport) would likely compete for these funds.

This analysis should take into account the effect of higher health care expenditures. For a variety of reasons, health care costs more today than ever before. People live longer, and there are more effective technologies for diagnosing and treating chronic diseases. But it is difficult to control the volume of new technology and its use, and the use of care is often driven by supply rather than demand.

These factors contribute to the reluctance of governments to return to systems in which they are responsible for securing public funds and disbursing them to finance health care for the majority of the population. Governments are also reluctant to take back the responsibility for financing health care because of current efforts to achieve a better public-private mix in resources, reduce public expenditure, and derive more resources through consumer cost sharing.

In practice, however, most of the elderly in many Asian countries fall into the "free care" category. Access to health care means being identified and possibly being given a card exempting the bearer from charges on the grounds of being an elderly indigent citizen. But utilization patterns for this population are not necessarily high, and suggest that many older persons would rather not receive care than apply for the exemption card. Where the stigma of having such a card is not an issue, it may be abused and misused.

**Government responsibility after the shift**

How does the change in government responsibility affect health care for the elderly? Responsibility has shifted from financing health care to finding the optimal method for financing health care, including for the elderly. If health insurance is the best option for the future elderly population, to what extent has this mechanism been developed in Asia? And what needs to be done to cover the elderly?
Social health insurance was introduced for the formal labor sector in Asian countries, as part or as a forerunner of broader social security benefits. The beneficiary population was usually defined as workers and legal dependents, though some countries opted to cover only workers. In many countries civil servants were covered by noncontributory medical benefit arrangements, with at least some benefits extended to the workers' dependents. Reflecting the small portion of the labor force in salaried employment in the public and private sectors, population coverage has remained rather low for the past decade. The proportion of the elderly covered by such schemes is even lower, as many do not offer health care benefits for retired workers.

Recent years have seen the growth of health insurance schemes as community initiatives, on a small but encouraging scale. These schemes involve economically active members of cooperatives or may be sponsored by nongovernmental organizations, but only a small number of older people may be covered as dependent parents. Commercial for-profit insurance has grown, though on a far smaller scale and usually as a branch of large general insurance companies. The populations first covered by this type of insurance were mainly the employees of multinational companies, and the share of such schemes in national coverage is still negligible in most Asian countries. In any case, most commercial for-profit schemes do not provide coverage for people over 60 unless they have been in the scheme for many years.

The exceptions to the above are the few countries—Australia, Japan, Korea, Singapore—where legislation eventually covered all residents or citizens. Countries with universal health insurance coverage are now concerned about long-term care, mainly for the elderly. Through additional contributions, new benefits are being designed to focus on rehabilitation and long-term nursing and custodial care. The main stimulus for such schemes appears to be the increasing number of older persons living alone rather than basic concern about rehabilitation or changing morbidity in old age.

Moving toward more balanced coverage

As noted, Asia is a long way from seeing the majority of the elderly in 2025 covered by appropriate health insurance mechanisms. But rather than dealing with the problem of how coverage can be extended in terms of administrative frameworks and sources of contributions, it might be more useful to look at the optimal approach to health insurance benefits for the elderly.

Aging, as manifested by longer life expectancy, results partially from the successes of medical science and technology. In the past 50 years great strides have been made in eradicating infectious diseases and in preventing and detecting some chronic diseases. But we still lack knowledge about the value of technologies that prevent the progression of disease through complicated and costly interventions. It appears that health system development in Asia tends to promote high-cost diagnostic, pharmaceutical, and surgical interventions while neglecting other components. High-quality care is becoming synonymous with a range of diagnostic procedures and consultations, and with the private health care facilities where these have been developed.

Beyond maternal and child health care programs, governments appear to give inadequate attention to achieving a balanced spectrum of care in community, hospital, and alternative forms of inpatient care, such as hospice care. Even in countries where the elderly are covered by social health insurance, there has been little revision of benefits and conditions to promote primary health care, higher-quality care, continuity of care, or cost control. Most health insurance systems in Asia still favor inpatient care, and have done little to limit the use of high-cost technology by developing primary health care (Abel-Smith 1992). Such trends are incompatible with viable health insurance systems, in which contributions need to be affordable for the vast majority of the population. And they are certainly not compatible with achieving a balanced budget when a large portion of members is elderly.

Parallel action may be needed to achieve compatibility between the goals of extending health care coverage to the elderly and developing health systems. Governments will need to reconsider their new responsibilities and become more active in achieving balanced system development, which will have to include some control of health care resource growth. Governments will also have to support social health insurance efforts to control health care expenditures by introducing appropriate pricing mechanisms and changing provider payment mechanisms, in both public and private facilities.
Social health insurance systems will need to develop a cost-effective and cost-efficient approach to the provision of benefits for the elderly—promoting health, preventing disease, developing cost-effective measures to detect disease as early as possible, and monitoring to prevent the progression of disease. These functions are best carried out by community-based primary care providers, with referral to other types and levels of care as needed.

Alternative sites for the provision of care should also be considered. Throughout Asia, it is customary to tend to parents at home in the final stages of life. But home care at earlier stages of disease and hospice care are almost unknown beyond some recognition of their advantages for HIV/AIDS patients. Social security systems should use these approaches to enlarge the spectrum of health care benefits.

Governments and social health insurance systems will have to reach consensus on what constitutes public preventive care, provided by government, and what is included in personal preventive care, to be covered as insurance benefits. Another area requiring coordination is overall health system development. The strengthening of primary care and the inclusion of new forms or locations of care need government support, not only from ministries of health but also from ministries dealing with human resource development and welfare services. Ministries of health are clearly responsible for licensing health care practitioners and facilities. Yet in many Asian countries the development of health insurance reflects confusion about whether accreditation is the responsibility of government or the insurance scheme.

Social health insurance, together with other social insurance branches and other agencies, will also have to broaden the approach to social protection benefits beyond health care and income replacement in old age. It is extremely difficult to define what benefits will protect old people from isolation, loneliness, societal attitudes leading to discrimination, and the decline in dignity and respect that often accompanies old age.

The main difficulty is not a lack of empirical knowledge on effective services or benefits for the elderly. It is more closely related to the difficulties in changing awareness of and attitudes about these issues among policymakers and the insured population. At the level of social insurance, this means that health insurance revenues—including surpluses of contribution revenues over expenditures—could be used for less conventional purposes (for example, developing the infrastructure of health care facilities in response to members’ needs). At the level of the consumer, it means that an adult son or daughter will derive more pride from purchasing a year’s membership in a health insurance scheme for an elderly parent than from paying for a high-cost diagnostic procedure that may make a minimal contribution to health.

The “five D’s” used as indicators of health can be used to examine the outcomes of such measures for the elderly. Ultimately Death will come, and old age will not be free of Disease. But much can be done to reduce Disability, Discomfort, and Dissatisfaction. Using such an outcome approach could help bring about changes in awareness and operations of social security systems.

**Conclusion**

The aging of populations does not result from medical success alone. Increased access to health and other services comes from overall economic development, including the removal of financial barriers to receiving care. Thus any adjustments should build on success, and use lessons from education, health care, and economic growth to improve the expectations for healthier, happier, and more active old age.

Healthy aging is built on a healthy childhood and working life, with appropriate social protection to cover the contingencies of the lifespan (WHO 1993). Corresponding social security mechanisms cover maternity, illness and disability, occupational injuries and diseases during the working years, and ultimately old age and death. To build on achievements, we need to consider the capacity to achieve the various forms of universal social protection.

The process to extend coverage may begin with some decisions on how to proceed in terms of structure, including the issue of unified or pluralistic systems and financing policy. Achieving universal coverage will require rapidly extending coverage to dependents of salaried workers, informal sector workers, and the self-employed. Social security does not imply one unified system, but pluralistic mechanisms to cover all citizens—using common basic standards and operated by public and nongovernmental organizations at the national and local levels. The public-private mix that satisfies basic
needs and individual preferences without compromising equity should be an inherent component of this effort.

Pooling should be as broad as is politically feasible, in terms of national decentralization policies and local factors. National networks that provide guidelines and hopefully some redistribution are essential. The extension of social security does imply compulsory affiliation through contributory mechanisms by or on behalf of insured persons. Voluntary supplementary insurance, through the same scheme or through private insurance schemes, can top up nonessential benefits to enable individual preference.

The move toward universality will require more than simple changes in benefits. New beneficiary populations will need new mechanisms to calculate and collect contributions and to assure compliance. Coverage objectives could be planned in stages, beginning with new retirees if they are not currently covered, their spouses, and the dependents of active workers. In parallel, social security system management needs to be improved, not only to keep up with information technology but also to create responsiveness in the provision of benefits at each level of operation.

Until universal coverage is achieved, governments will need to provide social assistance for individuals not covered by social security schemes. Because allocations are unlikely to cover all the needy, local initiatives and non-governmental organizations will be essential. Moreover, there should be accreditation and coordination to avoid duplication of effort and resources.

Decisionmaking and reform will be difficult, and may imply a radical shift in values and reassessment of the approach to solidarity. The approach taken should focus on value for money for the appropriate benefits for the target beneficiaries. Systems should be workable and transparent, guided by professional knowledge, compatible with economic growth objectives, and well understood and acceptable at the political level. The schemes need to be stable yet flexible, able to respond to changing circumstances without major revision of legislation.

As noted, Asia is projected to have 58 percent of the world’s elderly by 2025. In most countries people over 60 will account for 10–15 percent of the population. Industrial countries with a similar percentage of elderly have problems providing appropriate services for their senior citizens. But the situation is not catastrophic in countries where a universal social protection policy has been followed and new benefits have been introduced in response to changing needs.

Some of the problems facing industrial countries developed because shifting demographics and changing employment patterns have placed the financing burden on two few workers. Other problems come from inappropriate fund management or from a period of economic instability that leads to incompatibility between the amounts that can be spent from old age funds and the real cost of services for the elderly. Yet in many cases social protection benefits have been broadened excessively to accommodate unnecessary high technology, and many payment mechanisms for providers are inefficient. If we focus on finding out what basic services are required, place more emphasis on prevention, and emphasize a primary care approach, we can foster a kinder, more respectful environment for the elderly population of 2025.

References


New Models for Old Age Security: Experiments, Evidence, and Unanswered Questions

Estelle James

In the next 35 years the proportion of the world’s population that is more than 60 years old will nearly double, from 9 to 16 percent (figure 1). With rapid increases in life expectancy and declines in fertility rates, populations in developing countries are aging much more rapidly than are populations in industrial countries. By 2030, as today’s young workers near retirement, 80 percent of the elderly will live in what today are developing countries. Thus it is essential that policymakers start to plan for the care of their aging populations.

Many of these countries now rely heavily on family assistance and private, voluntary old age support. But cross-sectional analysis shows that public spending on formal pension plans increases exponentially as populations age. In some industrial countries, for example, it now exceeds 15 percent of GDP (figure 2), and it will soon reach that level in many more countries as the demographic transition proceeds.

With such large sums involved, the way this money is generated and spent can affect the entire economy by influencing productivity, factor supplies, and therefore the size of GDP. For example, high payroll taxes can lead to unemployment, deficit financing can fuel inflation, and prefunding pension expenditures can be part of a plan to increase national saving. Countries with larger private pension funds have lower public spending, and these two types of spending may have different effects on the broader economy. Therefore, two criteria should be used to shape and evaluate pension programs: they should protect the old in an equitable way, and they should promote (or at least not hinder) economic growth—which is important for both the old and the young.

In the past most government old age security systems were pay as you go plans; workers were taxed today to pay pensions to old people today. This paper argues that because aging is a predictable life experience, saving during younger years can self-insure a large part of old age security, shifting consumption from younger productive years to older years when consumption exceeds income. Myopia among workers may require that retirement saving be mandatory, but relying to some extent on self-insurance and saving for old age may reduce many of the incentive problems associated with tax and transfer pay as you go systems.

Another aspect of old age security systems requires pooling risks and insuring or redistributing across individuals because some people will retire early with disabilities, die young and leave dependents, live longer than average and run out of resources, or earn very low lifetime incomes that are insufficient to support them during their working and nonworking lives. This is the rationale for providing a combination of mandatory self-insurance and insurance across individuals in a multipillar system that puts greater emphasis on saving, has separate financing and managerial mechanisms for redistribution and saving, and shares responsibility between the private and public sectors.

In the past few years many countries have adopted multipillar old age security systems. Although structural change is always difficult, the experience of these countries shows that it is possible, that it takes somewhat different forms in

Estelle James is lead economist in the Policy Research Department at the World Bank. A similar version of this paper is forthcoming in The World Bank Research Observer.
different places, and that it usually involves transition costs that are spread over several generations. Preliminary empirical evidence suggests a positive impact on efficiency and growth. But it also brings to the fore new problems—high administrative costs and regulatory regimes that distort investment—that remain to be solved.

**Problems with Old Systems**

Most of today’s formal systems for old age security are publicly managed, pay defined benefits (meaning a payout formula based on the worker’s earnings and years of service), and are financed by payroll taxes on a pay as you go basis. It is now widely recognized that these systems generate many problems, including:

- High and rising payroll taxes that may increase unemployment.
- Evasion and escape to the informal sector, where productivity is lower.
- Early retirement, which reduces the supply of experienced labor.
- Misallocation of public resources as scarce tax revenues are used for pensions rather than for education, health, or infrastructure.
- Lost opportunities to increase long-term saving.
- Failure to redistribute to low-income groups.

**FIGURE 1**

Percentage of population over 60 years old, by region, 1990 and 2030

- OECD countries
- Transition economies
- China
- Latin America and the Caribbean
- Asia (excluding China)
- Middle East and North Africa
- Sub-Saharan Africa
- World


**FIGURE 2**

Population over 60 and public pension spending, various countries

Public pension spending as percentage of GDP

• Unintended intergenerational transfers (often to high-income groups).
• The growth of a large implicit public pension debt and financing gap that makes the current system unsustainable in many countries.

As a result, existing systems have not always protected the old and are particularly unlikely to protect those who grow old in the future. Moreover, they often have failed to distribute benefits in an equitable way and have hindered economic growth. In addition, they simply are not sustainable in their present form. Not every problem exists in every country, but they are found in most countries, both industrial and developing. This prevalence suggests that these problems are not accidental, but inherent in the economics and politics of pay as you go defined benefit plans—the model preferred by politicians who find it simpler to promise short-term benefits at the expense of large long-term costs.

The Multipillar System

To avoid these dangers, the World Bank has been recommending—and many countries have been moving toward—a system in which some of an individual’s pension is financed by preretirement savings, which are privately managed. These new arrangements contain three pillars:
• A mandatory, publicly managed, tax-financed pillar for redistribution.
• A mandatory, privately managed, fully funded pillar for savings.
• A voluntary pillar for people who want more protection in their old age.

The first pillar resembles existing public pension plans, but it is smaller and focuses on redistribution—providing a social safety net for the old, particularly those whose lifetime income was low. The benefit formula can be flat (uniform for everyone or related to years of covered employment, as in Argentina and the United Kingdom), it can be means- and asset-tested (as in Australia), or it can provide a minimum pension guarantee (as in Chile). The first alternative provides additional coinsurance and redistribution to lower-middle-class workers, while the last option is cheaper. In some cases (Australia, Chile) the first pillar is financed out of general revenues rather than through a payroll tax. Because this pillar is of limited scope and has a broad tax base, the tax rates needed to support it are much lower than the public system requires in most countries today.

The second pillar differs dramatically from traditional systems. It links benefits actuarially to contributions as in a defined contribution plan, is fully funded, and is privately and competitively managed. (In such a plan the contribution is defined, and the future pension depends on accumulated contributions plus investment returns. In a fully funded system assets are always sufficient to cover future liabilities.) Essentially, people are required to save for their old age.

The third pillar, voluntary saving and annuities, offers supplemental retirement income for people who want more generous old age pensions.

The most innovative and controversial of these arrangements is the second pillar, so it is worth examining the rationale for its characteristics:
• Why mandatory? The rationale here is myopia—a significant number of people may be shortsighted, may not save enough for their old age on a voluntary basis, and may become a burden on society at large when they grow old.
• Why defined contribution? The close link between contributions and benefits in this plan should discourage evasion, escape to the informal sector, and other labor market distortions because people are less likely to regard their contribution as a tax. And those who do evade bear the cost in the form of lower benefits rather than passing the costs on to others and undermining the financial viability of the scheme. Because the pension is acquired on actuarially fair terms, given the age and accumulation of the worker, these plans are likely to deter early retirement and to raise the normal retirement age automatically as longevity increases—without involving the government in a difficult political decision.
• Why fully funded? First, pre funding makes the costs clear up front so that countries are not tempted to make promises today that they will be unable to keep tomorrow. Second, it avoids large payroll tax increases that are needed in a pay as you go system as populations age. Third, it prevents large, inadvertent intergenerational transfers from young people to older workers. Once an unfunded system is set in motion, intergenerational transfers occur automatically as a result of the aging and
maturation process, sometimes in ways that people did not expect and would not have chosen. For example, the early generations to be covered (including rich members) gain, while later generations (including poor members) lose, even though they did not have a chance to participate in the political decision that produced this contract. Full funding eliminates such undesirable transfers. And finally, funding may be used to help build long-term national savings. These savings can enhance the productivity of future workers, they can be embedded in consumer durables that provide a stream of future services, and they can be invested abroad and redeemed to finance purchases of consumer goods. Thus saving can be an important ingredient of a long-term strategy for providing additional domestic consumption when the dependency rate increases.

- Why privately managed? This maximizes the likelihood that economic rather than political objectives will determine the investment strategy, thereby producing the best allocation of capital and the highest return on savings; and it helps countries, especially middle-income countries, develop their financial markets. Empirical data show that publicly managed pension reserves typically earn low, even negative, returns, largely because public managers are required to invest in government securities or loans to failing state enterprises at low nominal interest rates that become negative real rates during inflationary periods. The hidden and exclusive access to these funds makes it easier for governments to run large deficits or to spend more wastefully than they would if they had to rely on a source of funds for which they were more accountable.

  Competitively managed funded pension plans, in contrast, are more likely to be invested in a mixture of public and corporate bonds, equities, and real estate, thereby earning a higher rate of return. Private pension funds can enjoy the benefits of investment diversification, including international diversification, which protects them from inflation and other country-specific risks and thus enables them to increase their yield and reduce their risk. Private pension funds build constituencies that help them resist political manipulation. They spur financial market development by creating a demand for new financial instruments and institutions. Three caveats obtain, however: countries must have at least rudimentary capital markets before they can put the funded pillar in place; considerable government regulation and regulatory capacity are needed to prevent fraud and excessive risk; and if this regulation is excessive or misdirected, financial markets and investment policies will not be optimal.

  All three pillars coinsure against the many risks that old people face, particularly the risk stemming from uncertainty about the future economy or polity—such as breakdowns of the market or the government, changes in relative prices of labor and capital, or a deterioration in the position of a particular country—by diversifying across types of management (public and private), sources of finance (labor and capital), and investment strategies (equities and bonds, domestic and international). Risk diversification is especially important given the long time periods and great uncertainty involved. Whatever unpredictable disasters occur in the future, this diversified system is most likely to continue providing protection based on the old adage “don’t put all your eggs in one basket.” (See World Bank 1994 for more details. For a quantification of the welfare gains from diversification, see Pujol 1996).

  Singapore is atypical in that it has relied primarily on a defined contribution funded system from the start; it does not have a first redistributive funded pillar. Thus it has avoided many of the problems with pay as you go systems mentioned above. Singapore’s pension fund is publicly managed, except for the portion that workers have been permitted to withdraw to purchase their own homes. The economic and social returns to home ownership have been substantial—but many retiring workers now find their fund balances are too small to support their consumption needs in old age. Public information is not available on the full returns to the central monetary authority that manages the funds, but the amounts turned over to the individual accounts has been small—even negative in real terms in some years—exacerbating this problem. It is therefore significant that Singapore has recently moved toward greater decentralization of control over the funds, permitting workers to place some of their retirement savings in special bank accounts that they directly manage. According to the above analysis, this move should increase rates of return, improve the allocation of capital, and help develop financial markets in Singapore. Empirical
evidence on how Singapore's new system works in the coming years will help inform the general discussion on pension reform around the world.

**How Have Countries Reformed?**

During the past decade, and particularly during the past five years, several countries have adopted variations on this multipillar system. The three main variations are the Latin American (individual account) model, the OECD (employer-sponsored) model, and the Swedish (notional defined contribution) model. Experience with these variations shows that pension reform is possible, even in democracies, but that it takes somewhat different forms as a result of differing initial conditions and political economies.

For example, different conditions led Argentina to choose a relatively large public pillar, whereas Peru decided against a public pillar. Australia and Chile chose much larger private pillars than did Argentina and Mexico. Switzerland and the United Kingdom built on a history of employer-sponsored plans, Australia and Denmark built on widespread, union-negotiated plans, and Italy and Sweden adopted defined contribution plans that remain largely pay as you go.

One of the most important initial conditions that influences the shape of the reform is the implicit pension debt—

The present value of the pensions that are owed to current pensioners and to workers according to their years of participation in the old system. This debt is inherent in pay as you go systems, where workers expect to get a specified pension in return for their contributions. But assets are not accumulated to cover this debt; instead, the obligation is covered by implicit government IOUs. In many countries the implicit debt exceeds the country's conventional explicit debt (backed by government bonds) and in some cases exceeds 200 percent of GDP (table 1). It is especially large in countries with high coverage, generous benefits, and older populations. Although this debt is not always legally binding, it tends to be socially and politically binding; governments cannot easily renege on these obligations. Countries that do not want to make their debt transparent frequently shy away from reform because it often makes at least part of the implicit debt explicit. Most developing countries have little pension debt because of their low coverage rates and are therefore in the enviable position of being able to change to a partially funded system before the debt becomes unmanageable.

**The Latin American and OECD models**

Chile pioneered the Latin American model in 1980, and its initial success there led Argentina, Bolivia, Colombia, Mexico, Peru, and Uruguay to adopt similar plans in the 1990s. Hungary and Kazakhstan were the first countries outside the region to adopt the model, and it is one of three options proposed by the Social Security Advisory Committee in the United States. In this model each worker chooses the investment managers of his or her individual defined contribution retirement account.

By comparison, the OECD model builds on existing employer-sponsored pension plans. These plans simply became mandatory instead of voluntary in Australia, Denmark, and Switzerland (and de facto by collective bargaining in the Netherlands); in the United Kingdom employer-sponsored plans became an attractive optional alternative to the state plan. Under this model the employer or a combination of employer and union trustees chooses the investment manager for each company or occupational group. These plans thus benefit from economies of scale and financial expertise and possibly from lower marketing costs.
(although this has yet to be proven). The OECD model, however, introduces a principal-agent problem; that is, the employer or union representative selects the investment manager, but the workers bear the risk. The choice may not be in the worker's best interest and may not maximize net returns. For this reason, workers in OECD model plans may ultimately demand more individual choice.

For example, Australia is now permitting workers to put their retirement savings into special bank accounts. In the United Kingdom employers were initially permitted to opt out of the state earnings-related plan, but subsequently workers were given the right to opt out of their employer's plan in favor of their own personal retirement plan. Unscrupulous insurance company salesmen then persuaded workers to purchase individual annuity plans when, in fact, they would have been better off staying in the employer's defined benefit plan. The incident, which led to lawsuits and a government inquiry, illustrates the point that worker choice makes consumer information imperative and opens the door to the probability that some mistakes will be made (Johnson forthcoming).

In most of the OECD model countries cited above—unlike those in Latin America—a modest public pillar with a small pension debt and little or no payroll tax financing was already in place when the new system was adopted. Thus the countries could simply retain it and build the second pillar alongside the first. They had no trouble financing the transition because accrued rights were small and the contributions to the second pillar were added on, rather than being diverted from the first pillar.

For example, Australia had a means- and asset-tested first pillar, financed out of general revenues, to which it simply added a mandatory, employer-based, funded pillar financed by payroll contributions. General revenues also financed Denmark's flat benefit in the public pillar, now being reduced, while an occupational funded pillar was added. In the United Kingdom the state earnings-related pension had been initiated just a few years before Prime Minister Margaret Thatcher decided to end it by encouraging employers and workers to opt out; the accumulated rights were still very small. In Switzerland employer-run plans that already existed in many firms became mandatory alongside the modest public pillar.

In contrast, bloated public pillars in the Latin American countries meant that the first pillar had to be downsized and redesigned to create space for the second pillar. When workers switched to the new system, they were given credit for past service under the old system while part of their future contributions were diverted to the new second pillar. These countries had to find the money to continue paying the promised benefits to current pensioners and older workers (the implicit pension debt) under the old system, while part of the payroll tax flowing in was diverted to funded individual accounts—a problem that has become known as "financing the transition." Most countries that reform in the future will have to solve this problem.

**The Swedish model**

Many countries with large public pillars and implicit pension debts have found it exceedingly difficult to make the transition to a partially funded system with a mandatory private pillar, in part because of the financing problem, but also because of the political interests associated with existing institutions. This explains the third group of reforming countries—those that feature notional defined contribution plans. In this plan the worker has an individual account that is credited with his or her contributions plus interest. The accumulation is notional, however, rather than actual, since the money paid in by workers is immediately paid out to pensioners rather than being invested; in fact, the system remains pay as you go. Upon retirement, the notional accumulation is converted into a real annuity, supposedly on actuarially fair terms. Thus the notional defined contribution plan is essentially a reformed pay as you go pillar (sometimes accompanied by a second, funded pillar).

Sweden developed this system, although it has not yet been implemented there. Shortly after Sweden acted, Italy adopted the system, but with a long transition period. In both countries the first pillar is to be converted into a notional defined contribution plan, buttressed by a redistributive guaranteed pension. In Sweden this pillar will be supplemented by a small second pillar funded at 2.5 percent of payroll. The system is also being implemented by Latvia, which hopes to save enough money from reducing evasion and early retirement eventually to start a funded pillar. Poland plans a new system with a notional defined contribution first pillar and a funded second pillar. Outside of Europe, China has a de facto notional defined contribution system.
In principle China wants to start a second pillar made up of funded individual accounts, but many cities have been unable to finance the transition, so the individual accounts remain largely notional.

The notional defined contribution system was designed to capture some of the advantages of linking benefits closely to contributions within each cohort. Most important, it reduces idiosyncratic intracohort inequities and labor market distortions, including incentives to evade—provided that the notional interest rate is close to the market interest rate. For example, early and late years of contributions receive the same rate of return, and workers with flat age-earnings profits receive the same rate of return as those workers with steep profits; this equity is not true of most defined benefit plans. In addition, linking benefits to contributions makes the system more sustainable and avoids the selection problem that occurs when low-return people evade but high-return people stay in the system.

Furthermore, the notional defined contribution system discourages early retirement because workers automatically receive lower benefits if they retire early; and the costs of early retirement are internalized rather than passed on to others. For the same reason, this system automatically adjusts the retirement age for increased longevity, thereby avoiding the difficult political decision to raise the retirement age, a step that is periodically necessary in defined benefit plans.

The notional defined contribution plan is not inherently redistributive, however, so it does not accomplish the first-pillar task of protecting low-wage earners. For this purpose a redistributive "zero" pillar—that is, a guaranteed minimum pension—must be added. If the redistributive zero pillar is large, however, it may override the link between contributions and benefits that is responsible for these labor market improvements. In Sweden, for example, the high level of the guaranteed minimum pension in the zero pillar makes the defined contribution component irrelevant for a large portion of workers, including most female workers.

A bigger failing is that the notional system does not capture the benefits of funding, because there are no funds. That is, the system serves as the first (pay as you go) pillar and crowds out the opportunity for a large funded pillar. Intergenerational transfers remain, saving is not augmented, and financial markets do not develop. Most important, as the dependency rate increases, the contribution rate would have to increase to keep the system solvent in the absence of prefunding. These younger cohorts may have to "save" a much larger amount for their old age than is optimal for them in order to cover benefits promised to older cohorts. In that case, the incentives for evasion and escape to the informal sector would be strong.

Sweden plans to build a buffer fund to reduce the need for large tax increases as its population ages. But this buffer fund will be a publicly managed overlay, because the individual accounts remain notional. This situation raises all the problems, summarized earlier, concerning political manipulation and poor allocation of publicly managed funds.

How are the notional interest rate and the conversion rate of notional capital into annuities determined? If the notional interest rate is higher than the market rate, it will be a costly guarantee for the government to fulfill. If it is less than the market rate, the contribution is more likely to be regarded as a tax, so labor market distortions are likely to reappear, and pressures may arise for an increase. Typically the interest rate is set equal to some exogenous rate to insulate it from such political manipulation; nevertheless, the possibility remains that a future government will discard this connection and arbitrarily change the rate. Most commonly thus far, the notional rate has been tied to growth in the per capita wage or the covered wage bill—supposedly an equilibrating device. If the wage bill increases, so too do contributions, and therefore the ability to impute interest will be high. This means, however, that when the working-age cohort is large and growing (for example, the baby boomers), the imputed interest rate is high, and the pension debt increases rapidly. But when the working age cohort declines (generation X), so too does the notional interest rate. This younger generation must then pay a high contribution rate to cover the pension debt and will receive a low notional interest rate—fertile grounds for evasion and questionable from the viewpoint of intergenerational equity. Thus using wage bill growth as the notional interest rate does not appear to be an equilibrating device.

The conversion factor into annuities supposedly depends on expected longevity upon retirement. Because the process is notional, however, it too is highly subject to political manipulation. For example, the government can decide to grant notional credit for noncontributing years (a common problem in old pay-as-you-go defined benefit systems), it can
impute a low or a high future interest rate into the calculation, and it can fail to adjust the conversion factor when life expectancy increases. In the absence of market discipline, implicit taxes or subsidies can creep in that interfere with the labor market efficiency effects of the new system. Because the government sets both the conversion factor and the interest rate, the notional defined contribution may be thought of as a pay as you go defined benefit in which the benefit is defined in a new way.

In sum, the notional defined contribution system is attractive to countries that have very large implicit pension debts, especially those that are unwilling to incur an explicit fiscal deficit to pay off these obligations. It may be a politically convenient way to reduce benefits in inflated programs and to equalize the retirement age for men and women (as in Latvia). In such cases it may lay the groundwork for savings that eventually enable the growth of a funded second pillar; but until that happens, it should be recognized as a reform of the first pillar rather than as an introduction of a multipillar system. (For details on the Latvian reform, see Fox 1998; on Poland, see Rutkowski 1998; and on Italy, see Hamann 1997).

**How Have Countries Financed the Transition?**

When countries with a large pay as you go pension debt shift to a multipillar system that includes a funded component, some of the contribution usually is shifted to individual accounts. Some other revenue source must then be found to cover the resulting financing gap between the remaining revenues and the expenditures needed to pay retirees. The only countries to have experienced this problem are those that have followed the Latin American model. How did these countries finance the transition? Three basic methods were used: reducing the value of the pension debt and the financing gap, finding alternative revenue sources to pay it off, and, finally, resorting to the general borrowing and taxation powers of the treasury.

**Reducing the implicit debt and the financing gap**

The implicit social security debt and the gap between payroll taxes and expenditures can be reduced in several ways. First, a country can take certain steps before the transition, such as downsizing benefits provided under the old system, raising the retirement age and the penalties for early retirement, tightening eligibility for disability benefits, and changing the indexation method to price indexation, so the outstanding debt, whether implicit or explicit, will be smaller. Argentina, Chile, and Uruguay followed this strategy, which may be indispensable to a good pension reform. It cuts the benefits that must be paid to those who stay in the old system, as well as the compensation owed to those who switch to the new system, and it increases the probability that workers will switch. Otherwise, there is a risk that the government will pay excessive amounts for benefits that never should have been promised in the first place, and it will be more difficult than before to escape from these promises.

Second, the government can acknowledge the value of the pension earned thus far by issuing a recognition bond (as in Chile) or a promise of a compensatory pension (as in Argentina) to each worker who switches to the new system. This step postpones the day when cash will be needed, because the recognition bond cannot be cashed until the worker retires, and the compensatory pension is gradually paid off over the entire retirement period of the worker. Besides extending the payoff period, the issuance of the recognition bond provides another opportunity to reduce the debt. A legally binding piece of paper, the bond gives the worker greater certainty that the pension debt will eventually be repaid, and in return for reducing uncertainty, the government can downsize the face value of or interest rate on the bond (as in Peru). The face value can be further reduced if workers have more faith in the new system than in the old one; they (especially young workers) will then be willing to switch even with little compensation for their past service. By choosing the minimum terms that are needed to convince the desired number of workers to switch, a government can substantially downsize the recognized debt and save on its transition costs (as in Hungary).

Third, a government can keep workers—and their contributions—in the old system. This may be accomplished by excluding some workers, such as the military or the police, from the new system (as in Chile). Argentina gave all workers a choice but made the new system attractive mainly to young workers. Colombia operates the old system side by
side with the new one, and workers are permitted to switch back and forth. In Uruguay the new funded pillar is compulsory only for rich and young workers and is voluntary for others. The financing gap is reduced because those employees who remain in the old system continue to contribute to it. The serious danger with this option is that, in an effort to solve a short-run cash-flow problem, these countries have increased their long-term implicit debt by keeping participants in a financially unsound pay as you go system; this solution may turn out to be unsustainable.

Fourth, a government can retain a large pay as you go component in the new system, so that some revenues continue to flow into the public pillar. Argentina offers a moderate flat benefit in its new public pillar rather than the narrower minimum pension guarantee used in Chile. In Argentina about 60 percent of the total contribution flows into the public pillar. In addition, workers can choose between a funded and a pay as you go option for the second pillar. The inflow of funds to the first pillar and the pay as you go second pillar help pay current pensioners and, eventually, the compensatory pension. But if either pillar offers benefits that are too generous (actuarially unsound), the reform will not be sustainable in the long run—a danger that Argentina faces.

Finding alternative revenue sources

Governments can also pursue policies to offset the revenue gap. One way is to use an existing treasury surplus to pay off part of the pension debt. Chile took this path, but most countries are burdened with fiscal deficits rather than surpluses. Alternatively, countries that have a surplus in the social security system can use it to pay off part of the debt. The Latin American systems generally did not have a surplus, but the U.S. social security trust fund could be used in this way if the United States were to make a transition. In cases where public enterprises are being privatized, some of the proceeds can be used to pay off the pension debt—a cancellation of long-term assets against long-term liabilities. Peru followed this strategy, Poland is considering it, and Bolivia is using privatization assets for pension reform.

Measures that reduce evasion and increase coverage will increase system revenues. Although Argentina’s plan incorporated such measures, no reduction in evasion has yet materialized. China is considering financing the transition by bringing all workers in township and village enterprises (a rapidly growing group) into the new partially funded system. This expansion of coverage would help to pay off the accumulated pension debt but also would create new debt to cover the newly enrolled workers who will eventually demand their pensions. If the cross-subsidy is high, it will encourage evasion; if it is low, the gain is only temporary. Thus this strategy produces short-term revenues but runs the risk of undermining the long-run sustainability and credibility of the plan.

Using general borrowing and taxation

General treasury borrowing can be used to cover the cash gap in the short run. Because money is fungible, it is not clear to what extent resources for pension reform have come from debt as opposed to other general revenue sources, but government borrowing has usually increased in the early years of reform. In countries with a large implicit pension debt, the use of temporary debt finance is almost inevitable to mitigate the heavy double burden of taxation on the transition generation of workers. Some of this debt may be sold to the pension funds in the new second pillar; government debt and bank deposits have been the largest initial investments of the new pension funds. An important proviso is that government bond sales should be open, transparent, and carry the market interest rate. Pension funds should not be compelled to purchase government bonds.

All Latin American countries limit pension funds’ overseas investments, however, which virtually ensures that they will have large investments in domestic government bonds.

Is this temporary debt finance problematic? Financial markets might react negatively if they were not previously aware of the size of the implicit pension debt, or if they believed the obligation to repay it was “soft” and has now become “hard,” and if either of these beliefs increases the expected default risk on regular bonds. Two pieces of evidence suggest that, so far, the financial market response has been positive. First, the International Monetary Fund recently adopted the position that debt finance earmarked for a pension transition should be allowed beyond the permissible ceiling for other debt, because it is a swap of explicit for implicit debt in the short run and is intended to reduce...
the overall debt and will thus improve fiscal solvency in the long run. Second, for much the same reason, Hungary’s credit rating from Moody’s improved after it adopted its pension reform, even though the reform entailed an increase in the explicit debt.

Eventually, the debt should be paid off through taxation. Otherwise there will be no increase in national savings (additional private saving will be offset by additional public dissaving if the implicit debt is simply changed to an ongoing explicit debt). The redemption of the debt through tax revenues can be spread over a long period—but the longer the payoff, the slower the benefits of increased national saving for productive investment. It has been estimated that if half the current pay as you go system in the United States were converted to a funded system, it would take 70 years to pay off the financing gap with a payroll tax rate of about 1.5 percent (Gramlich 1996); it would take roughly the same amount of time in China (Friedman and others 1996).

**How Large Are the Efficiency and Growth Effects of Alternative Systems?**

The chief theoretical argument for the recommended multipillar system is that it will have a positive effect on efficiency and growth because the old system introduced—or failed to remove—distortions that the reforms will eliminate. A second argument is that the multipillar approach will enhance the financial sustainability of the old age system and thereby provide better protection for the elderly in the long run. A third argument is that it will improve intergenerational equity.

Efficiency and growth effects are notoriously difficult to quantify and prove, in part because relatively little experience and data are available and in part because, even with the data, it would be difficult to build models that capture all the complex dynamic interactions—that is, it is difficult to specify the counterfactual. Pension reform has several different potential efficiency effects; studies usually focus on one of these while ignoring or holding the others constant. For example, general equilibrium models that analyze labor supply effects often assume perfect capital markets and thereby limit the predicted increases in savings, and vice versa. In this section I summarize the limited empirical research that has been done on these topics, concentrating on the simulated effects in countries that have been considering structural reforms and econometric estimation of the actual effects in Chile, the country that has the longest track record with a reformed system. In general, the beneficial labor market effects come from shifting to a defined contribution system from a defined benefit plan; the beneficial effect on savings comes from shifting to a funded old age security plan from a pay as you go system; and the financial market effect comes from managing these funds privately.

First, a brief comment on the distinction between efficiency and growth. Greater efficiency, for example, due to a reduction in labor market distortions, increases output. If some of the increased output is plowed back into investment, as would often be the case, growth also increases. Growth can also be increased without an increase in efficiency. For example, an increase in savings (and consequently growth) may simply indicate an intergenerational or lifecycle redistribution that does not increase efficiency because it does not make (or have the potential to make) everyone better off. But such an increase enhances efficiency if the initial rate of saving was suboptimal because of public or private myopia or because of a tax wedge between private and social returns to investment. Both of these conditions are usually alleged as a justification for mandatory retirement saving plans, in which case they would expand both efficiency and growth.

**Avoiding labor market distortions**

One problem in pay as you go defined benefit systems is the possibility that the high payroll tax will lead to labor market inefficiencies (stemming from distorted decisions about labor force participation, age of retirement, hours worked, choice of job and location, degree of effort, form of compensation, and so on), whereas the contribution in a defined contribution system may be regarded as saving rather than as a tax. Only fragmentary evidence is available about the effect of pension reform on most of these actions. For example, Wise (1997) shows that the labor force participation rate of older men is highly sensitive to the implicit social security tax on labor, stemming from the absence of actuarial penalties on early retirement—the loss of generous defined benefits during years when they continue working.
induces most workers to stop working before they reach 60. Countries that have a larger actuarial adjustment in their systems, and hence a lower implicit tax on labor, have higher labor force participation rates of older men. Funded defined contribution plans automatically build in this actuarial adjustment, so by extension they should deter early retirement and its negative impact on GDP and the financial solvency of the scheme.

The distortionary labor market effects of traditional systems may be larger in developing countries because escape to the informal sector is easier there, both for workers and their employers. Productivity in the informal sector may be lower because firms have less access to product and credit markets or because technological change is embodied in capital in the formal sector and has an external effect on labor productivity throughout the economy (as discussed in the endogenous growth literature). In addition, regulations that set a minimum wage and other benefits in the covered sector may lead to a wedge between wages and productivity in the formal versus the informal sectors. In simulations for a representative economy, Corsetti and Schmidt-Hebbel (1997) show that a payroll tax rate of 20 percent could cause a massive (47 percent) shift to the informal sector, thereby reducing economywide growth by more than 1 percent a year. In many Latin American countries the informal sector and small firms in the quasi-informal sector do indeed absorb more than half of the labor force (ILO 1996). Although many other forces are at work, a shift to a defined contribution system, where benefits are closely linked to contributions, might reduce these incentives for informality.

What light does Chile's experience throw on this issue? Between 1980 and 1990, when the average share of informal employment in Latin America increased from 26 percent to 31 percent, it dropped from 36 percent to 31 percent in Chile. Unemployment in Chile fell and wages rose. Edwards (1997) shows that, given reasonable assumptions about the elasticity of labor demand in the two sectors, the pension reform was responsible for a decline of between 2.2 and 3.6 percent in unemployment and an increase of 5 to 8 percent in wages.

In evaluating these numbers and their applicability to other countries, it is important to realize that a shift to defined contribution may not always have this salutary effect. For example, myopic workers may continue to evade contributions because they will not have access to their mandatory savings for many years. In periods when investment returns are low, workers may be especially tempted to evade, preferring to consume or to invest in education, housing, or consumer durables. In Chile returns have been high (more than 12 percent during the first 15 years), encouraging compliance of most workers. If the payroll tax for pensions is only a part of the total payroll tax, the incentive to escape to the informal sector may remain strong; again, this phenomenon did not apply in Chile, where the total payroll tax was relatively small. Indeed, preliminary evidence from Argentina suggests that evasion has not declined since the new system was established (Valdes-Prieto forthcoming). In contrast, Chamorro (1992) and Schmidt-Hebbel (1997) found that only 3 percent of potential contributors in Chile had dropped out of the system. (Chile does not attempt to cover the self-employed, who make up the largest share of evaders in other countries.) It is difficult to be conclusive about this, because it is hard to separate evasion from normal labor force withdrawals and exogenous shifts into self-employment.

Escape to the informal sector under a funded defined contribution plan does not have the same negative effects on the system's sustainability as it does under a pay as you go defined benefit plan, because the costs are borne by the worker in the form of lower benefits rather than passed on to others in the form of a higher contribution rate. This is a big plus. Nevertheless, it still creates the same problem for labor allocation and productivity and an even greater problem for workers who may not have an adequate pension and may become a charge on the public treasury when they grow old. So although the initial evidence from Chile is encouraging, it is important to analyze the data on evasion, wages, and employment carefully to determine whether these results are robust and generalizable.

Increased national saving

A major rationale for fully funded pension plans is that they increase long-term national saving, with positive effects on growth and efficiency. Such saving is important because most savings stay in the country of origin and most of a country's productive investment comes from its own saving, despite the development of global capital markets.
When a country without a prior pay as you go system institutes a multipillar system, consumption will decrease and saving will increase if the mandatory saving rate exceeds the voluntary rate. When a country with an existing pay as you go system replaces it with a multipillar system, national saving increases if benefits are cut or taxes are increased, usually to cover transition costs. In both cases, putting part of the contribution into the worker’s own mandatory savings account may be more politically acceptable and less economically distortionary than increasing saving through high taxes that go into the general treasury.

But this increase might not materialize. Mandatory saving may not increase total private saving if individuals find ways to offset required saving by reducing voluntary saving or accumulated assets. In that case, capital may increase in the mandatory pillar but decline in the voluntary pillar. With perfect capital markets, private saving will not increase at all, because people will simply borrow against their mandatory pension saving. A positive saving effect ultimately depends on the assumptions that voluntary long-term saving and assets are small and that borrowing opportunities are limited for substantial groups within the population. The low-asset condition probably holds for most slow-growing economies, the limited borrowing condition for most developing countries, and both conditions for low-income households in most countries.

Public saving matters as well as private saving. On one hand, pension reform may reduce public dissaving because governments no longer need to borrow to cover escalating pension costs. But on the other hand, it may increase public dissaving if the buildup of pension reserves relaxes fiscal discipline and makes it easier for governments to run large deficits. If the transition is fully financed by borrowing, government dissaving will offset private saving, and the expected increase in national saving will simply not occur. But if it is financed through taxes or cutbacks in other government expenditures, public saving increases national saving. Estimating the impact on public saving therefore requires modeling government behavior—how governments will behave after pension reform and how they might have behaved in the absence of reform.

Several simulations have projected the impact on saving of a shift to a fully funded scheme. Not surprisingly, the results turn out to be highly dependent on the assumptions, especially the assumptions about the crowding out of voluntary saving and the method of financing the transition. Underlining the importance of the former, simulations of a representative economy indicate that a tax-financed transition to a fully funded system in the presence of credit constraints on consumers (implying low crowd-out) will increase output by 22 percent and welfare by 16 percent in the long run, while the gain is only 2 percent without credit constraints (Cifuentes and Valdes-Prieto forthcoming).

In planning its new funded pillar, Australia assumed that half of the mandatory saving would be offset by reduced voluntary saving (the crowding-out effect) in the case of newly covered workers and even more for workers who were already covered by voluntary occupational plans. This assumption implied that when the contribution rate reached 12 percent, national saving would rise by 1.5 percent of GDP, almost doubling the current net national saving rate, which is 2.2 percent of GDP. The gross national saving rate is about 15 percent of GDP. Australia did not have to borrow to pay off a pension debt because the second pillar was an add-on rather than a diversion of previous contributions. Although the tax deductibility of contributions was initially projected to cause some government dissaving, in the long run the decreased burden on the means-tested public pension is expected to reduce government dissaving. One of the main effects of the reform may be to shift the allocation of private saving away from home ownership, which is now the predominant investment because of tax inducements, and toward other, more productive investments (Bateman and Piggott forthcoming).

In simulations for Mexico, Ayala (1996) assumes a 30–40 percent rate of crowding out. If the transition is tax-financed, or if it is debt-financed and Ricardian equivalence holds (so that private saving goes up to offset public dissaving), total saving rises by 0.4 percent to 2.1 percent of GDP, a magnitude similar to that expected in Australia. If the transition is debt-financed and Ricardian equivalence does not hold, the impact on total saving is much smaller, even negative in some years, although positive overall during the next 30 years.

Only Chile has had a mandatory saving plan long enough to permit an estimate of its effects. Data from Chile are problematic, and the savings ratio is erratic, complicating the analysis and making the results highly sensitive to the
starting date for comparisons. According to Corsetti and Schmidt-Hebbel (1997), private saving as a percentage of GDP increased from almost zero in 1979–81 to 17 percent in 1990–92, while private consumption decreased commensurately. Their reduced-form two-stage least-squares regressions attribute half of the decline in the private consumption ratio to the growth of Chile’s funded pension plans and correlated developments, such as capital market deepening. Time series regression analyses by Haindl (1996) indicate that pension reform accounts for 6.6 of the 9.9 percentage point increase in the national saving rate in Chile (from 16.7 percent of GDP 1976–80 to 26.6 percent 1990–94). Of the 6.6 point increase, 3.1 points were attributable to the direct impact of pension saving; the remaining 3.5 points were attributable to the financial market deepening caused by the pension fund (4.2 points), offset slightly by a crowding-out effect caused by borrowing constraints (0.7 points). Using an error correction model, Morande (1996) also finds a significant positive effect of a pension fund dummy on private saving from 1960 to 1995. He speculates that the financial market deepening caused by pension reform may have made voluntary saving less likely to be crowded out by, and therefore less sensitive to fluctuations in, foreign saving, thus making the country’s supply of investible resources less dependent on foreign capital.

Agosin, Crespi, and Letelier (1996) are more skeptical; they find that increased private saving resulted from an increase in corporate saving, from 6 percent of GDP in 1978–85 to 23 percent in 1994—a response, they believe, to the lack of foreign credit and the privatization of public enterprises. (Of course, privatization was itself facilitated by the pension reform, illustrating the complex interactions among these variables.) Voluntary household saving was negative (about 4 percent of GDP) throughout this entire period, indicating consumer dissaving or borrowing. Forced saving through the new pension system gradually grew to almost 4 percent of GDP, however, and was not offset by greater voluntary dissaving (presumably because credit constraints had already been exhausted). This 4 percent magnitude is roughly consistent with the findings of Bosworth and Marfan (1994) that pension reform increased saving by 3 percent of GDP. The risk remains that the growth of consumer credit, possibly fueled by the pension reform, could increase consumer dissaving and offset some of these gains in the future (Holzmann 1996).

Instead of focusing on enhanced private saving, other studies emphasize the impact of pension reform on public saving and dissaving. Chile financed a pension transition in part through deficit finance, which decreased national saving. The fiscal costs of the transition may have canceled out the positive effect on private saving initially (Agosin, Crespi, and Letelier 1996). Observing that the pension-related deficits of the government (payments to pensioners from the old system plus redemptions of recognition bonds for new pensioners who had switched) were larger than the inflows to the new pension funds until 1989, Holzmann concludes that during the 1980s the new pension system had a negative effect on national saving. He appears, however, to overlook the fact that redeemed recognition bonds became part of private pension saving and were not immediately consumed. Correcting for this point alone generates a positive savings effect as early as 1985.

More important, a simple accounting exercise neglects the disciplining effect that pension reform might have had on other government taxes and expenditures. Chile ran an increasing surplus during this period, possibly to help cover the transition costs. Since 1987 the consolidated government budget has been in surplus, which quickly exceeded 5 percent of GDP. In addition, Chile accumulated a large budgetary surplus in preparation for the reform, thereby reducing its need for deficit finance. How large the current or past surplus would have been otherwise is unknown, but to the degree that the pension reform was financed by increasing general taxes, cutting other public spending, or accumulating a prior surplus, transition costs did not decrease public saving. Moreover, the transition costs are short run, while the increased private saving may persist in the long run. As a result of all these factors, total national saving in Chile is much higher than it was before reform.

Given the high correlation between pension reform and other policies that are often simultaneous, the controversy surrounding the determinants of private saving (for example, which variables are endogenous?), and the even greater uncertainty about the determinants of public saving (what is the counterfactual?), all these econometric and simulation results are highly sensitive to the model’s specifications. Nevertheless, preliminary evidence indicates that pension
Financial market development

One reason for favoring private management of pension funds is that it will develop a set of financial institutions—investment managers, insurance companies, and banks—that are essential for economic development. A funded pillar, if competitively managed and well regulated, can enable the financial market to grow in safety, size, depth, and complexity. In developing countries, where private saving is already high, one of the main effects of a funded pillar may be to shift savings out of land and jewelry and into long-term financial market investments that are better for the broader economy.

Even in Australia the financial market is expected to grow as a result of the mandatory second pillar. As noted earlier, some private saving may be redirected out of owner-occupied housing into the financial markets. Insurance companies are expanding, developing new products (including annuities) to meet the anticipated demand stemming from pension funds (Bateman and Piggott forthcoming). In Switzerland the growth of the life insurance industry, investment companies, and mutual funds has been spurred by mandatory funded pension plans. And corporate governance has been gradually changing, as institutional investors have demanded disclosure and better performance (Hepp forthcoming). All these changes enhance efficiency.

But the strongest evidence for this expected growth effect comes from Chile. During the five years preceding the adoption of its new system, Chile prepared the groundwork by organizing a primary market for treasury bonds, reforming the laws governing mutual funds, corporations, and securities, privatizing banks, authorizing a price-indexed mortgage bond market, and liberalizing the provision of insurance and reinsurance (Valdes-Prieto forthcoming). Once the system was introduced, this process continued: financial markets became more liquid as stock market trades increased, demand was created for the equities of newly privatized state enterprises, information disclosure and credit-rating institutions developed, the variety of financial instruments grew, and asset pricing improved. In several of the studies summarized above, the financial market deepening associated with pension reform was given credit for the observed increase in private saving. Econometric analysis suggests that financial market efficiency induced by the pension reform (and related factors) increased total factor productivity 1 percent a year, or half of the increase in total factor productivity (Holzmann 1996). This effect on financial market development may be of particular interest to Singapore.

In sum, a small but growing body of empirical evidence indicates that pension reform has produced positive efficiency and growth effects. That is, the impact on saving, productivity, output, and welfare may be high relative to exogenous sources of growth and other policies available to increase growth.

Several caveats are essential in interpreting this evidence. First, because specifying the counterfactual is difficult, these results are highly sensitive to the assumptions that are made. In particular, the econometric analyses for Chile are subject to omitted variable bias, and the simulation results depend heavily on assumptions about crowding out, transition costs, and rates of return. Second, the growth impact also depends on key policy decisions in setting up the new system, such as the question of how high the required contribution rate will be, the proportion of the multipillar system to be funded and the defined contribution, and how the transition will be financed. Debt finance may be necessary for political purposes, but some degree of tax finance is necessary to meet economic objectives, and some taxes have better efficiency properties than others. Third, it is important to remember that, even if it claims to use a general equilibrium model, each study typically deals with only one possible source of growth, so many of these results are partially additive—that is, the total growth effect is the sum of the separate effects on labor market distortions, early retirement, escape to the informal sector, capital accumulation, financial market development, and other sources of growth. So if each separate effect increases GDP in amounts ranging from 1 to 10 percent, their sum may increase GDP much more.

New Problems and Issues for Further Research

Although many efficiency gains seem to have been achieved, the new systems have also created problems that must be
solved and identified related research that needs to be done. The problems involve high administrative costs, financial market distortions, and distributional effects.

**Administrative costs**

The big advantage of private investment over public is the likelihood that it will produce a better allocation of capital and therefore higher returns for the fund and growth for the economy. Decentralized systems also may charge high administrative fees, however, partly because of high marketing costs in competitive industries. Costs sometimes produce important side benefits—such as consumer information and increased compliance—but this does not appear to be the case in most countries that have recently reformed.

Preliminary evidence indicates that workers are ill-informed and do not make decisions based on investment returns, and that pension funds incur high sales commissions and other marketing costs to attract them. In Chile and other Latin American countries fees are front-loaded, meaning that workers pay a one-time fee on new contributions rather than an annual fee based on assets. (This system was probably adopted because the new system had no assets initially.) This one-time fee is about 2 percent of wages or 15–25 percent of new contributions, and about one-third of this is for marketing.

These numbers appear very high. To understand their impact on net returns, these one-time charges on contributions must be converted into their equivalents in annual charges on assets, a conversion that depends on how large the assets are relative to the contributions. Obviously, for accounts that have small accumulated assets (young workers with few years of contributions), the one-time fee will be high relative to assets. For accounts that have built up substantial assets, however, the fee will be small relative to assets.

Simulations show that if the current fee schedule is maintained, the average Chilean worker who contributes for 40 years will pay the equivalent of less than 1 percent of assets per year. This is about the same amount mutual funds charge for voluntary retirement savings accounts in the United States; it is not excessive from the lifetime point of view, in comparison to a competitive market retail price for individuals. Moreover, it is not excessive in comparison to a less expensive system that produces much lower gross and net returns (such as publicly managed reserves in Singapore and the U.S. social security trust fund). Competition may lower costs further in the long run.

Nonetheless, this fee structure is an apparent problem in the early years of a new system, when all accounts are small. It is a real problem for workers who will be in the system for only 20–30 years, such as workers who were relatively old when the system was reformed; simulations show that these workers pay a much higher lifetime fee as a percentage of assets. It is a problem for transient workers who move in and out of the labor force, such as women, because they may never have a chance to accumulate 40 years of contributions. The higher lifetime fee as a percentage of assets and hence the lower net return received by these groups raise equity concerns in a mandatory system. On both equity and efficiency grounds, it is questionable whether the government should compel all workers, including those who are risk averse, to incur these costs with certainty while the benefits are uncertain. Besides the equity consideration is the practical consideration that high costs may lead those groups most affected to evade. Moreover, it would be desirable to find ways to increase administrative efficiency for all workers to increase their rates of return and replacement rates.

Some analysts believe that administrative costs would be lower under a group plan, and they thus favor choice by employers or unions. Such group plans may be better positioned to benefit from economies of scale in decisionmaking, greater financial expertise, and lower marketing costs (see James and Palacios 1995 and Mitchell 1996). This is one reason employers or unions choose the investment manager in OECD model countries. Because employers or union representatives make the investment decision while workers bear the risk, such plans can also open the door to financial abuse and principal-agent problems: employers might choose investment managers or strategies that benefit them even if this implies lower returns for their workers.

For example, lower "wholesale" charges appear to be available for large group [401(k)] plans in the United States, but not all employers have gone to the effort of obtaining these rates. In Switzerland employers tend to place retirement funds at banks with which they have longstanding financial relationships, without exploring other options care-
fully (Hepp forthcoming). One of the worst cases of employer abuse of worker retirement funds was the Maxwell scandal in the United Kingdom. But, as noted, individual choice also led to a scandal in that same country, as uninformed workers were induced to abandon their employers’ plans and purchase financially disastrous policies by unscrupulous insurance company salesmen (Johnson forthcoming). Basing the second pillar on occupational plans is especially a problem for mobile workers, who may end up with many small costly accounts unless these can be consolidated in one personal account.

Anecdotal evidence about costs and returns to group choice versus individual choice is available but a careful empirical study has yet to be done. Meanwhile, the principal-agent problem makes it likely that political pressures will develop to give workers the right to opt out of employer pension plans into their own personal retirement savings plan in most mandatory systems; this has already happened in Australia and the United Kingdom.

A third alternative may be desirable in small countries where economies of scale do not allow markets to support many pension companies efficiently, in countries with undeveloped financial markets that want to attract investment expertise and minimize startup costs, and in countries with low contribution rates to the second pillar. Instead of open entry, the government might auction off operating rights to a limited number of investment companies, among whom workers then choose. The contract could specify that maximum risk, offer a reward for high returns, and choose the winners based on who charges the lowest administrative fees.

The voluntary Thrift Saving Plan for U.S. federal employees uses a competitive bidding process to choose its money managers, at a total cost of less than 10 basis points (0.1 percent). An auction process was recently used in Bolivia, which as a result expects to have much lower administrative costs than Chile does to all qualified pension plan fund managers willing to abide by that limit. Sweden will use a variation on this theme for its new second pillar—centralized collection and record-keeping, while workers choose among mutual funds that have reached an agreement on fees with the central agency.

The dangers here are the difficulties in insulating the auction and investment process from political manipulation, corruption, and collusion, and the importance of incorporating incentives for good performance when entry and price are limited. Moreover, these mechanisms may feature lower investment returns and less consumer education and service along with lower marketing expenditures. The advantages are that much lower costs, allowing an increase in rates of return and replacement rates of as much as 20-40 percent, can be achieved if the process is handled well.

To sum up, one could construct a continuum with considerable choice, competition, political insulation, and relatively high administrative cost on one end and limited choice and competition with lower costs on the other end (Bolivia, Sweden, and the U.S. Thrift Saving Plan), with each arrangement having different implications for political insulation, rates of return, and other kinds of service. Countries could then choose the mix of costs and benefits they prefer. Thus many additional measures can be and are being considered to economize on costs, and their effects should appear over the next decade. The impact of alternative institutional arrangements on administrative costs in the second (decentralized funded) pillar has heretofore received little attention. We could certainly benefit from careful analytic and empirical studies in this area.

Financial market distortions

Multipillar systems have justifiably been given credit for stimulating the growth of financial markets in middle-income countries and thus promoting economic growth. As these systems have been implemented, however, they have distorted the operations of financial markets in various ways. This problem results because policymakers want workers to make investment decisions and bear the corresponding risk, but they also want to limit this risk to avoid a disaster. Relatedly, the government must set certain investment constraints and offer guarantees to overcome political opposition to reform. The contradiction here can potentially lead to malfunctioning markets, particularly if pension funds are large players in the market.

This ambivalence can be seen in Chile and several other Latin American countries where pension funds are heavily penalized if they deviate more than 2 percentage points from the group mean. As a result funds have been accused of herding behavior, as each tries to look much like the
others. Rather than having a choice of different points on the risk-return frontier, stemming from differing asset allocations—as would be the case in a well-functioning financial market—workers have the much less meaningful choice of companies that provide the same asset allocation and risk-return mix. Because workers are required to invest in one fund instead of diversifying among several and thereby reducing their risk, the lack of meaningful portfolio differences among them means that gains from diversification would be small in any event.

In Mexico all workers are required to enter the new system, but those currently in the labor force may return to the old pay as you go system upon retirement if they will fare better under it. This option was included to acknowledge the "acquired rights" of workers and avoid a legal challenge to reform efforts. But it creates an obvious moral hazard problem: workers have an incentive to gamble with their pension funds, accepting too much risk because they are substantially protected from loss. The Mexican authorities have avoided this problem by greatly limiting the choice of investment strategies: at least 65 percent of all assets must be invested in government bonds (currently the funds have 99 percent of their assets in government bonds), and international investments are proscribed. Because workers have no real choice of portfolios, moral hazard is avoided; but the flow of pension funds to the financial market and the private sector is also avoided.

Bolivia initially intended to invest most of its revenues from privatization (targeted for pension reform) abroad, to protect it from excess government borrowing and other country-specific risk. To overcome union opposition to the reforms, however, the government had to pay off the implicit debt of the complementary pensions that unions had negotiated in the past. To cover these and other expenditures, the final arrangements decreed that initially almost all of the privatization assets would be invested domestically, in government bonds. In Uruguay, to help cover transition costs, pension funds are required to put at least 80 percent of new assets in special government bonds. Although the risk-reducing benefits of international diversification and diversification into private sector securities is one of the rationales for pension reform, most countries end up requiring or strongly encouraging almost exclusive domestic investments, with a heavy concentration in government bonds.

Regulations in Switzerland require a 4 percent nominal guaranteed rate of return in the country's second pillars, resulting in very conservative investments consisting largely of bonds. Until recently providers of second pillar pensions for civil servants in the Netherlands faced little competition, again leading to low rates of return that might have been off or at a corner of the risk-return frontier.

These distortions should not be exaggerated, because the guarantees and limits on competition and portfolio diversification are likely to fall as the schemes mature. Chile started with rigid restrictions but has gradually opened up the system to greater diversification, including international investment. Mexico is considering allowing each pension fund to offer more than one portfolio, together with worker diversification among portfolios. Another possibility under consideration is to allow pension funds to differentiate their asset allocation strategies and corresponding benchmarks (if available), applying different risk limits depending on the type of portfolio chosen. For example, the Thrift Saving Plan in the United States offers portfolios that concentrate in bonds, stocks, and international investments, with different degrees of risk implied by each. This choice allows workers to pick their preferred point on the risk-return frontier and should help the financial markets to operate better. But it also requires substantial worker education as well as greater diversity of financial instruments than currently exists in many developing countries.

Distributional effects

Although this paper has focused on the efficiency and growth effects of pension reform, an equally important topic is the impact of reform on equity. Because traditional pension systems are typically both inefficient and inequitable, reforms offer an opportunity to improve both. Which multipillar systems have actually succeeded in achieving a better distributional outcome is not known, however. Closer examination suggests that the devil is in the details, and some of the results may be surprising.

In Chile's public pillar, for example, workers are eligible for a minimum pension guarantee of about 27 percent of the average wage after 20 years of contributions, meaning that the government tops up the benefits of these work-
ers to the guaranteed point if their own accumulation does not suffice. The main beneficiaries here will be lower earners who worked only 20 years, disproportionately females (who have limited labor market attachment), while workers who remain in the formal sector for a full career are unlikely to receive this subsidy. In contrast, in Argentina a flat benefit of about 28 percent of the average wage is paid to all workers who have at least 30 years of contributions (plus an additional 1 percent for every year above 30 up to 45). The main recipients will be workers who spent most of their adult lives in the formal labor sector, and (in sharp contrast to Chile) women are unlikely to qualify. In the United Kingdom, which pays a flat benefit about half the size of Argentina’s (as a proportion of the average wage) but does not set a required number of contributory years, the big gainers are people who work few years and live long lives, such as women.

The setup of the second pillar also has distributional consequences. If flat fees per account are permitted, net returns are reduced for low earners more than for high earners. Flat fees were charged by Chilean funds initially, but the unfavorable publicity they encountered was one factor leading them to drop this practice. Some funds in Mexico now use flat fees. If low-income workers tend to choose more risk-averse investment strategies than high-income workers, they will have lower replacement rates in the future. The distributional issue is explored further in a separate paper (James 1997) and merits additional empirical research.

Conclusion

Averting the Old Age Crisis (World Bank 1994) argued that old age security systems with a large funded defined contribution component, decentralized competitive fund management, and a social safety net are most likely to promote economic growth, provide acceptable income to the old, and reduce risk through diversification. Over the past five years the move toward multipillar systems has accelerated. With the aging of the global population, it has become increasingly important to choose a reliable and cost-effective method of old age support. As economic growth slows and financial markets open up, it has become increasingly important to raise productivity through better incentives in the labor market and through the accumulation of capital that can be allocated to its most efficient uses. To reduce income disparities, it has become increasingly important to provide additional protection to low-income wage-earners who have grown old. A multipillar system that includes a mandatory, publicly managed, tax-financed defined benefit pillar for redistribution, a mandatory, privately managed, funded defined contribution pillar to manage peoples’ retirement savings, and a voluntary pillar for people who are willing to pay for more security, has seemed to many countries the most likely way to accomplish these objectives.

Malaysia and Singapore, which have long had single pillar, funded, direct contribution schemes, have moved toward decentralization by allowing workers to exert greater control over part of their retirement funds. Moreover, several Latin American, OECD, and transition countries have adopted multipillar systems, and they are under serious consideration in many more. Preliminary evidence from Chile, the only country that has had this system long enough for empirical studies to be conducted, supports the existence of a positive growth effect, stemming from increased labor market efficiency, mobilization of long-term saving, and financial market development.

Countries with a large implicit pension debt and an accompanying set of social security institutions are having trouble overcoming political opposition and financing the transition to a funded system, however. Developing countries are fortunate in that they are at a relatively early stage and can choose a preferred multipillar system almost from the start, before these obstacles arise.

References


Financial Security in Old Age: A Case Study of Singapore

Linda Low and Aw Tar Choon

Financial security in old age is a multidisciplinary concern—one that differs according to whether old age security is adequate or inadequate. Old but rich voters exert demand on politicians commensurate with their perceived needs and tastes. Those with sufficient means to live longer and more comfortably look to medical science and technology for salvation. As consumers, they want services that are both convenient and skilled (Herzlinger 1997). So long as these voters have the resources to command attention, politicians will attempt to fulfill their desires.

Solving problems of financial inadequacy and insecurity involves balancing scarce resources among the competing wants of the elderly and the rest of society. This is an age-old concern, and different civilizations have dealt with older people differently. But in recent years the problem has taken on greater magnitude, urgency, and scope because of several paradoxes.

One is that, as health conditions improve with advancements in nutrition, medicine, and technology, longer life spans may not always mean a higher quality of life for the elderly. Unless the elderly are able to work longer or have sufficient savings to cover more years of their lives, their living standards may fall in their twilight years.

Another paradox is that, with lower fertility rates, the relative number of elderly is on the rise, accentuating the burden of care for them. Welfare states using a pay as you go system—in which the working generation finances the social security of the retired generation—are strained by upside-down demographics and a loss of full employment. Poor economic growth and recessions that are more structural than cyclical are further mired by growing fiscal deficits.

A third paradox is that, while most older persons have accumulated skills and expertise during their lives, new technology makes their experience increasingly obsolescent. The nature of work is changing rapidly, and the emerging economy—based on knowledge and information technology—requires less labor, as well as intellectual capital and skills that differ from those of the elderly. Many older workers have seen their familiar work world crumble with the invasion of new technologies, new economics, and new management theories and practices. Moreover, younger workers tend to have more of the daring and dynamism required by a creative, innovative, and entrepreneurial economy.

Given the global shift toward new technology, rapid globalization, and more intense competition, financial provision in old age has, not surprisingly, shifted from the state to the market. Since the 1980s market-based principles of health care delivery and financing have taken precedence. Within welfare states, health cost containment has become a matter of necessity more than economy, whatever the sociopolitical context (Glennerster 1997; Kingson and Schulz 1997).

Curiously, older nations are looking at younger ones for possible solutions to these problems. For example, the United Kingdom is examining the self-funded social security systems it left for its colonies, including Singapore. But old age social policy is too entwined with the macro-political economy of any country to make wholesale changes feasible. Many Asian countries that have experienced rapid and high economic growth, however, were able to consider the

Linda Low is associate professor in the Department of Business Policy at the National University of Singapore. Aw Tar Choon is medical director of the Alexandra Hospital, Singapore, and associate professor and vice dean of the faculty of medicine at the National University of Singapore.
problems experienced elsewhere, and have not only taken stock but also prepared for financial security in old age. Singapore's apparent success in handling these problems may be dismissed because the country is fairly unique—both in terms of its size and its politics, which features forceful, rational decisionmaking and policymaking. Still, Singapore's experience offers lessons for other countries seeking to ensure financial security for the elderly.

Scope and Nature of Old Age

Financial Security

Singaporeans are growing older, with attendant effects on the economy, society, and polity. The median age increased from 29.8 years in 1990 to 32.2 in 1995 (Department of Statistics 1997a). The index of aging (the proportion of people 60 and over to those under 15) rose from 39 percent to 44 percent over the same period. At 21 years, the rate of population aging (the number of years for the percentage of people 65 and over to double from 7 percent to 14 percent of the population) is the highest among Southeast Asian nations, and will be attained in 2018 (Kinsella and Gist 1995).

Old age financial security has three components. The bulk should be what individuals and families provide privately, whether for retirement income or medical expenses. In Singapore this includes funds from the mandatory Central Provident Fund and similar social security and pension schemes, as well as voluntary savings in financial institutions and other financial assets. A second source is insurance for medical expenses as well as annuity payments, especially for lifetime annuity schemes. Finally, the state provides financial assistance when private sources are unavailable or insufficient.

Typically, the life-cycle hypothesis postulates a stage of dissaving and high consumption in old age (barring hefty bequests). And during the younger years, consumption typically exceeds savings because of marriage and family formation. During middle age savings should be higher than consumption because income-earning abilities peak in mature households with lower young dependency rates.

Rational people try to provide for their old age needs by assuming that they want to at least maintain their current standards and lifestyles during retirement. With age, physical impairments that affect mobility and daily activities—even if they are not illnesses requiring medical expenses—have to be planned for. Logically, as one prepares for careers and families, retirement should deserve no less foresight and planning because it should be the most crucial milestone in life.

More rather than less planning is called for because the state of one's health, family circumstances (whether one survives a spouse or becomes single for whatever reason), and other environmental factors cannot be ascertained beforehand. Borrowing against the future (as with mortgages and credit) is no longer an option for people who have no income unless they have assets to run down.

Psychologically, however, the last stage of life is not pleasant to plan. Some prefer to put it off, either because of self-delusion, denial, resignation, or excess optimism.

The main sources of financial security for the elderly should be their own savings over and above what is "saved" in trust (in pensions, provident funds, insurance policies, and other forms). In a welfare state, taxes paid by workers constitute an automatic "chain letter" compact whereby the state is obliged to provide the retired with old age security for the rest of their lives. Financial support can also come from family members, nonfamily community networks, and the state as the provider of the last resort.

Whether they participate in first (pay as you go schemes), second (occupational pension plans), or third (personal pension plans) pillars of social security or mandatory versus voluntary pillars, the shortsightedness of individuals often leads them to grief in old age financial security (World Bank 1994). The state invariably enters the social security system because income redistribution and national insurance pooling, as alternatives to the vagaries of ill health and old age, must be properly regulated and supervised.

While paternalism is a leitmotif of Singapore's People's Action Party, the government has always been clear and steadfast when it comes to payment and patronage. The government is paternalistic to the extent of enforcing savings for individuals' old age needs under the Central Provident Fund. Families form a second line of defense and communities provide another safety net before the state provides subsidies. A technocratic framework of planning, projecting, and preparing people for change in a highly disciplined and ruled context has its merits, even when dealing with softer touches of social policy.
Singapore has a mandatory old age savings plan but also relies on the informal safety net of family and community. The self-funded, individualized provident fund has proved extremely effective. Instead of having adverse effects on incentives, it promotes self-reliance that is robust against demographic shifts and runaway expectations. The government uses logic, fairness, and ability to extol the virtues of hard work without damaging the economic and social fabric.

There is a paucity of published data on Singapore’s private voluntary savings in general and of older persons in particular. Nothing is known apart from an aggregate national savings rate composed of government savings, household savings, and business savings. It is reasonable, however, to deduce that people save over and above mandatory Central Provident Fund levels (Low and Aw 1996).

**Policies and Measures to Deal with the Financial Burden of Aging**

Singapore has long been aware of the problems of the elderly. The Howe Report, issued in 1984, was followed by related studies by the Ministry of Health in 1991, 1992, and 1993. Similarly, the Ministry of Health and Ministry of Community and Development recently conducted a national survey on the elderly that provides timely information on their financial security and support. Because the Central Provident Fund is the precursor and most dominant of all policies and measures to provide for old age, it takes center stage in this section, followed by supplementary and complementary measures.

**Central Provident Fund accounts for old age**

The complexity and comprehensiveness of the Central Provident Fund have elevated it beyond old age and social security. More often than not, it is associated with housing first (Low and Aw 1997). As a macroeconomic stabilization and macrosocial tool, the Central Provident Fund has been played to the hilt.

Between 1955 and 1968 Central Provident Fund savings helped the government finance capital development in infrastructure and public housing. Because a 100 percent home ownership policy is a politically and economically desirable way to solidify an immigrant, multiethnic society, Central Provident Fund savings became available at the individual level, first for public and then for private housing. By 1977 the home ownership policy was so successful that a separate Special Account was established to preserve 4 percent of Central Provident Fund contributions strictly for old age.

Although the Central Provident Fund provides for an individual’s old age, all fund schemes for housing, health care, and tertiary education are eligible for nominated family members. The self-employed and Singaporeans working overseas contribute to the Central Provident Fund voluntarily (Medisave for the self-employed was mandated in 1992.) Allowing joint family beneficiaries and the topping up of parents’ accounts makes for a subtle but effective intergenerational transfer.

In 1996 the Central Provident Fund had a $72.6 billion balance and 2,741,804 members, for an average balance of $26,479. But the average balance of members between 55 and 60 was just $14,017 and for those over 60, $5,027. These two age groups accounted for 17 percent of Central Provident Fund members. The smaller balances of older members may be due to withdrawals for housing. If amounts withdrawn for housing, investment, and education are included, the average median balance in the Ordinary Account and Special Account of employees at age 55 is $98,296. But even if they already own a home, such members would not have enough to live on during retirement unless they have sources of savings in addition to those in the Central Provident Fund.

Central Provident Fund withdrawals under various schemes are shown in table 1. Apart from the sharp rise in withdrawals for investment in 1993 with the flotation of Singapore Telecom, funds are used primarily for housing.

| TABLE 1 |
| **Central Provident Fund and Medisave withdrawals, 1992–96** (millions of dollars) |
|---|---|---|---|---|---|
| Public housing | 2,930.7 | 2,862.5 | 3,595.5 | 4,476.4 | 5,256.1 |
| Investment | 377.7 | 4,494.6 | 2,876.8 | 2,414.5 | 2,843.9 |
| Education | 25.2 | 31.8 | 30.1 | 45.1 | 65.4 |
| Medisave | 237.5 | 250.2 | 273.5 | 290.9 | 308.7 |

Source: Central Provident Fund, Annual Report, various years.

FINANCIAL SECURITY IN OLD AGE: A CASE STUDY OF SINGAPORE

85
Medisave withdrawals per member are restricted, and in recent years the amount allowed has increased only marginally, from $1,061 in 1992 to $1,186 in 1996. The average withdrawal increased from $726 in 1992 to $779 in 1996.

**Medisave**

Medisave was established in 1984. The scheme, which absorbs 6 percent of Central Provident Fund contributions subject to a ceiling, is a realignment of social and old age security. Medisave savings can be used only for hospitalization, approved outpatient expenses (like hepatitis B vaccinations and chemotherapy), and Medishield premiums. With an aging population, concern about rising health costs—which are also a function of new and costlier technology, higher income elasticities, changing tastes, and other demand factors (Aw and Low 1997)—makes it logical to cast Medisave under the Central Provident Fund.

Central Provident Fund contributions by employers and employees are equivalent to 40 percent of wages, divided equally. Employers account for half of the 6 percent contribution to Medisave, but they also provide medical benefits over and above Central Provident Fund contributions. In January 1997 the Medisave contribution rate for self-employed workers 35 and older was raised by 1 percentage point, to 7 percent of net income. The contribution for self-employed workers under 35 is still 6 percent. In 1996, 201,163 self-employed workers (14.6 percent of all own-account workers) contributed to Medisave, but less than one-third (31.6 percent) of these contributed to Ordinary and Special Accounts.

In 1996 the average Medisave balance of 55-year-olds was $11,394. But only 46 percent of workers have the required Medisave balance at age 55. Given that the scheme was only introduced in 1984, older workers and retirees would face an unanticipated strain in having to siphon funds from their Ordinary Account to achieve the required balance. To help these members, a top-up financing scheme was introduced in July 1995, followed by a second one (open only to members 62 and older on 1 April 1996) in December 1996. These top-ups, ranging from $100 to $350, came from budget surpluses built up during Singapore’s boom years. The government required older Singaporeans to contribute at least $50 to their Medisave accounts in order to receive the top-ups—a small price to pay for such “dividends.” The $50 copayment was required to reinforce the partnership philosophy, and children were encouraged to copay for their parents. The government wants the Central Provident Fund to be used and perceived as a family institution, even if contributions are made by a single worker.

A third Medisave top-up was given in July 1997, with members between 21 and 59 receiving $100, those 60 and older receiving $200, and those 69 and older receiving $350. The larger amounts to older citizens recognize their contributions and lower accumulation during their working years as well as their greater medical needs. This third Medisave top-up will be followed by a fourth in 1999 if the economy continues to perform well.

**Medishield**

Medishield, a national catastrophic illness insurance scheme, was introduced in 1990 to provide health protection to Central Provident Fund members and their dependents. Except for certain preexisting illnesses, Medishield provides coverage for all members under 75. In 1997 the participation rate was 85 percent (members can choose to opt out of Medishield). In 1996 Medishield paid out $27.2 million for 48,157 claims, for an average of about $565 a claim. Medishield Plus, a higher coverage plan (with correspondingly higher premiums), was introduced in 1994. In 1996 Medishield Plus paid an average of $1,257 a claim for 3,661 claims. Claim costs will increase as the population ages.

**Medifund**

Some health care expenses are covered by the Medical Endowment Fund (Medifund). Medifund, set up in 1993, is the extra safety net when, even with government subsidies, Medisave, and Medishield, citizens are unable to pay their hospital bills. Medifund provides more support to regular contributors to Medisave who are covered by Medishield. Similarly, it gives more support to the elderly who have no or low Medisave accounts because the scheme was introduced too late for them to build up funds. Medifund is not an entitlement. Contributions come from budgetary surpluses, which are generated when the...
The economy does well and the government has been prudent. The initial capital transfer from the government’s consolidated revenue account was $200 million in 1993, with an additional $100 million transferred in 1994 and in 1995. Income from the $400 million capital sum is disbursed to public and restructured hospitals. Medifund advisory committees in each hospital consider and approve applications from eligible patients.

The amounts approved under Medifund increased from $4.7 million in 1993 (for 18,454 approved applications) to $8.5 million in 1994 (28,179 applications) to $9.8 million in 1995 (40,453 applications). Most of the grants (82–85 percent) went to outpatient assistance; the rest were used for inpatient expenses. Woodbridge Hospital absorbed the bulk of the Medifund grants, followed by Singapore General Hospital and Tan Tock Seng Hospital. The rate of approval was around 99.7 percent in all three years for all inpatient and outpatient cases.

**Central Provident Fund for approved investment**

Continued full employment cannot be taken for granted. Moreover, perceptions of what is adequate for old age are not static. Thus one operative principle in the 1990s is to use asset enhancement both to increase stakeholdership and national wealth. The Approved Investment Scheme was implemented in 1986, but as early as 1978 Central Provident Fund members were using their savings to buy shares in the Singapore Bus Company. The Approved Investment Scheme was revamped in 1992, when the Basic Investment Scheme and Enhanced Investment Scheme differentiated between types of allowed investment. The Central Provident Fund Investment Scheme, which allows a wide range of options for investment, is the January 1997 merger of the Basic Investment Scheme and Enhanced Investment Scheme.

If asset enhancement succeeds, the greater wealth of all Singaporeans would provide greater financial security for older parents and dependents. As under Medisave, the government has provided top-ups under the Central Provident Fund Investment Scheme. The share ownership top-up schemes are meant to help Singaporeans build up sufficient Central Provident Fund savings to buy shares in privatized government companies and statutory boards. The third top-up scheme was for members who had at least $500 in their Central Provident Fund accounts between 1 March 1996 and 28 February 1997. More than 1.4 million members qualified, and the government paid out $496.5 million.

By 1996, with $15,165 million withdrawn, the average amount invested by 373,895 members was $40,560. Policies for using Central Provident Fund savings are becoming more liberal but not more necessarily more efficient. Much now depends on how wise members are in handling their investments.

**Central Provident Fund minimum sum and retirement account**

Central Provident Fund members can invest up to 80 percent of the cash balance remaining after the minimum sum is satisfied. The minimum sum of $30,000 was initiated in 1987, essentially as a halfway measure after the government failed to convince Central Provident Fund members to extend the age of withdrawals from 55 to 60, to have it coincide with the age of retirement. At 55, members can withdraw some or all of their Central Provident Fund savings—except the stipulated minimum sum, which is placed in a retirement account from which fixed monthly sums are paid out until the sum is exhausted. A better option would be for members to purchase a lifetime annuity with their Central Provident Fund savings.

Together with Medisave and other forms of voluntary saving and financial support from children and families, the plan for old age security seems well conceived and covered. It rests on many pillars of self-provision through savings, family, and insurance (for example, annuity and Medishield arrangements).

The minimum sum has been raised to $40,000, of which the cash component must be $4,000 and the rest pledged in a property. The sum is being raised by $5,000 a year to reach $80,000 by 2003, when $40,000 will be required in cash. Children are encouraged to top up their parents’ minimum sum, just as members can top up for themselves and their spouses. Married couples are allowed to set aside one and a half times rather than twice the minimum sum provided they nominate one another as beneficiaries.

Payments made from the retirement account have been modest, increasing from $219 in 1992 to $222 in 1995,
which is below subsistence levels. In April 1997 monthly income was $260 for individuals and $390 for couples. When a member reaches the current retirement age (60) in 2002, the monthly income from the minimum sum will be $383 (before adjustment for inflation). This is not like an annuity with a guaranteed lifetime income, which members are encouraged to buy.

Financial adequacy of the elderly

Policies and measures to secure old age financial provisions appear wide and elaborate. But adequacy is harder to measure because Central Provident Fund members have very different characteristics and living standards can be subjective. Conceptual models can be simulated based on assumed socioeconomic profiles of older persons, living arrangements, health status, and other characteristics. Such models require considerable data, however, and are beyond the scope of this paper. Instead, a 1995 survey of 4,750 senior citizens conducted by the Ministry of Health and Ministry of Community Development (1996) may provide some indications. The survey provides fairly comprehensive information on the elderly, defined as those over 55.

Nearly half (43 percent) of senior citizens have their own sources of income—mainly from salaries and business but also from interest, dividends, and rents—but female senior citizens are less financially independent (table 2).

More than three-quarters (76 percent) of senior citizens receive income from their children, and children are the main source of financial support. A much smaller portion (8 percent) receives income from spouses. In 1995 the median monthly income of senior citizens was $518 (table 3). About 86 percent of senior citizens live with their children; 3 percent live alone and 5 percent with their spouse only.

It is not easy to quantify adequate support because individual needs, lifestyles, and expectations vary. Still, 89 percent of senior citizens appear to have adequate income (table 4). Among those with inadequate income, the high cost of living was the main reason for more than half (58 percent)—as well as the main reason for inadequate security.

Just over two-thirds of senior citizens have savings and fixed deposits (69 percent) and own their homes (68 percent), which are also their most important assets. Yet 87 percent of senior citizens have no plans for financial security because they rely on their children (table 5). Among those

<table>
<thead>
<tr>
<th>TABLE 2</th>
<th>Senior citizens with own sources of income, 1995 (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group</td>
<td>Men</td>
</tr>
<tr>
<td>55+</td>
<td>58.2</td>
</tr>
<tr>
<td>55-64</td>
<td>75.6</td>
</tr>
<tr>
<td>65-74</td>
<td>43.6</td>
</tr>
<tr>
<td>75+</td>
<td>21.8</td>
</tr>
</tbody>
</table>

Source: Ministry of Health and Ministry of Community Development 1996.

<table>
<thead>
<tr>
<th>TABLE 3</th>
<th>Monthly income level of senior citizens, 1995 (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Total</td>
</tr>
<tr>
<td>55+</td>
<td>1000</td>
</tr>
<tr>
<td>55-59</td>
<td>1000</td>
</tr>
<tr>
<td>60-64</td>
<td>1000</td>
</tr>
</tbody>
</table>

Note: Total includes cases of nonresponse.

Source: Ministry of Health and Ministry of Community Development 1996.
with financial plans, 59 percent accumulate savings. Most of the rest have insurance, work, or invest in housing.

Nearly two-fifths (39 percent) of senior citizens do not have Central Provident Fund accounts. Among those who do, nearly half (44 percent) perceive their Central Provident Fund savings as inadequate. Among those who made lump sum withdrawals from their Central Provident Fund accounts, 51 percent deposited the money in banks, 36 percent used it for living expenses, and 20 percent used it to buy property.

About 85 percent of senior citizens consider themselves in good health, and only 7 percent had been hospitalized in the year preceding the survey. The median medical expenditure incurred for the previous six months was $89. More than half (55 percent) of all senior citizens and nearly two-thirds (65 percent) of women depended on their children’s Medisave for health care financing (table 6). In all, Medisave accounted for nearly three-quarters of health care financing for senior citizens.

Issues and Challenges

The main issues and challenges for old age security are the adequacy and coverage of the various schemes and the need to reallocate funds among accounts, promote insurance, generate more investment income, make savings more efficient, move toward a fair but less benevolent state, and develop a third sector.

Ensuring adequate and comprehensive coverage

The most significant issue relates to the adequacy of old age security. After retiring, people naturally hope to maintain, if not raise, their living standards. Because housing needs and other requirements may shrink during the life cycle, two-thirds of the last income drawn is generally considered the minimum required to achieve this goal.

Several safety nets are in place for single- or two-person households with no dependents and the possibility of financial support from children and others. Workers retiring in the next five years or so have had less time to build up their minimum sums, retirement accounts, and Medisave balances, so children and the government have started to top up these funds.

The bigger challenge lies with individuals who do not feel the need to prepare for old age. The Asian tradition of falling back on children for financial support, supplemented by Central Provident Fund and voluntary savings, may give these individuals the sense that they have done enough. Those who have converted their minimum sums to lifelong annuities, topped up by investment income and even capital gains from the sale of housing, may be slower on the uptake. Rather than betting on speculative capital gains, the older generation appears to rely on prudence, thrift, and initiative. Even insurance pooling—as is implied in medical insurance and lifelong annuities—may hold a stigma for Asians averse to thinking about sickness and death.

Yet the reality is that the elderly will face higher medical consumption and expenses and rising inflation, including for medical care. If they are set in their ways and hard to educate and motivate, encouraging their children to provide for them is wise and practical.

Whether Central Provident Fund coverage is sufficiently comprehensive is another issue. The provident fund has

### TABLE 5

<table>
<thead>
<tr>
<th>Age group</th>
<th>Total</th>
<th>Children provide income</th>
<th>Insufficient provident fund</th>
<th>Medisave</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>55+</td>
<td>100.0</td>
<td>77.2</td>
<td>11.1</td>
<td>5.9</td>
<td>5.8</td>
</tr>
<tr>
<td>55-59</td>
<td>100.0</td>
<td>66.8</td>
<td>14.3</td>
<td>11.7</td>
<td>7.2</td>
</tr>
<tr>
<td>60-64</td>
<td>100.0</td>
<td>75.0</td>
<td>11.3</td>
<td>7.7</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Source: Ministry of Health and Ministry of Community Development 1996.

### TABLE 6

<table>
<thead>
<tr>
<th>Source</th>
<th>All</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100.0</td>
<td>65.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Children’s Medisave</td>
<td>55.0</td>
<td>43.8</td>
<td>65.0</td>
</tr>
<tr>
<td>Spouse’s Medisave</td>
<td>2.0</td>
<td>0.6</td>
<td>3.2</td>
</tr>
<tr>
<td>Own Medisave</td>
<td>17.9</td>
<td>30.1</td>
<td>6.9</td>
</tr>
<tr>
<td>Own savings</td>
<td>12.0</td>
<td>13.1</td>
<td>11.1</td>
</tr>
<tr>
<td>Other provisions</td>
<td>5.2</td>
<td>5.1</td>
<td>5.3</td>
</tr>
<tr>
<td>No provisions</td>
<td>7.9</td>
<td>7.3</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Source: Ministry of Health and Ministry of Community Development 1996.
been offered to the self-employed, while Medisave is mandated. But the coverage of financial safety nets for the nonemployed—especially housewives and other dependants and Singaporeans working abroad—is of no less concern.

Spouses’ accounts have not been topped-up as well as those of parents. Moreover, housewives are at risk if marriages break down or husbands neglect them in old age. Schemes that provide Central Provident Fund contributions based on the imputed earnings of housewives may be feasible, especially among younger and educated couples. This approach would complement the principle of regarding housewives as homeworkers. The contributions could come from spouses as well as from children of working age.

Reallocating funds among accounts

If wage competitiveness is the main reason the Central Provident Fund contribution rate is set at 40 percent, it is not easy to argue for a higher rate. And the rate cannot be lowered without affecting utilization patterns and options. Thus only an adjustment of rates and balances across the Ordinary, Medisave, and Special Accounts should be considered to deal with aging and rising medical expenses.

To that end, housing is being deemphasized and savings promoted for old age and medical needs. Widespread home ownership is still desirable, but policies encouraging account holders to use Central Provident Fund savings to upgrade housing have led to much speculation in real estate. Between 1991 and 1995 about 87,000 households upgraded housing—equivalent to 14 percent of the housing stock in 1990 (Department of Statistics 1997b).

Overly concerned parents are worried about the rising costs of real estate, not realizing that they may have unwittingly been the cause by chasing prices up with speculative demand. A more gradual process of upgrading, in line with rising living standards, would have been inevitable. Making it official policy may not have been wise. The time is ripe to shift old age financial needs forward in line with demographic trends.

Promoting insurance

Though insurance is embraced only cautiously, it may grow in time. Self-reliance may be a greater virtue than depending on insurance, but risk sharing and resource pooling are useful. Properly designed and implemented, insurance can foster a sense of responsibility and care—especially with the deductibles and copayments that accompany health insurance. Before insurance can be promoted, however, the potential insured must be educated.

To avoid moral hazard and adverse selection, the extension of insurance should be natural rather than forced. Excess consumption of health services may occur if patients and doctors collude, resulting in a “buffet” syndrome so long as a third party pays. Adverse selection raises premiums for all members of an insurance pool because high-risk people with preexisting or hereditary illnesses have joined precisely because they are most likely to need insurance. Insurance works best when it is based on probability and risk—not when free-riders take advantage of pooled resources.

Providing a bonus for insured who make no claims in a given period could encourage people to use health insurance prudently as well as stay healthy. The bonus could be both monetary and in the form of in-kind benefits—for example, reduced medical charges when services are required in the future. Insurance can thus be more creatively packaged.

Allowing Medisave funds to be used for premiums for private health insurance—up to a maximum, if needed—may also be logical. But private insurers may have to come up with competitive packages like Medishield’s plans A and B and be willing to extend coverage to age 75. While encouraging families to insure their children may be an inefficient use of family funds—given that the young tend to be healthy—it may provide insurance companies with sufficient business to cater to older customers. Intergenerational subsidies that provide insurance for all may not be entirely inequitable and inefficient. A certain element of externality and social good is desirable.

Lifetime annuity benefits may be another inevitable product for the insurance industry. There are two inherent risks: lifespans and the yields guaranteed over them. Today annuity packages are not heavily subscribed or widely offered. More education for subscribers and more incentives for suppliers may be needed.

Generating more investment income

Because wage competitiveness puts an upper bound on the Central Provident Fund contribution rate, the fund’s
board and members need more avenues for high-yield investment. Capital gains from stocks and shares—rather than from real estate—would ease pressure on Singapore, a land-scarce city state. A thriving stock market that mobilizes savings and capital does not overallocate or inefficiently allocate resources, as happens in real estate.

Privatization of government-linked companies could be expedited if Central Provident Fund savings were made available through the Central Provident Fund Investment Scheme. Regional and global capital markets are being tapped to further promote Singapore as an international financial center. But with the globalization of financial markets—and the increased instability and risk that accompany it—there is no need for artificial or excess acceleration of investment in foreign stocks and bonds.

In June 1997 the Central Provident Fund Investment Scheme comprised 150 trustee shares on the main board, 3 on the second board (SESDAQ), 11 loan trustee stocks, and 17 unit trusts. While these entities qualify by certain criteria—such as paid-up capital of at least $15 million and shareholder equity of at least $30 million—they are not meant as recommendations by the Central Provident Fund board. Liberalizing Central Provident Fund savings to invest in approved stocks and shares would not obligate the government to ensure that people enrich their nest eggs. The government could, however, compile and disseminate information on investments.

Making savings more efficient

The Central Provident Fund is an unapologetic model of enforced savings and constrained choice of what savings may be used for and when. Such compulsion and restrictions often become fodder for free market advocates who judge efficiency and choice using purely economic criteria. But any suboptimal efficiency must be weighed against socio-political outcomes, which are less tangible and harder to measure.

To be sure, home ownership generates economic distortions—artificial demand, excess consumption, accelerated asset inflation—that are difficult to quantify. But enabling people to own their own homes provides political legitimacy for the government and creates a sense of belonging and stakeholdership for the people. As Central Provident Fund funds are liberalized for members (within certain limits), complaints about economic inefficiency should ease. Members may make risky choices about investments, but that is considered efficient insofar as free market choice prevails.

Moving toward a less benevolent state

The government has been accused of passing the burden and moral responsibility for old age health care and financial security back to the individual. But the government never promised a welfare state, which would encounter problems as full employment subsides and demographics shift. From a political economy view, welfare spending by the state is essential for a capitalist economy to function—yet it is bound to grow to a point that a capitalist economy would be unable to cope with (Glennerster 1997). Public spending on social capital (accumulation function) and social expenses (legitimization function) is thus preferable.

The government provides assistance for the needy, though at subsistence levels. This approach is intended to ensure that ample employment opportunities are pursued. In addition, equity problems and a bloated government budget are avoided. The principle of the payee and the beneficiary being one and the same has its merits, as with copayments that protect against abuse. But if Singapore’s full employment falters, the government must be prepared to rethink these considerations.

Developing a third sector

Social services for the elderly will be of increasing importance, both in magnitude and depth. One way to prudently recycle government surpluses back into the economy is to use them to develop a third sector—distinct from the traditional public and private sectors—for maintaining employment and providing social services.

Singapore cannot escape employment shrinkage (not merely falling) as “third wave” demassification comes with knowledge industries. This change will redefine opportunities for and responsibilities in work. On the one hand, technological displacement will create more leisure and discretionary time. On the other, changing demographics and longer lifespans mean higher medical and other costs of sustaining lifestyles.
The argument for a third, independent or volunteer sector is as follows. If unemployment rises, increased leisure can help strengthen community bonds. The new social contract that emerges under a community-based third force is consistent with government decentralization and efforts to forge community development councils, which cannot rely purely on volunteerism.

Several government actions are needed to empower the third sector. Volunteer work should be encouraged with tax deductions. Properly designed, tax breaks will not debase the spirit of volunteerism. Companies and individuals already enjoy these breaks when they contribute to approved charities. Tax deductions or shadow wages could also be used to recognize the value of social services traditionally provided by women, such as tutoring, child care, and services for the poor, elderly, or underprivileged.

In addition, the government could create jobs by providing more grants to nonprofit, voluntary private organizations and other civic organizations. Bolstering this fourth layer of the social safety net—on top of the Central Provident Fund, families, and government—would also provide much-needed relief for families caring for the elderly. And families, acting as consumers, would be able to choose the services they purchase from voluntary private organizations. These organizations would provide professional care but would not be entirely motivated by profit nor wholly dependent on volunteerism. Moreover, voluntary private organizations could provide preventive care rather than focus exclusively on treatment.

This approach would address the government’s challenges in dealing with an aging society by combining market principles with the necessary degree of paternalism. Because the proposed grants would be similar to what the government provides under the budget and from budget surpluses (as with the topping-up schemes), its “generosity” could be adjusted to reflect the current political view that such grants are not a right. Moreover, as long as taxes are paid by individuals, the government cannot be seen as delegating its social responsibility to families and voluntary private organizations. Being a visible supporter of old age care is socially and politically astute.

This approach would also make the social services provided by voluntary private organizations more efficient and effective. Voluntary and part-time workers cannot be expected to devise and implement proper business ideas, because they simply do not have the incentives to do so. Though paying volunteers may appear contradictory, it is realistic. Singapore has a tight labor market, and a competitive society cannot expect voluntary organizations to provide all of the many services needed by the elderly. Paid work would encourage professionalism and induce proper training for third sector workers. Moreover, third sector jobs could strengthen the bonds between the young and the old, for what the younger generation cannot give in terms of financial assistance, it can render in services and in-kind support.

### Conclusion, Lessons, and Policy Implications

Singapore provides comprehensive social security but is not a welfare state, as are many OECD countries. Benefits are self-financed by individuals and their families. The amounts saved, especially in Medisave and the Central Provident Fund’s minimum sum, may be low for older persons because they started accruing late in their working lives. But the members’ children and the government provide top-ups and other support.

For old age financial security, savings made over the lifetime can be sufficient to maintain an individual’s current living standards only if macroeconomic factors (real per capita GDP, employment, taxation, inflation) remain favorable. For health, the government has done the right thing in encouraging healthy lifestyles from an early age, and its health policy has focused on preventive rather than curative care. A more innovative but cost-conscious private health sector must also work with the government to make a healthy old age possible (Newbrander 1997).

Whether old age security is sufficient is not easy for this paper to address. The Special Account, minimum sum, retirement account, annuities, top-ups, and other schemes indicate some advance thinking and preparation. Raising the Special Account would require restructuring Central Provident Fund contribution rates for other accounts if the 40 percent rate is to be preserved. As noted, the minimum sum is being raised.

Other suggestions could bolster the prospects for old age security. Deemphasizing the use of Central Provident Fund
savings to upgrade housing and putting more aside for old age would help curb speculation in and excess consumption of housing. Allowing freer investment with Central Provident Fund savings would help, though the outcome would depend on the economic health of Singapore and the region. Promoting insurance—with proper education of its use and abuse—is probably unavoidable. And developing a third sector would help determine who pays and provides for old age care.

Though paternalism has explained the success of many public policies, it has also taught the dangers of policy overkill. Even when its intentions and objectives are good, public policy often swings a bit too heavily and quickly. Government efforts to promote housing upgrades may have been overdone—encouraging speculation in real estate at the expense of old age security and health care. Going with the flow of developments may be a more gracious way to implement public policy.

Still, Singapore offers lessons with its fully funded, comprehensive, and paternalistic Central Provident Fund schemes. But these are also the hardest to replicate, since even when its intentions and objectives are good, public policy often swings a bit too heavily and quickly. Government efforts to promote housing upgrades may have been overdone—encouraging speculation in real estate at the expense of old age security and health care. Going with the flow of developments may be a more gracious way to implement public policy.

Moreover, Singapore is a small economy with little or no room for scale economies. Thus distortions created by state dominance may be more forgiving, either subsumed under sociopolitical gains that are harder to quantify or rectified by more interventions. Such policy tolerance may not be possible elsewhere.

Singapore's approach to old age financial security is more planned than muddled. While adequacy can never be guaranteed, there should be no mass financial crunch for the elderly if the economy continues on a steady course. Full employment coupled with a higher retirement age, better health maintenance, and a strong family network are a formidable formula.

Note

1. The retirement age will be raised to 62 in 1999.

References


Comment

Lim Han Soon

Though many ideas about financing health care and old age security have been presented at this conference, some of us may still be a bit hazy about social security reform. Visitors to the Central Provident Fund often ask us questions about this process; in this comment I address three of the most common.

How Can Social Security Systems Be Improved?

Aviva Ron notes that some countries undertaking social security reform have moved from a provident fund system to a pension system. Estelle James points out that some countries have added to their pension pillar one or two other pillars—a mandatory, privately managed, fully funded pillar for saving, or a voluntary pillar for saving for people who want more protection for old age.

Singapore has not switched from a provident fund system to a pension system. Nor have we added a pension pillar. Instead we have developed our Central Provident Fund system and worked with other agencies and the private sector to meet the social security needs of our people. We kept the provident fund system because it offers several benefits:

- It is fully funded—so there is less need for intergenerational transfers.
- It allows members to accumulate assets—for example, homes.
- It is flexible—so it can respond to future changes.

James notes the advantages of a fully funded scheme. Prefunding makes costs clear up front, so countries are not tempted to make promises today that they cannot keep tomorrow. Such schemes prevent inadvertently large intergenerational transfers. And funding may be used to build up long-term national saving.

Asset accumulation by individuals is one of Singapore's social security objectives. As Linda Low and Aw Tar Choon note, home ownership gives people a sense of belonging and stakeholdership. It also makes the provident fund system more acceptable to workers. Workers are less likely to evade contributing to the Central Provident Fund because they know that their savings can be used to service their mortgages. With the help of the Central Provident Fund, more than 90 percent of Singaporeans own their homes.

Low and Aw express concerns about excess investment in real estate. While their concerns may be valid, property values in Singapore have appreciated considerably since the first Central Provident Fund housing scheme was introduced in 1968. Housing has been a good investment for Central Provident Fund members. To curb excess investment, measures were introduced in recent years to curb property speculation.

Still, property is a fixed asset. Unless it can be converted to cash easily, it does not help provide for old age. But as a last resort, property can be converted to cash for old age through downgrading, reversed mortgage, or sale. And in addition to residential properties, we allow Central Provident Fund members to invest their old age savings in commercial properties and financial instruments such as shares, bonds, unit trusts, and endowment policies. These
offer more investment opportunities for members and help develop Singapore's financial markets.

Thus a provident fund system can be flexible. The Central Provident Fund started as a simple old age savings scheme for individual workers. Today its benefits include home ownership, savings for health care, health insurance, life insurance, mortgage-reducing insurance, intrafamily support, and life annuity for retirement. The self-employed are required to participate in a mandatory health care saving program and are encouraged to save voluntarily for their retirement. During the 1980s the Central Provident Fund helped manage inflation when wages were raised (in line with productivity growth) by setting aside money for old age. It also helped Singapore out of recession by cutting employers' Central Provident Fund contribution rate by 15 percent. Part of this cut was later restored when the economy recovered.

The Central Provident Fund also offers less obvious benefits. It encourages thrift and self-reliance. It encourages people to work and to upgrade their skills. It fosters stronger family ties and support. And it minimizes abuse of the social security system.

No system is perfect, and the Central Provident Fund has its problems. I will touch on three mentioned in Ron's paper:

- How to provide a retirement income for life under a provident fund system?
- How to help those with insufficient savings to provide for their old age?
- How to take care of those who have no savings for their old age?

To provide a retirement income for life, we encourage Central Provident Fund members to buy a life annuity from an insurance company using the savings in their account. The annuity product must meet minimum guidelines, and provides a monthly income for life from age 60.

For Central Provident Fund members who have insufficient old age savings—because they contributed at a lower rate in the early days or for other reasons—we encourage top-ups by their spouse and children. The top-ups can be in cash or through Central Provident Fund transfers. The government also tops up accounts from its surpluses.

For those who have no savings for their health care and old age, we encourage their spouse or children to open a Central Provident Fund account and contribute for them. Again, the government helps by topping up their accounts. As a last resort these individuals receive public assistance financed by tax revenue. But the number of people on public assistance is low. We try to find them a job or help them start a small business instead of providing handouts.

Our provident fund system has served us well, and we see no reason to abandon it. We will continue to study other systems and improve our own, ensuring that we continue to have a social security system that is flexible enough to meet our changing needs.

**How Should the Transition Be Managed?**

Many foreign visitors come to study the Central Provident Fund. Many have seen the benefit of introducing the “saving principle” in their social security systems. A pay-as-you-go system is hard to fund, especially with an aging population. Furthermore, pay-as-you-go systems create problems like those noted by James—misallocated resources (using tax revenue for pensions rather than for education, health, or infrastructure), high and rising taxes leading to increased unemployment, evasion, escape to the informal sector, and early retirement, and so on. Thus many visitors have wanted to reform their systems—but were concerned about transitional problems.

James touches on these problems and describes three responses: the Latin American (individual account) model, the OECD (employer-sponsored) model, and the Swedish (notional defined contribution) model. She points out that the most important initial condition is the implicit pension debt—that is, the present value of the pension funds owed to current pensioners and to workers according to their years of participation in the old system. She also shows how some countries solved their implicit pension debt, finding ways to fund the old system and encourage participation in the new.

As noted, in Singapore we have maintained the provident fund system. Thus we have not encountered as many problems as countries that have made major reforms. But we did face problems when we extended our system to include annuities and insurance, and when we modified our Central Provident Fund schemes. These experiences provided several lessons about dealing with transitional problems:
All issues must be discussed thoroughly, considering both the short- and long-term implications and involving all relevant parties—including those responsible for implementing the reforms.

People must accept the reforms. To that end, it is essential to secure initial support from unions, employers, and government. Moreover, it is important to communicate with the people, obtain feedback, and fine-tune proposals along the way.

If possible, reform should start with those who have the means to participate in it—for example, those with enough income to save or to support the plan—to serve as role models.

**What Role Should Other Agencies Play in Reform?**

Social security issues are becoming more complex. In the Central Provident Fund we have learned that we cannot tackle today's health care and old age security problems alone. We must work with other government agencies and even the private sector to achieve our goals. For example, in our health care programs we work with the Ministry of Health, insurance companies, and hospitals. To achieve our homeownership objectives, we work with the Ministry of National Development, Housing and Development Board, and financial institutions. And in our old age security programs we work closely with the Ministry of Community Development, Ministry of Labor, and private insurance companies.

Stretching cooperation further, it is not enough to have good health care and old age security programs for our people. We also need to work with government agencies and the private sector to ensure affordable public housing, good public health, clean water and sanitation, affordable health care, and so on, so that our people can enjoy a high quality of life.

Working with other entities may require us to set up joint teams to study social security issues. It may require close consultation and coordination among public agencies and the private sector. And at the operational level, it may require computer networking and the introduction of the "one stop" service concept.

**Conclusion**

There are many approaches to social security reform. Systems can be modified rather than augmented or replaced. Each country should assess its needs and develop a social security system that meets them. An old system does not have to be abandoned, especially if it has worked well. Features that work should be retained; those that do not should be replaced. The experience of others is valuable. And when countries succeed in some areas, they should share their experience.
Each of these three papers brings a different perspective on the financing of old age security. Aviva Ron focuses on the traditional role of public social security programs—meeting the needs of the elderly, especially the poor. Estelle James concentrates on the effects of social security programs on economic development. And Linda Low and Aw Tar Choon discuss the success of old age security programs in Singapore.

Ron reminds us that the traditional role of social security programs is to fund the gap between the amount needed for basic subsistence and the resources available to the elderly to finance those needs. She also feels that there is a need to focus more on implementation issues such as operations, administration, coordination of programs, and definition of needs. She concludes that it would be preferable to continue with past social security practices and sees no need for major reforms. She also sees the move toward user fees in the financing of medical services as counterproductive.

I find Ron’s perspective somewhat limiting. Social security programs have multiple effects. Just as society should not ignore the traditional rationale for public old age assistance programs, it should not ignore the macroeconomic and growth effects of those programs. The role of governments is to examine the tradeoffs between different approaches to social security and, based on the social, economic, and cultural environment in their country, choose the option that best suits their needs. The points raised by Ron are an important part of the discussion on social security, but they are insufficient to draw some of the conclusions that she makes.

James presents the evolving World Bank perspective on social security. Whereas Ron focuses on the need to redistribute resources, pool risk, and provide for low-income workers—what James defines as the first pillar of a social security system—James focuses on the second pillar: government-mandated private savings to meet the needs of the masses. James sees the growth of this second pillar as a necessary response to demographic trends and to the financial unsustainability and growth problems that arise from sole or heavy reliance on the first pillar.

I find James’s approach helpful in the discussion of old age security issues, but I question one of her implicit assumptions. At several points in her paper, James assumes that having each generation pay for its own old age improves intergenerational equity. While this may be the case if one is building an ideal system without regard to the past, it may not be if there is a tradition of each generation providing for the old age of the previous generation. In moving from a pay as you go system (in which each generation assumes responsibility for its elders) to a fully funded system with no intergenerational sharing, the transition generation ends up paying for its own old age as well as that of the previous generation. While James explicitly deals with the financial aspects of this transition, she seems to under-emphasize the intergenerational consequences and resulting inequity.

Low and Aw remind us that the success of any social security system depends on its political, social, and cultural context. Using the terminology of James, Low and Aw describe Singapore’s social security system, which has a
prominent second pillar and a small first pillar. They consider this system consistent with Singaporean values—especially the desire for self-sufficiency of the individual and dependence on the family. They also see the paternalistic government as a key to implementing a far-sighted system.

Low and Aw, however, are a little hasty in proclaiming the success of Singapore’s system. A growing and significant segment of workers are not covered by the Central Provident Fund, and the ability of existing programs to meet their needs is highly questionable if family attitudes and values change. And for those who are Central Provident Fund members, current provisions for old age are weak, as much of the program’s focus has been on housing. Recent changes in the minimum sum scheme seek to redress these shortcomings, but they place a heavy burden on the current generation of workers.

Three Important Issues

The three papers raise three important issues for old age security in Singapore. These involve coverage, transition costs and intergenerational equity, and investment and transparency.

Coverage

A large and significant portion of the Singapore work force is not covered by the Central Provident Fund system. The portion of the work force contributing to the Central Provident Fund rose steadily until 1981, when it reached 81 percent (Asher 1994). By 1996 it had dropped to 66 percent (CPF 1997; Department of Statistics 1997). During this period there was no change in groups covered by the fund’s old age security plans, but the drop in participation corresponded with increases in contribution rates. Since most of those who are not covered are in the informal sector, the change in coverage goes against the underlying natural trend that the formal sector should be expanding as the economy grows and matures. The change in participation also goes against the theoretical argument that contributions to defined contribution pension plans should not decrease participation because participants receive benefits in return for their contributions.

The natural question that arises is, where do these people who are not covered by the Central Provident Fund get support in their old age? As Low and Aw note, the 1995 national survey of senior citizens in Singapore found that the vast majority depend on their children. This begs a second question: can these people depend on their families for support in the future, since the trend in most societies has been away from family support as development occurs?

If there is a movement away from family support, Singapore clearly does not have the first pillar of redistributive, tax-financed programs needed to meet the needs of this group. In this situation, Singapore needs to think of ways to bring these people into the formal sector or consider the types of programs that Ron emphasizes in her paper.

The coverage issue also extends to Central Provident Fund members. As Low and Aw point out, the system’s shift in emphasis from old age security to housing in the 1970s and 1980s has left many members with inadequate saving for old age. Despite high contribution rates, in 1996 net Central Provident Fund balances were only 55 percent of GDP (CPF 1997; Department of Statistics 1997). This group also depended on their children for support.

The government has embarked on a two-pronged attack to increase old age security for Central Provident Fund members. The first has involved a variety of top-up schemes in which the government makes contributions to individual Central Provident Fund accounts. No matter how these schemes are labeled, they are the kind of first pillar, tax-financed, pay as you go programs that the government arduously tried to avoid in the past. And no matter how hard the government tries, these programs are likely to have some of the negative effects that first pillar initiatives have had in other countries. In 1995 tax-financed government contributions accounted for 7 percent of contributions to Central Provident Fund accounts, and in 1996 for 5 percent (CPF 1997). Before 1993 the government made no such contributions.

The second prong has been to increase the cash requirements under the minimum sum scheme from $4,000 in 1995 to $40,000 in 2003. This is essentially an effort to reestablish the Central Provident Fund as a true second pillar of Singapore’s old age security system.

Transition costs and intergenerational equity

The primary issue in reestablishing the Central Provident Fund as a defined contribution, fully funded old age secu-
rity scheme involves intergenerational equity and the implicit pension debt. James raises the retirement of implicit pension debt of first pillar, defined benefit, pay as you go systems as the main obstacle in moving to second pillar, defined contribution, fully funded systems. While she defines implicit pension debt for government pension and social security systems, it also exists for informal systems of filial piety. When children are responsible for funding their parents' old age, society is placing an implicit debt on them. When the United States and Western European countries adopted first pillar, pay as you go social security systems, they replaced the implicit pension debt under filial piety with the implicit pension debt under the government programs. There was no shift in intergenerational responsibility—just a shift from individual family to societal responsibility.

In Western Europe and in many South American countries, first pillar systems have helped temper the intergenerational effects of moving to second pillar systems. In Singapore there is no first pillar system to buffer the effects of adopting a full-fledged defined contribution, fully funded system. The shift from family to Central Provident Fund financing of old age is going to involve one generation having to finance the retirement of their parents and themselves. The key issues that arise in Singapore are the rate at which the shift should occur and whether the benefits of a fully funded system merit the costs to the current generation of workers.

Investment and transparency

All the balances in Central Provident Fund accounts are invested in Singapore government bonds that bear interest based on the average short-term savings rates at four local banks. The government is free to do anything it wants with the funds from the bonds, using them for operating expenses, infrastructure, and housing (as it did in the early years of the Central Provident Fund), or investment. There is no separate accounting for Central Provident Fund funds, which are co-mingled with general revenue funds. Institutionally, then, the Central Provident Fund is nothing more than a notional pay as you go system.

Functionally, however, the Central Provident Fund is a fully funded system because of the fiscal discipline of the Singapore government. The government invests all Central Provident Fund savings outside the government, mostly overseas, which essentially makes the system fully funded. Most other countries in the region would be unlikely to achieve such results by adopting similar systems because they lack fiscal control and restraint.

The Central Provident Fund's success as the second pillar in Singapore's old age security system will depend on its ability to stimulate growth and development through new net savings and better investments. As Low and Aw point out, inadequate public information on private individual savings has limited the ability of researchers to assess the Central Provident Fund's effects on net savings. The only study in the area found no new net savings as a result of the Central Provident Fund, but this conclusion was reached using indirect and crude measures of private savings (Husain 1995).

As far as investment efficiency is concerned, the literature indicates that this is closely tied to whether funds are invested by individuals or government. Except for a small portion of Central Provident Fund savings that has been withdrawn under private investment schemes, all funds are invested by government. While the government has liberalized the provisions for private investment of some Central Provident Fund balances in recent years, only 14 percent of members had chosen to make private investments by the end of 1996 (The Straits Times, 9 April 1997; CPF 1997).

Finally, the lack of separate accounting and the failure to pay actual returns to individual accounts raises issues about cross-subsidization of general government activities by Central Provident Fund members. In March 1996 the minister of finance stated that investment returns on Singapore's reserves had averaged well over 5 percent over the past 10 years, though no precise figures were given (The Straits Times, 15 March 1996). If this is true, the 2 percentage point difference between what Central Provident Fund members receive on their funds and what the government makes is a subsidy to the government. The question that arises is whether the pension system is an appropriate method of funding government activity.

Conclusion

The primary lesson from these three papers is that there are mutual benefits to sharing ideas about social security
programs. Singapore can learn from the experiences of the rest of the world, and the rest of the world can learn from Singapore. Singapore has one of the oldest defined contribution, public social security systems in the world. Open and critical evaluation of Singapore's experiences can provide invaluable information to the world community—especially in evaluating the effects of defined contribution systems on savings and the effects of private investment schemes on investment efficiency.

References


Recent World Bank Discussion Papers (continued)

No. 357 Innovations and Risk Taking: The Engine of Reform in Local Government in Latin America and the Caribbean. Tim Campbell

No. 358 China's Non-Bank Financial Institutions: Trust and Investment Companies. Anjali Kumar, Nicholas Lardy, William Albrecht, Terry Chuppe, Susan Selwyn, Paula Perttunen, and Tao Zhang

No. 359 The Demand for Oil Products in Developing Countries. Dermot Gately and Shane S. Streifel


No. 361 China: Power Sector Regulation in a Socialist Market Economy. Edited by Shao Shiwei, Lu Zhengyong, Norreddine Berrah, Bernard Tenenbaum, and Zhao Jianping

No. 362 The Regulation of Non-Bank Financial Institutions: The United States, the European Union, and Other Countries. Edited by Anjali Kumar with contributions by Terry Chuppe and Paula Perttunen

No. 363 Fostering Sustainable Development: The Sector Investment Program. Nwanze Okidegbe

No. 364 Intensified Systems of Farming in the Tropics and Subtropics. J.A. Nicholas Wallis


No. 367 Easing Barriers to Movement of Plant Varieties for Agricultural Development. Edited by David Gisselquist and Jitendra Srivastava


No. 371 Land Reform in Ukraine: The First Five Years. Csaba Csaki and Zvi Lerman

No. 373 A Poverty Profile of Cambodia. Nicholas Prescott and Menno Pradhan

No. 374 Macroeconomic Reform in China: Laying the Foundation for a Socialist Economy. Jiwei Lou

No. 375 Design of Social Funds: Participation, Demand Orientation, and Local Organizational Capacity. Deepa Narayan and Katrinka Ebbe


No. 379 Empowering Small Enterprises in Zimbabwe. Kapil Kapoor, Doris Mugwara, and Isaac Chidavaenzi

No. 380 India's Public Distribution System: A National and International Perspective. R. Radhakrishna and K. Subbarao, with S. Indrakant and C. Ravi

No. 382 Public Expenditure Reform under Adjustment Lending: Lessons from World Bank Experiences. Jeff Huther, Sandra Roberts, and Anwar Shah


No. 390 Evolution of Agricultural Services in Sub-Saharan Africa: Trends and Prospects. V. Venkatesan and Jacob Kampen