

Holzmann, Robert

Working Paper

Old-age financial protection in Malaysia: Challenges and options

IZA Policy Paper, No. 96

Provided in Cooperation with:

IZA – Institute of Labor Economics

Suggested Citation: Holzmann, Robert (2015) : Old-age financial protection in Malaysia: Challenges and options, IZA Policy Paper, No. 96, Institute for the Study of Labor (IZA), Bonn

This Version is available at:

<https://hdl.handle.net/10419/121333>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

IZA Policy Paper No. 96

**Old-Age Financial Protection in Malaysia:
Challenges and Options**

Robert Holzmann

January 2015

Old-Age Financial Protection in Malaysia: Challenges and Options

Robert Holzmann

*University of Malaya, University of New South Wales (CEPAR),
CESifo, IZA and Austrian Academy of Science*

Policy Paper No. 96
January 2015

IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0
Fax: +49-228-3894-180
E-mail: iza@iza.org

The IZA Policy Paper Series publishes work by IZA staff and network members with immediate relevance for policymakers. Any opinions and views on policy expressed are those of the author(s) and not necessarily those of IZA.

The papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the corresponding author.

ABSTRACT

Old-Age Financial Protection in Malaysia: Challenges and Options^{*}

This policy paper presents key findings and suggestions on Malaysia's old-age financial protection system within the context of the country's broader social security framework. The trademark policy approach focusing on job creation instead of expanding social security programs served the country well to move it quickly to a high-middle income level. But to join the club of high-income countries in a sustainable manner may require the country to review its approach to social security, including the way old-age income support is provided, and to address the main current weaknesses: fragmentation across economic sectors, lack of an enabling political environment, incomplete benefit coverage, low mandated savings level, and inadequate disbursement options given the challenges of projected population aging and socioeconomic shifts. To address the old-age financial protection challenge, the paper outlines two key options for Malaysia's Employees Provident Fund, the country's central pension pillar: (i) moving from a mere retirement savings investment fund to a fully-fledged pension fund that offers some minimum annuities; or (ii) more radically, moving the benefits toward a Non-Financial Defined Contribution scheme with the fund's resources used as its major reserve fund. Whatever approach is considered, the reform discourse would benefit from changes in the overall governance structure of social security and from a comprehensive research agenda that offers an evidence based decision making.

JEL Classification: H55, O16, J14

Keywords: Employees Provident Fund, social security, reform options, annuities

Corresponding author:

Günther Schmid
Old-age Financial Protection
Social Security Research Center
University of Malaya
50603 Kuala Lumpur
Malaysia
E-mail: robert.holzmann@um.edu.my

^{*} This "think piece" was prepared at the request of the leadership of the Employees Provident Fund (EPF) of Malaysia. Key messages of the draft paper have been presented in Kuala Lumpur to the EPF leadership on June 18, 2014; the revised draft paper takes account of some of the valuable oral comments and suggestions received. Very valuable written comments were received by Mark Dorfman, Huzaima Hamid and Norma Mansor, great research support provided by Tan-Lih Yoong and excellent editing undertaken by Amy Gautam. Please note that the paper in any version presents the opinions of the author but does not necessarily reflect those of the institutions with which he is associated.

Contents

| | |
|---|----|
| 1. Introduction..... | 1 |
| 2. Current Old-age Financial Protection Provisions..... | 2 |
| 2.1 A multi-pillar-based summary | 2 |
| 2.2 Some performance indicators for the EPF | 4 |
| 3. Assessed Challenges | 7 |
| 3.1 The many positive aspects – under siege? | 7 |
| 3.2 Fragmentation..... | 8 |
| a. Fragmentation across economic sectors..... | 8 |
| b. Fragmentation across the political authorizing environment..... | 9 |
| 3.3 Incompleteness | 10 |
| 3.4 Perspectives..... | 11 |
| 4. Suggestions for Reform Directions..... | 12 |
| 4.1 EPF: From a retirement savings investment fund to a fully-fledged pension fund..... | 13 |
| a. The minimum reform scenario: seven proposed key changes to EPF operation..... | 14 |
| b. Implementation of life annuities by the EPF – two key options | 15 |
| 4.2 EPF: From a retirement savings investment fund to an NDC reserve fund | 16 |
| 4.3 EPF: Remain a retirement investment fund but let government provide the annuities | 19 |
| 4.4 Supplementary reform directions | 20 |
| a. Considerations for select old-age pillars’ reform | 20 |
| b. Establishment of benefits other than old-age..... | 21 |
| c. Development of reform directions and governance structure | 22 |
| 5. Next Steps: Analytical Agenda for an Informed Reform Discourse..... | 23 |
| 5.1 Exploring existing data sources | 23 |
| 5.2 Thinking about new surveys: SHARE, Financial Capability Survey, etc. | 23 |
| 5.3 Scenario projections: Institutional home and academic research..... | 24 |
| 5.4 National and regional research and reform discourse..... | 24 |
| References..... | 25 |

Figures

| | |
|--|----|
| Figure 1: Relationship Between Coverage of the Active Population and GDP per Capita | 6 |
| Figure 2: Total Mean Balance of Malaysians’ EPF Accounts | 7 |
| Figure 3: Required Contribution Rate for Alternative Target Replacement Rates under Varying Dividend Rate/Wage Growth assumptions..... | 17 |

Tables

| | |
|---|----|
| Table 1: Malaysia’s Pension Programs – Mapped..... | 3 |
| Table 2: Contribution Rate and Retirement Age of Select Countries..... | 5 |
| Table 3: Gross Replacement Rates and Pension Wealth for Select Countries, 2012..... | 6 |
| Table 4: Estimated Labor Force Coverage Rates | 10 |

1. Introduction

Old-age financial protection has become a key focus of policy interest and research efforts in South-East Asia, including in Malaysia. While the topic has been on the table of the traditional member-countries of the Organisation for Economic Co-operation and Development (OECD) since the 1980s, and was made a worldwide issue by the IMF and World Bank in the 1990s, it did not catch on in most of the South-East Asian region till the late 2000s. The most recent regional discussion was led by the Asian Development Bank (ADB), which produced a number of useful publications with a strong demographic and macroeconomic spin (Park 2009 and 2011; Park, Lee, and Mason 2012). But little discussion has taken place on the main structural reform options for current retirement income provisions to address the key challenges facing these countries.

The basic ingredients for a review of the current provisions are much the same across countries in the region: population aging that incurs economic, social, and budgetary consequences; advancing urbanization, rising female labor force participation, and increasing divorce rates that put further pressure on informal insurance arrangements; and ripple effects from the financial crisis of 2008/09 that make the outcome of existing provisions looks inadequate. Malaysia is in a special situation. While its Employees Provident Fund (EPF) – the central private sector pillar – was created over five decades ago, the accumulated resources at retirement are for most participants very modest and appear insufficient for a life annuity (that is in any case not offered). This begs the questions of: in what direction should Malaysia's retirement income system be reformed, and what can actually be done?

This policy paper offers a personal view on the old-age financial protection situation in Malaysia and its structure and challenges, and makes suggestions for reform directions based on an assessment of the situation. The key audience of the paper is the EPF leadership,¹ who asked for a policy paper on the author's vision for the Malaysian social security system in general and the EPF scheme in particular. The information underlying the paper includes the few publicly available reports, confidential reports by the World Bank and other institutions, the author's exposure to the EPF scheme for many years, and many discussions with experts on the topic inside and outside Malaysia. The policy report has not yet fully profited from the analysis of EPF data made recently available to the Social Security Research Centre; these results will be included in future papers.

Against this background, the structure of the policy paper is as follows. Section 2 very briefly presents the current old-age financial protection provisions in Malaysia and key outcomes. Developed against the World Bank's five-pillar framework, this summary serves to check the understanding of the provisions and to position the central role of the EPF. Section 3 offers an assessment of the key challenges of the old-age retirement provisions and motivates the importance of reforms. Section 4 makes suggestions for reform directions that are in line with the system development so far and promise to deliver the key pension outcomes. The final Section 5 proposes next steps to prepare the analytical agenda for an informed reform discourse.

¹ The EPF leadership is the initiator and sponsor of the chair at the University of Malaysia, currently held by the author, for the purpose of stimulating social security research in the country and bringing international experience and lessons to the table.

2. Current Old-age Financial Protection Provisions

This section offers a multi-pillar-based summary of Malaysia's old-age financial protection system and presents a few EPF-related old-age financial protection outcome indicators.

2.1 A multi-pillar-based summary

As a first step, we map the existing public programs related to the old-age financial protection in Malaysia into the World Bank's five-pillar framework as an analytical and policy shortcut to the many dimensions a pension system can have (see Holzmann and Hinz 2005: 80ff, and Table 1 below).² The five-pillar framework expands the traditional three-pillar approach by separating a zero pillar of basic provisions from pillar 1 (which covers mandated, unfunded, earnings-related schemes), and by adding a fourth pillar as a memorandum item that takes account of informal provisions such as family support and other relevant public provisions such as health care; countries with formal zero pillars have doubled during the last two decades (Holzmann 2013a; Annex Table 2). The second pillar keeps its definition of mandated and fully-funded occupational and personal schemes and the third pillar remains voluntary and fully-funded occupational and personal schemes. The five-pillar taxonomy serves to map existing pension schemes into a useful organizing framework in which for each pillar the key target groups (lifetime poor, informal sector, and formal sector) can be highlighted (see Annex Table A1). In addition to the positive (descriptive) interpretation, the organizing framework can also be given a normative interpretation and serve as benchmark against which a country system, with its individual schemes and programs, can be assessed. Key justifications for a multi-pillar approach are redundancy (i.e., there are backup provisions) and risk diversification (i.e., the returns of the different pillars and their default probability are best negatively correlated).

Establishment of a **zero pillar** of basic cash and service provisions for the most destitute is still nascent in Malaysia and under review by the government. The *Bantuan Orang Tua* (BOT) program offers basic transfers to an increasing number of individuals. While the budgetary outlays for this program have been increasing, its coverage remains limited and is fraught with targeting (inclusion/exclusion) errors; i.e., many who receive the cash transfer are not poor, while many poor people do not receive it (World Bank 2012). The service provisions through retirement homes and elder daycare centers are limited and patchy (Samad and Mansor 2013).

In many countries across the world, **Pillar 1** contains the central public pension scheme, offering typically mandated and unfunded defined benefits to private as well as public sector employees. In Malaysia, this pillar caters only to the country's core *civil servants*, with a comprehensive program that covers old-age, disability, and survivors benefits (plus generous health care benefits). Few details are known or published regarding its provisions and budgetary outlays, however. Yet the rising share of government employees in the labor force (11.9% in 2000 versus 13.2% in 2008), levels above benchmark countries such as Turkey and Singapore, soon runs the risk of affecting pension expenditure and fiscal sustainability.

The program operated by the *Social Security Organization* (SOCSO) covers benefits that do not strictly fall under old-age financial protection-related programs but only have some links. The work injury program that is directly related to workplace responsibility is typically not considered part of

² The most important dimensions are by: (i) the type of benefit – defined contribution/defined benefit schemes; (ii) the funding mechanism – unfunded/ fully funded; (iii) the administrative arrangements – public/private; (iv) the key purpose – poverty alleviation/income smoothing; and (v) the key target groups – lifetime poor, informal sector, and formal sector.

old-age provisions and the multi-pillar concept. A disability program may have a link in as far as it substitutes for old-age pensions for disabled persons above the retirement age. This happens in a number of traditional social insurance programs if a disability benefit is not transformed into an old-age benefit at standard retirement age. SOCSO's disability program offers disability benefits (for the disabled himself or for dependent survivors after his death) that can be received in parallel with any payouts received from the EPF. As the EPF does not offer any annuities to participants or their survivors, the benefits from SOCSO provide an incomplete substitute.

Table 1: Malaysia's Pension Programs – Mapped

| | Name of Program Institution | Benefit Type | Financing Type |
|---|---|---------------------------------------|---|
| Pillar 0: Basic benefits through social pensions or at least social assistance | <i>Bantuan Orang Tua</i> (Cash benefits) | Basis cash benefit of RM300 per month | General revenue |
| | <i>Rumah Seri Kenangan</i> (retirement homes) | In kind benefit | General revenue |
| | <i>Pusat Jagaan Harian Warga Emas</i> (elder daycare centers) | In kind benefit | General revenue |
| Pillar 1: Mandated, unfunded, defined benefit or contribution schemes | Civil Service Pension Fund | Old-age, disability, survivorship | General revenue |
| | SOCSO | Work injury, disability, survivorship | Employer contribution; Employer and employee contribution |
| Pillar 2: Mandated, fully funded, occupational or personal schemes | LTAT (armed forces) | All benefits | Employer and employee contribution |
| | EPF (private sector) | Lump sum/phased withdrawal | Employer and employee contribution Voluntary contribution by self-employed |
| Pillar 3: Voluntary, fully funded, occupational or personal schemes | PRS: Private Retirement Scheme | Lump sum, (fixed term) annuity | Voluntary premium, tax incentives RM 3,000 |
| Pillar 4: Access to informal and other formal provisions, and personal assets | Family Basic health care Public housing | Cash and in kind benefits | Family members, budget-financed, budget support |

Source: Author drawing, *inter alia*, on Ong and Hamid 2010, Othman 2010, and World Bank 2002,

In a small but a rising number of countries, **Pillar 2** mandates and fully funds old-age benefits via defined benefit (or more recently via defined contribution) -type schemes. In Malaysia, coverage of the *armed forces* under such a funded scheme is very much the exception rather than the rule worldwide. While comprehensive defined benefit programs for members of the armed forces covering old-age, disability, and survivorship (plus health care) are largely the norm, having them fully funded is the exception (South Africa also does this). But this funded scheme is not universal for all armed forces members, only those not eligible for a conventional defined benefit-type scheme; further, the scheme does not offer annuities, only lump-sum payments.

The EPF in Malaysia follows the tradition of the provident funds concept; i.e., it offers a savings vehicle for those who are covered while working and who receive lump-sum transfers when leaving

the country or retiring. Provident funds were the main old-age retirement provision for expatriates in the British Empire and served them well: they allowed investments in local, regional, or international (i.e., UK markets) with no exchange rate risk as the rate was fixed. After retirement and return to England, the returnee could buy a property and also an annuity in the biggest and deepest annuity market in the world – then and even now.

As in various other provident fund countries, the EPF has not only retirement savings objectives but also includes a separate contribution rate of 6.9% for savings toward education, housing, health care and a few other objectives, including recently pilgrimage. Only the remainder of the total 23% (or 24% for lower earners) split between employees (11%) and employers 12% (or 13%) goes towards retirement income purposes. In July 2013, the contribution rates for those aged between 60 and 75 were set at half the regular rates (i.e. at 6% (or 6.5%) and 5.5%, respectively).

The EPF also serves as a voluntary savings vehicle for the self-employed, who are not mandated to participate. Overall, less than 1% of the labor force takes advantage of the option to contribute to Malaysia's EPF.

Pillar 3 contains voluntary and funded retirement savings provisions that are regulated by the government for their retirement purpose and imply special government supervision and typically special tax treatment for the contributions or even direct government subsidies. The main purpose is to supplement the retirement provision for those covered under a mandated scheme. The Private Retirement Scheme (PRS) established and implemented in 2012-13, follows these considerations and offers main tax incentives for voluntary participants (see Liew 2012). By early 2014, the take-up by some 64,000 individuals (around 1% of the labor force), however, was below expectations.

Pillar 4 is a critical memorandum item when discussing old-age financial protection. The scope of this pillar's provisions has a bearing on the amount that needs to be provided by government or individual retirement saving. With strong family support for the elderly, public health care, and housing provisions or individuals' continued labor force participation into later years, the need for formal old-age financial protection shrinks. In turn, if the provisions under pillar 4 are withering or expected to do so, the formal provisions need to be strengthened to be able to deliver.

2.2 Some performance indicators for the EPF

This section offers a few available input and output indicators that help to better assess the old-age financial protection provisions in Malaysia compared to other countries. For reasons of space and availability, these indicators are restricted to those related to the EPF.

Table 2 offers an overview of contribution rates and retirement ages for selected countries in Asia and other regions for better comparison. Compared to other East Asian countries, Malaysia is in the top tier with respect to the overall contribution rate, and in the bottom tier with respect to retirement age (recently legislated to be increased to 60). Compared to potential competitors in other regions, Malaysia is in the upper half with respect to the overall contribution rate but in the lower tier with respect to retirement age, even considering the announced effective increase.

Table 2: Contribution Rate and Retirement Age of Select Countries

| Country | Per capita income 2012 (US\$) | Employee Contribution Rate (%) | Employer Contribution Rate (%) | Total Contribution Rate (%) | Statutory Retirement Age |
|----------------------|-------------------------------|--------------------------------|--------------------------------|-----------------------------|--------------------------|
| East Asia | | | | | |
| China | 6 091 | 8.0 | 20.0 | 28.0 | 50/60 |
| Hong Kong SAR, China | 36 796 | 5.0 | 5.0 | 10.0 | 65 |
| Indonesia | 3 557 | 2.0 | 3.7 | 5.7 | 55 |
| Japan | 46 720 | 7.7 | 7.7 | 15.4 | 65 |
| Korea Rep. | 22 590 | 4.5 | 4.5 | 9.0 | 65 |
| Lao PDR | 1 417 | 4.5 | 5.0 | 9.5 | 60 |
| Malaysia | 10 432 | 11.0 | 12.0 | 23.0 | 60 1/ |
| Mongolia | 3 673 | 7.0 | 7.0 | 14.0 | 55/60 |
| Philippines | 2 587 | 3.3 | 7.1 | 10.4 | 65 |
| Singapore | 51 709 | 20.0 | 16.0 | 36.0 | 62 |
| Thailand | 5 480 | 3.0 | 3.0 | 6.0 | 55 |
| Vietnam | 1 755 | 6.0 | 12.0 | 18.0 | 55/60 |
| Other Regions | | | | | |
| Argentina | 11 573 | 11.0 | 10.2 | 21.2 | 60/65 |
| Brazil | 11 340 | 7.7 | 20.0 | 27.7 | 60/65 |
| Chile | 15 452 | 10.0 | 0.0 | 10.0 | 60/65 |
| Mexico | 9 749 | 1.7 | 6.9 | 8.6 | 65 |
| Poland | 12 708 | 9.5 | 9.8 | 19.3 | 60/65 |
| United Kingdom | 39 093 | 11.0 | 12.8 | 23.8 | 68 |
| United States | 51 749 | 6.2 | 6.2 | 12.4 | 67 |

Source: World Bank pension database (accessed March 2014).

Notes: ^{1/} Increased by law in 2013 but not yet effective.

Table 3 compares gross replacement rates and pension wealth across selected countries. The gross replacement rate used here is the pension benefit as a percent of individual lifetime average earnings for workers earning 100% of average earnings in the reference year.³ Gross pension wealth shows the size of a lump-sum payment that is equivalent to the average promised benefit for an average wage worker by the mandatory pension system in each country. Malaysia has one of the lowest gross replacement rates as well as pension wealth (compared to average wage) for both men and women among the compared countries (despite the high contribution rate noted above). But even these rates are only notionally high, as the calculation assumes that no funds are withdrawn except for the purchase of the annuity. If the calculation instead used the actual funds left at retirement, it would perhaps halve the values.

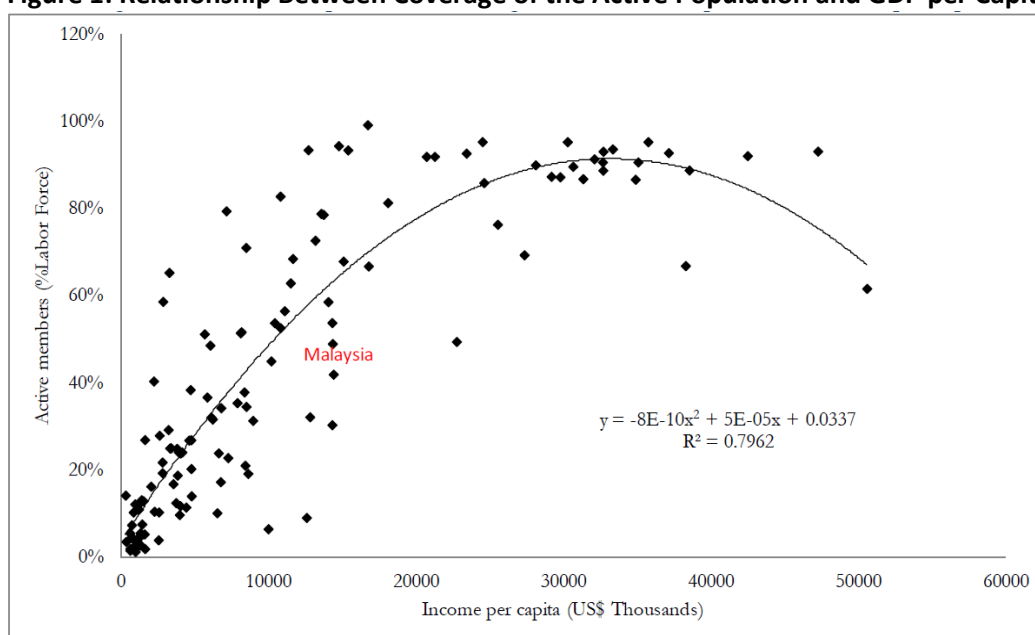
³ All workers are assumed to start work at age 20, to work continuously, and to retire at the retirement age for each respective country. Real earnings are assumed to grow in Malaysia at 6.0% per year, converging to an OECD figure of 2.0% per year. Defined contribution benefits are assumed to be paid out in a price-indexed annuity at an actuarially fair price.

Table 3: Gross Replacement Rates and Pension Wealth for Select Countries, 2012

| Country | Men | | Women | |
|------------------|----------------------------|--|----------------------------|--|
| | Gross Replacement Rate (%) | Gross Pension Wealth (Multiple of Annual Earnings) | Gross Replacement Rate (%) | Gross Pension Wealth (Multiple of Annual Earnings) |
| Singapore | 38.5 | 6.8 | 34.4 | 6.8 |
| Indonesia | 14.1 | 2.6 | 13 | 2.6 |
| Malaysia | 35.1 | 7.7 | 31.9 | 7.7 |
| Japan | 35.6 | 6.5 | 35.6 | 7.5 |
| Hong Kong, China | 34.8 | 6.3 | 31.5 | 6.6 |
| United States | 38.3 | 5.9 | 38.3 | 6.6 |
| Australia | 52.3 | 9.3 | 47.8 | 9.7 |
| Korea | 39.6 | 7.1 | 39.6 | 8.3 |
| Thailand | 47.1 | 9.8 | 47.1 | 10.7 |
| OECD(34) | 54.4 | 9.3 | 53.7 | 10.6 |
| Philippines | 37.7 | 4.4 | 37.7 | 5.3 |
| China | 77.9 | 15.2 | 61 | 15.3 |
| Vietnam | 67.3 | 15.1 | 61.8 | 19.2 |

Source: OECD 2013a and b.

Figure 1 sketches the relationship between income per capita (in US\$) and old-age financial protection coverage (for active members in the private sector). The relationship is statistically very strong and suggests that coverage as measured is closely related with income per capita, until it peaks at a very high level. This relationship can be used as a benchmark for countries such as Malaysia. It can be seen that Malaysia's coverage rate is below this benchmark, while a number of countries within a similar income band have much higher coverage rates.

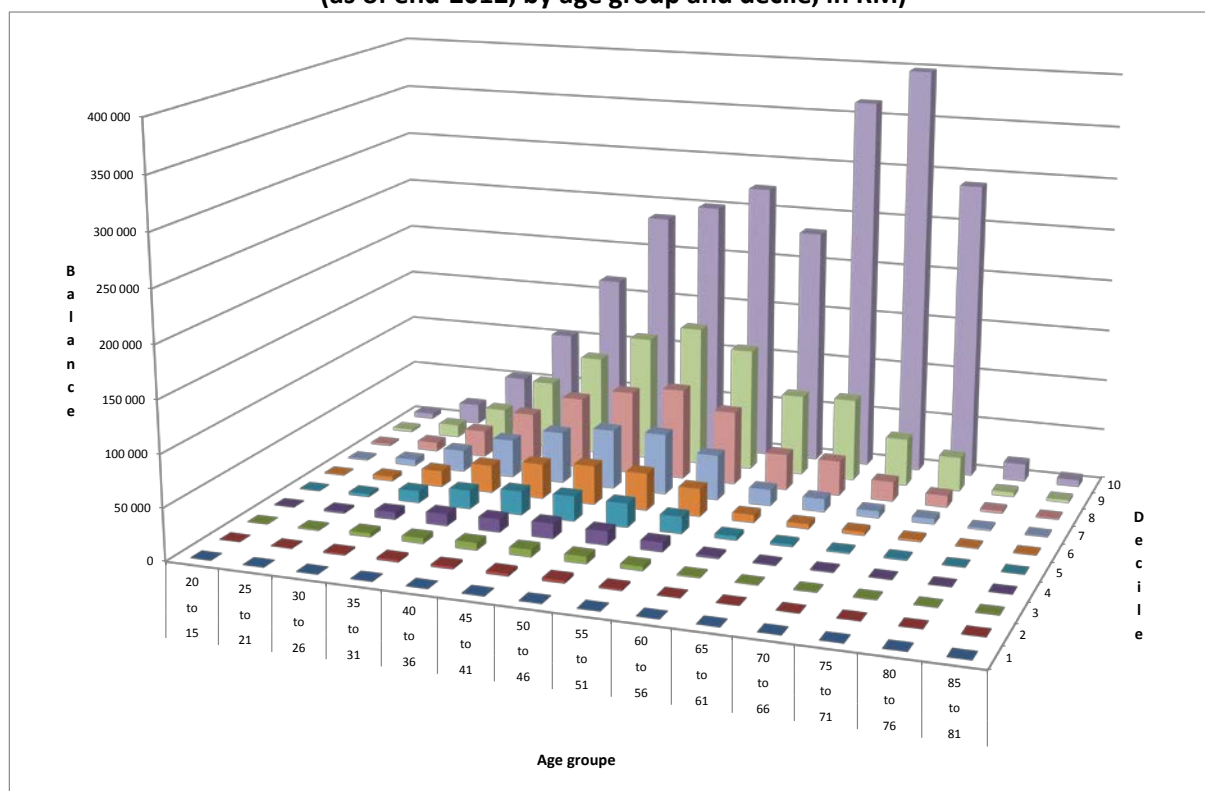
Figure 1: Relationship Between Coverage of the Active Population and GDP per Capita

Source: World Bank pension database.

Figure 2 presents the total mean balance (i.e., account 1 and 2) of those individuals with a positive balance by end-2012, by age group and by decile of balance value. The balances are very small for

almost two-thirds of those age groups that should have the highest balance: those aged 46-50, before account 1 can be fully accessed; and those aged 50-55, before account 2 can be fully withdrawn. Only the highest three deciles have accumulation of some significance at retirement. The development of lower deciles suggests major issues with contribution effort/contribution density at younger ages, and main withdrawals soon after reaching retirement age; the highest decile suggests no contribution issues at younger ages and the use of the EPF as an investment vehicle into older ages by rich retirees.

**Figure 2: Total Mean Balance of Malaysians' EPF Accounts
(as of end-2012, by age group and decile, in RM)**



Source: Author, based on EPF sample data (Holzmann, Ismail and Jaafar 2014).

3. Assessed Challenges

This section highlights challenges to the current EPF as perceived and assessed by the author. This informal assessment is inspired by a review of available documents and draws on many useful discussions with a diverse set of observers inside and outside of Malaysia, but builds mostly on own observations and reflections against my international background and experience. The section starts by highlighting the positive elements before reviewing the main perceived challenges: fragmentation, (in-) completeness, and a lack of perspectives.

3.1 The many positive aspects – under siege?

Malaysia has experienced admirable economic and social development and is enjoying one of the consistently highest economic growth rates in the world in recent decades. As a result, its rising development indicators have pushed it closer to the frontier of the most advanced countries. To achieve this progress, the country profited from good indigenous macroeconomic policy, including during the financial crisis of the 1990s, but also from natural resource wealth that has been used to a large measure for growth-relevant investments such as in infrastructure and education.

In the development of social security programs, the government has so far pursued policies that promote job creation over social program expansion for a diverse set of reasons; of them, most important is the fear of losing economic dynamism and competitiveness with too comprehensive and expensive social programs; the view that the family should be the first line of defense against social risks also plays a role.

The EPF has produced rates of return that have been quite good albeit not stellar; much better performance may be difficult to achieve in a world where the fund is largely invested in the financial market. Compared to many and, perhaps, most other provident funds across the world, however, the EPF's governance structure allowed it to deliver reasonable rates of return to its clients over a very long time. Centralized pension or wealth funds have had notoriously very bad investment performance until recently (Rajkumar, Sudhir, and Dorfman 2011).

Does this mean that the country and the EPF can and should continue business as usual? My sense is that if Malaysia wants to achieve its objectives of becoming a high-income country by 2020, it needs to reflect on its business model, including the role of social security programs and the EPF in the provision of old-age financial protection. Very briefly, as discussed in more detail later, key issues include:

- **The middle-income trap thread:** Much has been written about the middle-income trap, including in the context of Malaysia, and why or why not it may be subject to the thread. Among the constraints that may be critically relevant for Malaysia, the human resource aspect is most likely to require attention. Critical for persistent growth is the reallocation of human capital from declining to expanding industries, which requires labor mobility with appropriate skills and social protection.
- **Social program challenges:** The social security system and its individual programs may not have the features to best support this Schumpeterian dynamism of creative destruction and shows a number of weaknesses that need to be addressed in their own right (discussed right below).
- **The EPF challenge:** Given its central role for old-age financial protection in Malaysia, any perceived deficiency in the current system will require reform of the EPF itself and cannot be delegated to other pillars (such as PRS). Most critically, the EPF needs to move from being an investment fund for retirement savings for a subset of the population to being the center of a fully-fledged, comprehensive, consumption-smoothing pension fund (discussed in Section 4).

3.2 Fragmentation

Malaysia's social security system is characterized by a number of fragmentations, the most important of which are fragmentation across economic sectors and fragmentation across the political authorizing environment, complicated by a lack of central political oversight.

a. Fragmentation across economic sectors

The key social programs, including for old-age financial protection, are fragmented across the private and public sectors, and within the latter, are split between the civil service and the armed forces. While the public sector offers generous benefits across the whole breadth of retirement income-related programs – old-age, disability, and survivorship, plus health care – private sector coverage is split between the EPF and SOCSO, with incomplete and mostly low accumulations under the EPF and incomplete coverage plus stingy benefits under SOCSO.

Appropriately sized, publicly provided, and fully portable social benefits are critical elements for economic incentives and human resource reallocation across sectors. High benefit levels linked with high wages create a strong attraction to the public sector, inducing queuing and arbitrage phenomena that can be detrimental for economic performance as they make the private sector – the driver of innovation and creator of economic growth – less attractive to the country's most talented. A very attractive public sector can work well for countries when they are small and elite (such as Hong Kong). However, when a country is large and expanding, the large public sector risks becoming not only expensive but also detrimental to economic performance.

The situation is exacerbated if different benefit formulas are an obstacle to the portability of benefits across sectors (Holzmann, Koettl, and Chernetsky 2006; Holzmann and Koettl 2014). It is not clear to me to what extent this is the case. While moving from the private to the public sector should create few issues, as EPF accounts are reportedly kept till retirement and beyond, a move in the other direction would create obstacles if public sector benefits are lost or substantially curtailed. Otherwise, mobility exists but becomes expensive for the public purse and provides advantages to only a select few.

b. Fragmentation across the political authorizing environment

The authorizing environment in Malaysia is currently fragmented across the main old-age financial protection programs and pillars, such that:

- The provisions under pillar zero (BOT *et al.*) are under the Department of Social Welfare;
- The provisions under pillar 1 are split between the Public Service Department, responsible for the Civil Service Pension Fund, and the Ministry of Human Resources, responsible for SOCSO;
- Under pillar 2, the Ministry of Armed Forces takes care of the Armed Forces Fund (LTAT) while the Ministry of Finance takes care of the EPF; and
- Under pillar 3, the new PRS is regulated and supervised by the SEC (Security Commission) while the older employer-sponsored private pension schemes are approved by the Inland Revenue Board of Malaysia under Section 150 of the Income Tax Act 1967. Payouts that happen as annuities fall under the insurance regulator, Bank Negara.

This fragmentation of key government players across all programs risks the creation of fiefdoms of special interest and reduces the incentives to take a more holistic approach. This danger is magnified if no government institution has an overall competence of political direction and central oversight.

While the National Commission for Social Policy serves as a sounding board and discussion forum among the different players in old-age financial protection programs, it does not appear to provide central political guidance and oversight. Nor is such a position anchored within the Economic Policy Unit or the Prime Minister's office. For this reason, it has been proposed in the past that a Social Security Council (or similar but differently named institutions) be tasked with drawing up a strategic and comprehensive blueprint on policies and programs for everyone from the young to the very old. Such a council should be informed by the deliberations of the Social Security Stakeholder Assembly, which represents all relevant groups in the population. In addition, the fragmentation across ministries needs to be addressed and would be best resolved by centralization. Successful examples in the region include the Ministry of Health and Social Welfare in Korea, the Social Development Ministry in New Zealand, and the Ministry of Health, Labor and Welfare in Japan.

3.3 Incompleteness

A number of gaps exist in Malaysia's current old-age financial protection arrangements, the most important ones being coverage, savings level at retirement, and the lack of annuities.

As alluded to earlier, Malaysia's **coverage level** for old-age benefits is below the cross-country average benchmark. Table 4 details coverage level and gaps based on an EPF report from 2010 and the 2009 Labor Force Survey. The table reveals that some 37% are without formal coverage because they are not mandated to pay into the EPF and do not do so even on a voluntary basis. The main group is own account workers, who could contribute on a voluntary basis but only about 1% actually prefer to do so. International experience suggests that there are good arguments why own account workers prefer to invest in their own small or large enterprise instead of paying contributions and receiving a moderate dividend, while when borrowing money they would have to pay much higher loan rates. Nevertheless, internationally, the share of voluntary contributors is typically higher. The remaining 20% of the labor force not covered includes unpaid family members and a residual "other" group that includes the large group of labor migrants excluded from joining the EPF. While it makes sense to exclude seasonal or even short-term temporary migrants from contributing to a pension scheme in host countries (see Holzmann and Puget 2012), for many of the others the non-contribution creates issues of attractiveness and productivity when working and vulnerabilities when old.

Table 4: Estimated Labor Force Coverage Rates

| | Coverage ('000s) | % of Total |
|-----------------------------------|------------------|------------|
| Mandatorily covered | | |
| EPF Actives | 6,039 | 52 |
| Public Service Department Actives | 1,200 | 10 |
| Uncovered | | |
| Own Account Workers | 1,917 | 17 |
| Unpaid Family Workers | 500 | 4 |
| Others (incl. foreign workers) | 1,861 | 16 |
| Total | 11,517 | 100 |

Source: World Bank 2012, based on EPF Annual Report, 2010, and Labor Force Survey, 2009.

For those that contribute to the EPF, savings levels, measured via accumulated funds at retirement, are quite low. Using the EPF sample data and focusing only on the total accounts of Malaysians with nonzero balances, by the end of 2012 the average (mean) accumulation **for** all ages amounted to RM37, 965; at age 50-54, it amounted to RM61, 835. Yet given the concentration of wealth in the higher echelon, the average is biased upward. The median, which divides the group into two equal halves, across all ages was only RM12, 250, while the median for age group 50-54 amounted to RM23, 506. These values are biased downward due to dormant accounts (e.g., individuals who moved from the private to the public sector or had only very limited labor force attachment some time ago), so when the data are cleaned, the average and median values will likely rise somewhat.^{4,5}

⁴ For data reasons, we define dormant accounts as those where the account holder has not made a single contribution in the period 2002-2012. As the data cleaning is not yet finished, these net data are not yet available.

These low mean/median accumulations at retirement age 55 would translate into very low annual annuities, amounting to some RM3, 070 and RM1, 170 per year, respectively;⁶ the monthly values are RM256 and RM98. This compares to the monthly national poverty line of RM820 and a poverty threshold of RM3000 per month for a couple with 2 children in urban area below which a household is considered vulnerable to poverty.

Increasing the retirement age to 65 and assuming that accumulation would increase the accumulations by another one-third, the corresponding mean and median annuities would increase to RM5, 520 and RM2, 100, respectively. This shows the advantage of deferred retirement: higher accumulation from 10 more years of contributions and compound interest rates and a shorter period of retirement receipt would almost double the annuity amount.

The key drivers of the low accumulation for a large part of the population at retirement awaits empirical clarification and will constitute a first main task with the EPF data: is it generally a low wage level as it is often claimed; a low reported wage level and the high level of contribution rates invites for evasion and avoidance; a low contribution density due to low administrative control; too high withdrawals for various purposes; a wage growth that significantly exceeds the interest rate received, or a combination of all (and in what proportion)? The answers to these questions have a main bearing on the policy guidance and reform design. The experience of other countries suggests that a low hanging fruit is to strengthen the collection and compliance function across social insurance institutions (EPF, SOCSO, a future unemployment benefit scheme, etc) and as joint collection with the income tax.

A key gap in the current setup of the EPF is the lack of any annuities, even at a basic level. The economic analysis convincingly makes the point of strong welfare effects for individuals of some annuitization of accumulated resource at retirement (e.g., Yaari 1965, Brown *et al.* 2001; Davidoff, Diamond and Brown 2005; Mitchell, Piggott, and Takayama 2011; and Milevsky 2013). The reported lack of interest in annuities in Malaysia is explained by the generally low level of accumulation at age 55, which translates into such low annuity levels that people are not interested; anecdotally, they prefer a family-intern annuity process by exchanging cash transfers *inter vivo* against the promise of future income support. It may also be explained by annuity providers who reportedly offer deals that are not attractive; i.e., a too-low annuitization rate for every ringgit invested. Or it reflects individuals' incomplete information about the value and functioning of annuities, including the options for deferred annuities that may be bought in advanced countries at an attractive price at retirement (say 60 or 65) while payments start only at age 75 or 80. The experience with voluntary annuitization suggests that the result is closely linked with the political will and advocacy in a country: both are very high in Switzerland and very low in Australia (Holzmann 2014).

3.4 Perspectives

To initiate changes and think through the appropriate reforms to old-age financial protection policies and programs requires a shared understanding of the socioeconomic challenges ahead, and the key

⁵ For example, most Public Service Department' employees are also EPF members because for the first 3 years in service they are under probation and thus ineligible for the government' pension scheme. Thereafter, essentially all chose the latter but keep EPF accounts increasing the total number of (inactive) EPF members by a million or more.

⁶ Lacking relevant mortality and interest rate data for Malaysia, I used a Canadian life annuity calculator (www.rbcinsurance.com/annuities/payout-annuity-calculator.html). Thus the calculated amount will be downward biased through the higher remaining life expectancy at retirement and lower rate of return in Canada compared to Malaysia, perhaps mitigated by a more competitive market with lower markups.

policy changes required. From my casual observations of the country since the Asian crisis in the late 1990s and my more informed observations since taking the chair in mid-2012, such shared understanding and perspectives are heavily underdeveloped in Malaysia and much of the rest of South-East Asia.

The key socioeconomic challenges ahead are quickly stated as: (i) population aging as traditionally measured through aging from above (i.e., an increase in life expectancy) and aging from below (i.e., a reduction in total fertility); (ii) changes in family structure and the capacity and willingness to take care of the elderly, which is linked with reduced fertility but also with urbanization and other trends (such as increasing divorce rates); and (iii) rising education and female labor force participation, which creates opportunities but also challenges for social programs.

While population aging as a phenomenon has started to get attention in policy circles, the main response so far has been to propose more saving efforts and to initiate a half-hearted and moderate increase in the EPF retirement age, with little recognition that more is inevitably needed. Little attention has been paid to the need to rethink how to define and measure population aging in a world where individuals age healthier or to understanding that population aging is not only here to stay but will continue to advance. Against such an assessment, increased saving efforts for each younger generation will not work, as they will lead to ever-increasing contribution and savings rates that are not optimal for individuals. The idea that the ultimate solution to population aging is the labor market and an increase in effective retirement age in parallel with increasing life expectancy has not yet penetrated. Such an approach has consequences for the design of retirement income programs that need to also accommodate changes in family structure and increasing female labor force participation (Holzmann 2013b).

4. Suggestions for Reform Directions

Moving from the many challenges of the Malaysian old-age financial protection system discussed above to action requires prioritization of needs and reform options to choose from. As regards the prioritization of reform needs and actions, the following priority list is suggested:

- Developing unifying conceptual framework on social protection that can be used to set out the basic objectives and ties the different current and reformed programs together
- Addressing the low accumulations under the EPF program that are totally inadequate to provide income support in old age except for the top deciles
- Introducing some mandated annuitization of the accumulations at or after retirement as traditional or market-based mechanism will not be sufficient to provide a welfare-improving consumption mechanism in old-age
- Closing the existing significant coverage gaps both with regard to risks (such as unemployment) and with regard to unserved populations (such as own-account workers and migrants)
- Eliminating barriers to labor mobility that exist under the current savings/social insurance provisions as they risk creating main obstacles for the development vision of the country.

The following provides suggestions for reform directions on some of these topics that are linked with the EPF and it offers a few considerations on other issues.

The income-smoothing pension pillar that shifts resources from individuals' period of activity into their period of retirement is the centerpiece of any mandated pension system whether unfunded (first pillar) or funded (second pillar). The poverty-oriented zero pillar and supplemental income-

oriented (voluntary) third pillar strongly complement the central pillar, particularly for low- and high-income groups, respectively.

The EPF is the centerpiece of the pension system for much of Malaysia's active population. In a longer-term vision, a reformed EPF may or should host – or at least be aligned with – the schemes for civil servants and the armed forces. As a result, development of the EPF toward a fully-fledged, income-smoothing pillar is a key requirement for a Malaysian pension system that aims to deliver to an aging population with changing family structures and increasing female labor force participation. The alternative is to let it wither and replace it with a new central pillar.

As the government thinks actively about strengthening the zero pillar with the introduction of a universal social pension – means-tested at individual or household level – it will become crucial to disburse individual accumulations as non-revocable life annuities. Otherwise, asset game-playing and benefit arbitrage will take place on a large scale, with negative consequences for the government budget. This is the experience in the region (particularly in Australia) and the rest of the world.

Also, the anticipation of life annuities at retirement, with annual indications about the projected level under current service assumptions, provides individuals much better information about the additional savings needed for retirement and other contingencies. Such needs may be covered, say, through the PRS scheme or voluntary contributions into a separate, individual EPF account.

Against this assessment, this section offers two alternative reform proposals for the EPF. The first proposal sketches a number of changes considered the bare minimum and includes the provision of annuities; the second proposal goes well beyond and suggests making the current EPF the reserve fund of a Notional Defined Contribution (NDC) scheme. The idea raised by the EPF to hand over to the government resources at retirement for them to offer public annuities is discussed in a separate subsection. The last subsection briefly sketches supplemental reform directions for the other pillars.

4.1 EPF: From a retirement savings investment fund to a fully-fledged pension fund

The key driver for this proposal is the central objective of a mandated, contribution-based, public old-age pension scheme: to offer a mechanism for transferring resources from the extended period when one is young, working, and earning to the shorter period when one is old, semi- or fully retired from the labor market, and with limited other resources. The absence of such a well-functioning mechanism creates welfare losses for individuals that become higher the less reliable the alternative instruments are – e.g., informal arrangements such as family and community, and financial markets for accumulation and disbursement (Holzmann 1990; Holzmann and Joergensen 2001). For disbursement, access to life annuities is critical (i.e., an instrument is needed to translate accumulations into a stream of payments till one's death). Phased withdrawals are an improvement over lump-sum withdrawals but are not a perfect substitute. Yet for most countries in the world, "plain-vanilla" life annuities offered by the financial sector do not exist or are shallow and not a good deal where they do. Government-provided annuities through social insurance schemes or public pension funds may cover this gap very effectively, as central provisions promise to offer economies of scale and scope in a well-run system. In addition, central provisions eliminate much of the differences in rates of return within cohorts and across generations. Informal arrangements such as the family can also substitute to some extent, but overall are much less effective for most individuals.

The specific goals of a public pension system are secondary drivers for the proposal and suggested changes: to offer adequate benefits that are affordable to the economy, financially sustainable, and robust to (economic, demographic, and other) shocks (Holzmann and Hinz 2005).

Against this background, a number changes in the EPF's operation are proposed. Next, implementation alternatives of the new annuity component of the EPF are presented, followed by some guidance on next steps.

a. The minimum reform scenario: seven proposed key changes to EPF operation

(i) Mandating some annuitization for all participants from a selected post-retirement age onward.

Such a system feature cannot and should not be outsourced to the private sector. Provision of annuities by competing private sector insurance companies can add no advantage as they cannot offer economies of scale and scope; worse, in view of the asymmetric information about actual life expectancy of the insured, their risk premium and thus costs must also be higher than that of a centralized (fully pooled) and well-run scheme. Advantages at the level of returns on investment may happen idiosyncratically for some insurance companies but not on average as long as the rates of return of the centralized system do not deviate systematically downward from the national average returns. For example, Sweden, a country with an extremely well-developed financial market and over 800 pension funds for the accumulation phase, decided to centralize the pay-out option via the government social insurance (NDC) scheme (see Koenberg, Palmer, and Sunden 2006).

To satisfy the population's preference for cash, a possible option may allow individuals at or after the minimum retirement age to make a commutation of, say, up to a one-third of the accumulated amount provided that the mandated annuity at effective retirement age covers at least $1.x$ ($x > 0$) times the publicly guaranteed minimum income level. A further version of this option could allow individuals to delay the beginning of the annuity till age 75 or 80, for example. The mortality premium for such a deferred annuity and the shorter period of receipt makes such an annuity much cheaper and opens more room for a commutation as a lump-sum or phased withdrawal. Deferred annuities that are bought at a younger age and start to pay out at much higher ages are gaining interest and significance in the U.S. and Europe, and may have welfare economic advantages (Milevsky 2005).

(ii) Reviewing the contribution split and replacing the existing approach with other and better-tailored provisions for housing, education, and health care. The multi-purpose approach had its charm but is now outdated and not the most effective way of pursuing housing, education, and health care objectives; these are likely to require much more hand-tailored approaches and individual choices of participation.

(iii) Reducing the overall contribution rate and introducing a contribution ceiling. The current new rate of 24% is too high and unnecessary under the new provisions. International experience suggests that contribution rates beyond 20% for retirement income purposes risk becoming counter-productive. The contribution ceiling has the purpose of giving room to voluntary retirement savings and limits the role of government for individuals with income that is, say, two or three times the national average.

(iv) Improving rates of return during accumulation and disbursement, thus bringing them closer to the (real) wage growth. The real wage growth per capita is the benchmark for a funded system, as this is the rate that needs to be beaten to make funding worthwhile. Such a target will require a revision of the overall investment strategy but will also be fostered by an annuity provision within

the EPF: as any ringgit stays, on average, longer within the EPF (about 50% more), the investment horizon also lengthens, thus allowing for a longer-term strategy that should offer higher rates of return.

(v) Setting an (increased) standard and minimum retirement age that is indexed with the projected remaining cohort life expectancy. The increased new but not yet effective retirement age of 60 is still too low in view of the remaining life expectancy of the population. A new standard retirement age of 65 by, say, 2025, should be announced now, with indexation to remaining life expectancy thereafter. A lower minimum retirement age can be envisaged but it needs to be indexed as well and minimum annuitization levels established (say 125% or 150% of a future social pension).

(vi) Including own account workers with minimum contributions. Own account workers should be mandated to pay a minimum lump-sum contribution into the EPF scheme. In addition, they may make additional voluntary contributions (as is currently the case). For the levying of the contribution, the decision environment should be made as conducive as possible; e.g., levying the pension contribution jointly with income tax prepayments. Having all own account workers in the EPF system should offer them a minimum old-age financial protection but should also facilitate mobility between own account and employee status.

(vii) Investigating options to include more currently uncovered persons under mandated and voluntary provisions and some targeted matching contributions. About 37% of the labor force currently remains outside any old-age financial protection scheme. To reduce this coverage gap, sustained efforts should be initiated to expand their coverage aggressively; the design and implementation efforts should be inspired by the burgeoning lessons from behavioral economics and finance. Examples include the creation of the appropriate decision environment for participation, such as the ease of contribution payment and advocacy (Knoll 2012).

b. Implementation of life annuities by the EPF – two key options

To provide life annuities, the EPF essentially has two main options, which differ in the way risk is shared across generations and cohorts and in how financial assets are accounted for.

(i) Option 1: Separation of accumulation and annuity disbursement. In this option, at or after retirement and with the request for a life annuity, an individual's assets are conceptually transferred from the accumulation pool to the decumulation pool, where they are treated as reserve capital as in any insurance company. As financial liabilities, the annuity promises need to be covered by the assets and priced according to their risk-return profile to be financially sustainable.

Any change in the financial commitments (e.g., an unanticipated increase in the life expectancy of some or all cohorts) requires an adjustment in the assets (additional contributions or adjustments in the risk-return profile) or more likely adjustments in the benefit level (cuts in nominal benefits or reduced indexation of future benefits) until the asset-liability balance is reestablished.

As the accumulation and decumulation phases are fully separated, any external shock needs to be addressed separately by the active and retired populations. Risk-sharing across these generations is typically not envisaged and even within the retired generation may be limited to the age or retirement cohort concerned. In consequence, the availability of other risk diversification instruments becomes even more important, such as the availability of CPI-indexed gilts to guarantee real annuity benefits or, perhaps, the availability of life-indexed bonds for some or all retired cohorts.

While the accumulation and decumulation assets are fully segregated, as they follow different asset-liability considerations, the investment process for ear-marked asset classes may still profit from the same investment infrastructure inside and outside the EPF.

(ii) Option 2: Integration of the accumulation and disbursement phases. In this option, the value of the initial annuity is calculated as in option 1 by taking the individually accumulated funds and applying the remaining cohort life expectancy and expected rate of return of the retirement assets. However, when it comes to establishing the financial sustainability of the scheme, this approach allows risk-sharing across generations and all cohorts.

As the scheme remains a defined contribution type benefit during the accumulation phase, the liabilities for those still working are, in principle, by definition covered by their assets; i.e., the accumulated assets measured at market prices. The intergenerational link is created by policy decisions and the way assets and liabilities for all generations are linked, and specifically by the rules of the rebalancing mechanism between liabilities and assets for all generations: what indexes are adjusted, by what share, and over which period. At one extreme, if only the annual adjustment index for benefits in disbursement is used, we are back to option 1 and the full burden of the shock is borne by those already retired. If only the annual indexation of the account value is used (i.e., the internal rate of return of the funded defined contribution (FDC) scheme), the other extreme prevails, as all or most of the adjustment is borne by the active population (including those on the verge of retirement as their initial pension is also affected). All retirees are safeguarded if their pension is fully price-indexed; if their pension is price- and return-indexed, they would bear some share. And any combination between both extremes can be selected depending on the political choice of how to share adjustments between the current active and retired populations.

Rebalancing mechanisms that establish financial sustainability once the system is hit by a shock typically do not make the adjustment within a year as this might involve nominal cuts in accumulated assets and benefits in disbursement, both of which are politically unlikely. Thus, it will take a number of years before assets again match liabilities. In this case (assuming that the shock was negative, temporarily lowering the rate of return below the steady state), new entrants to the labor market and scheme would also be hit and would thus become part of the risk-sharing mechanism. If the rebalancing mechanism takes even longer and becomes protracted, the risk-sharing gets close (or in some cases identical) to the reform proposal discussed next.

But first it should be stressed that this type of risk-sharing also has consequences for the provisioning and equity capital of the expanded EPF. If all annuities have full nominal or real guarantees (i.e., the EPF is like a life insurance company), then sufficient equity capital is needed to ensure solvency and liquidity within government-ordained risk parameters. As the EPF covers a large share of the population, these capital requirements risk being very high.⁷ However, with an approach that shares the risks (in particular for investment and longevity) within the pool, this capital requirements decrease and may become zero.

4.2 EPF: From a retirement savings investment fund to an NDC reserve fund

In a nutshell, such a reform direction would replace the EPF (with its FDC-based central accumulation and annuity-based central decumulation features) with an NDC scheme plus the EPF assets as a reserve fund to provide liquidity and protection against major and protracted shocks. Such a change

⁷ Reportedly, the estimated equity requirement for a full insurance option of the EPF amounts to some 20 billion ringgit.

sounds like a revolutionary step away from the current scheme, but actually it is not; it is more a question of framing that may hold a number of advantages.

The key proposed changes outlined in Section 4.1 (from (i) to (vii)) would remain identical, including the way the annuity is calculated. The main change is the calculation of the annual rate of return or, put differently, of the indexation of the individual account value, as follows:

In the current EPF scheme, the annual account indexation follows the published rate of return (“dividend”) that presumably reflects the profitability of the financial investments over the last year (or some smoothed average).

In an NDC scheme, the notional rate of return with the presence of a large reserve fund is a weighted average between the return on the pure unfunded scheme (i.e., the wage sum growth or the internal rate of return an unfunded scheme can pay) and the rate of return of the reserve fund. With reserve-fund considerations, the weights are not simply the share of the pay-as-you-go (PAYG) asset and the financial asset in total assets (as it would be if no liquidity and shock reserve considerations existed), but the weights depend on the policy decision of how much of the liabilities the financial assets should cover. If 100%, then we are back to the proposal of Section 4.1 and the return of the PAYG asset plays no role, only that of the financial asset. If no reserves are required, then essentially they may be run down before contributions are again required or, alternatively, the accumulations can be higher indexed until reserve fund considerations become binding.

So what kind of advantages would one want to take into account to consider such a reform direction? There are a number of possible key arguments:

(a) Higher indexation/remuneration of the account values and thus higher replacement rates upon retirement. In emerging and not yet high-income economies, the wage sum growth rate is typically higher than the achievable rate of return on financial assets. This empirical observation is in contrast to economic textbook assumptions where under identical production functions, lower capital stock and higher labor stock would suggest the reverse. It may be explained by differences in the production function, inefficiencies of the financial sector in emerging economies, and an atypical and U-shaped growth path of the labor income share in national income during development. But whatever the reason, under the current $w \gg r$ reality, i.e. wage growth w much larger than the rate of remuneration or dividend d , workers have difficulty achieving higher replacement rates as wage growth outpaces accumulation growth.

Since the start of the EPF’s operation in 1952, the dividends have been well documented and the yearly geometric average, inclusive of the year 2013, amounts to 6.12%. As (an underestimate of the) proxy for the contribution/wage sum, we use the (geometric) average nominal GDP growth, which amounts to 9.71% for 1956-2013, the period for which data are available; for the same period, the average dividend is 6.26%. The relevant difference of 3.25% p.a.⁸ translates over a period of 20 years into an almost 100% higher notional account accumulation and replacement rate in percent of last wage (assuming nominally constant rates of dividends and GDP); over 40 years, the difference is almost 300%. This wage sum growth-dividend rate gap is likely to continue in this magnitude for decades to come as wage growth during catch-up growth typically exceeds GDP growth while dividend rates stabilize or get reduced.

⁸ The relevant difference is correctly calculated as $(1+w)/(1+r) - 1$, not simply the arithmetic difference of $w-r$.

Figure 3 offers estimates of contribution rate requirements for selected target replacement rates under varying assumptions on the differences in the wage growth-accumulation rates. It should serve to make the point that as long as the accumulation index, i.e. dividend trails the wage growth rate much higher contribution rates will be needed to achieve target income replacement rates at retirement. For these explorative calculations we assume a contribution period of 40 years and the length of pension receipt of 20 years, and we explore dividend rates of 0 to 15%pa compared to a wage growth of 10%pa.

Figure 3: Required Contribution Rate for Alternative Target Replacement Rates under Varying Dividend Rate/Wage Growth Assumptions

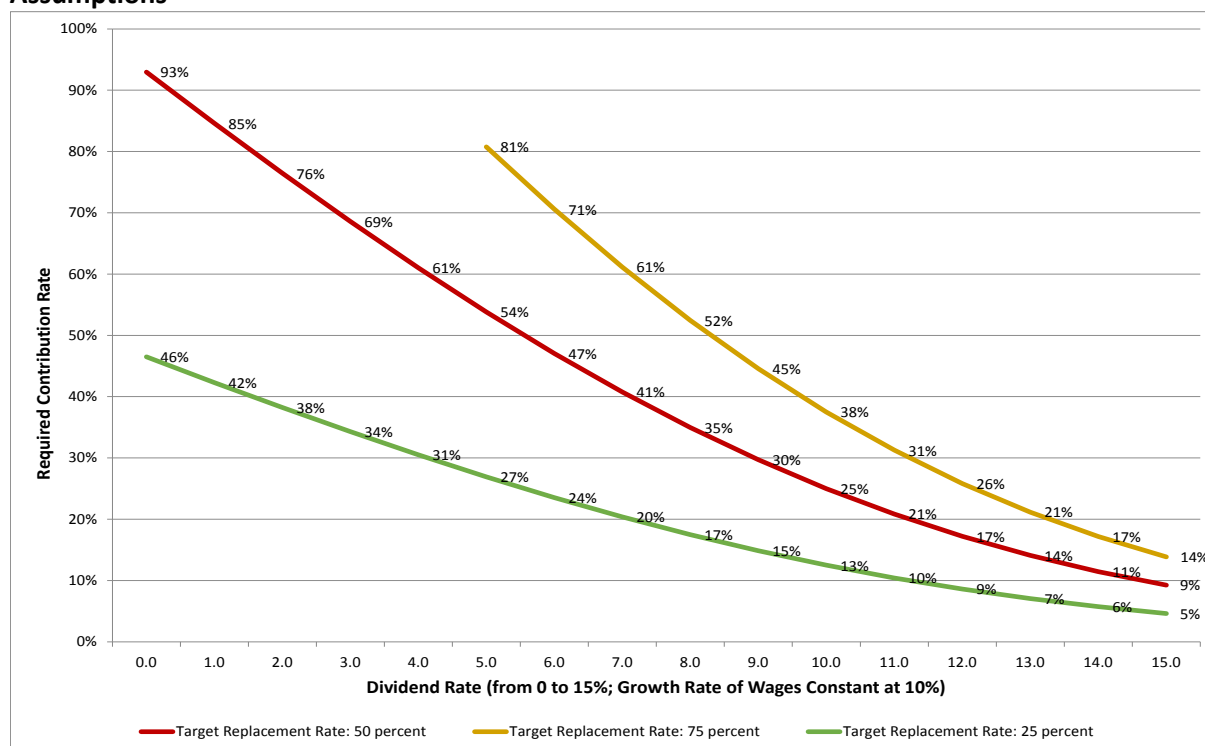


Figure 3 confirms the Malaysian reality outlined in Table 1: With a contribution rate of some 24 percent and a dividend rate of some 3.5 percentage points under the wage growth rate, the replacement rate cannot be well above 30 percent.

(b) Higher rates of return and expected higher retirement benefits may also strengthen incentives to participate in the system and thus contribute to coverage expansion, in particular for low-income groups. For these groups, one could even imagine a temporary/initial matching contribution financed within the risk pool to motivate their participation.

(c) The new rate of return/account index resulting from a mixture of funded and unfunded provisions not only promises higher remuneration for some protracted period of time but also offers better risk diversification than a funding-only approach.

(d) The promise of higher returns and higher benefits/replacement rates should also make it politically easier to enact the needed upward adjustment in the retirement age(s). To some extent, it is a self-fulfilling promise, as later retirement in a defined contribution scheme leads to higher benefits.

(e) Last but not least, the NDC approach is equivalent to extended income- and risk-sharing across generations. As those in the younger generation can be expected to be better off than their parents,

this allows for some front-loading of benefits for the latter without putting financial sustainability into question and thus an undue burdening of the future generations.

There are also a number of counter-arguments against this proposal, perhaps most importantly that the EPF as reserve fund may be subject to less pressure to maximize the dividend level while government enjoys creating implicit liabilities that risk growing without balancing assets.

The proposal for reform directions for the EPF scheme is summarized as follows:

- The lack of any, even voluntary, life annuity provisions in the EPF scheme exposes all members to the longevity risk. Some members may be able to insure against this risk through informal family or community arrangements, while others may be able to buy expensive commercial insurance contracts domestically or abroad. The majority will have insufficient and inefficient risk pooling and will thus suffer major welfare losses. These losses are expected to increase as the traditional informal arrangements wither with reduced family size and urbanization, and when market-based arrangements do not spring up autonomously (and will be second best even if they do).
- As the central (half) pillar of income-smoothing in Malaysia's old-age financial protection system, the EPF needs to complement its accumulation phase with a decumulation phase that is life annuity-based. The current lump-sum withdrawal or any phased withdrawal does not deliver the pooling instrument needed to address the longevity risk.
- For the structure of the life annuity arrangements, a number of options exist that differ by the level of risk pooling across cohorts or generations, such as risk pooling among each age cohort; across the current generation of retirees; across the current generation of contributors and retirees; or across those plus a subset of future generations.
- Some pooling across generations can be motivated by the uncertainty about longevity shocks given unpredictable medical progress. Burdening only the relevant cohorts may lead to a highly inequitable outcome.

4.3 EPF: Remain a retirement investment fund but let government provide the annuities

In this reform scenario, some or all seven reform suggestions of Section 4.1 would be implemented except one: the annuities would not be offered within the EPF but outside, with the government in charge. Technically, at the moment of retirement (or a specified later date), the balances earmarked for retirement would be handed over from the EPF to government/a new government institution, say the Government Annuity Fund. This institution would be in charge of paying the annuities based on the transferred amount per individual and the periodic benefit indexation. All investment and longevity risk would be borne by the government. Government would get what it wanted – annuity payments for individuals, but would it be interested in undertaking this business, and if so, under what conditions?

There are a few arguments why the government may be interested in offering the annuities, particularly if the alternative is no annuities at all. First, if access to annuities is welfare enhancing, the government should offer them if the risks are acceptable, as societal welfare is increased. Second, the availability of annuities to the lower income group reduces the current and future fiscal burden of social assistance provisions in a means-test program.

However, the government may have good reasons to be reluctant to take this on without major changes, including in the operation of the EPF. First, as a major share of the annuities will be extremely modest, the government will come under pressure to increase the level of calculated

annuity levels. Second, to reduce this pressure, the government will need to force the EPF to eliminate any revenue dissipation through higher contribution bases or outright collection. Third, even with the best management control, annuities for all will create a huge new implicit liability for the government that may become very expensive and disruptive to the fiscal balance. Last but not least, enforcing policies on the EPF can be quite expensive from a political standpoint.

4.4 Supplementary reform directions

Assuming that a central EPF pillar with accumulation and annuity disbursement is established, as proposed, there are still many other reform needs across all pillars. However, the content and implementation of these pillar reforms will crucially depend on the results of analytical work yet to be undertaken (suggestions are presented in Section 5). This last subsection very briefly covers three topics that require attention (almost) independent of the outcome of the empirical work: (a) considerations for select old-age pillars' reform; (b) establishment of adequate benefits other than old-age; and (c) development of reform directions and the governance structure of social security/social protection.⁹

a. Considerations for select old-age pillars' reform

In any retirement scheme, three crucial issues need attention: consistent incentives for labor force and retirement decisions; consistent tax treatment across and within pillars; and benefit gaps. All three issues are relevant in Malaysia.

Consistent incentives for labor force participation and retirement decisions across pillars are needed as the lack thereof is detrimental for coverage, benefit adequacy, and financial sustainability. Of particular concern is the relationship of the central income smoothing pillar (i.e., the EPF) with the poverty-oriented zero pillar and the supplemental provisions in pillars three and four. If the design and implementation in these three pillars distort labor market incentives, then even the best design in the central pillar is of little help (Holzmann 2013b).

The Malaysian government has been reflecting for some time on how to strengthen the zero pillar and how to decide on key design and implementation issues: universal versus means-tested provisions; how to means-test; and how to integrate with the central pillar (say minimum access and retirement age; see Grosh *et al.* 2008 and Holzmann, Robalino and Takayama 2009). Less attention has been paid to the link between the central pillar and the supplemental provisions in pillar four (such as housing, health care, and long-term care) – now and in the future. A recent OECD publication (2013b, Chapter 2) offers useful analyses and data from OECD economies.

Consistent tax treatment across pillars is critical to avoid distortions for individual labor supply and savings decisions, but also to avoid main inequities through redistributions from the poor to the rich, as well as unproductive revenue shortfall. The latter typically emerges by offering tax incentives for voluntary contributions by employers and individuals to supplemental retirement income schemes, and distortions typically emerge by applying different provisions across pillars as well as within.

Malaysia is no exception to such differentiated tax treatments. For example, under the occupation schemes, the tax treatment is differentiated between the Section 150 tax-approved funded occupational scheme and the tax-approved insured scheme; while the former is free of tax with

⁹ The underlying and independently developed messages are not too different from recent other observations and recommendations that have been made, such as by Ong and Hamid (2010), Othman (2010), Asher (2011), and World Bank (2012).

regard to investment income and capital gains, life insurance funds are taxed at 8% and subject to capital charge under the risk-based capital framework (Othman 2010, slide 14). The new PRS scheme profits from special tax exemptions for premiums that the financial industry wants to have increased, as the take-up is below expectations. However, international experience suggests that voluntary provisions react only moderately to tax incentives and matching contributions, while having no overall effect on retirement savings; they only displace unsubsidized savings (Hinz *et al.* 2013).

Any policy review and reform direction will need to address benefit inconsistencies and gaps in old-age financial protection. The most important ones concern disability and survivor benefits. For private sector workers, disability benefits are of defined benefit type but are not integrated with the defined contribution-type retirement scheme. If someone becomes disabled, his interest is to stay so and not return to work, as with a disability benefit he has an annuity and potential survivors benefits, and can keep the accumulations with the EPF; these incentives are evident in the rising number of disability claims. But the coverage is not open to all employees, only those who earn above RM 3,000 per month. And coverage for disability benefits requires only the employer's contribution while coverage for work-injury benefits has both employee and employer's contributions; it should be the other way around. Similar inconsistencies and gaps can be found with the survivors' pension, including major differences between civil servants and EPF members.

b. Establishment of benefits other than old-age

Any policy review and reform direction will also need to look at benefits other than old-age benefits; key examples include unemployment benefits, health care coverage, and long-term care.

Unemployment benefits are a critical part of a modern economy as they allow linking with flexible labor markets and income protection to create an enabling environment for creative destruction and economic change. In line with the "New Economic Model," the government engaged in 2010 with the ILO to prepare proposals for an unemployment insurance model (ILO 2012) that were discussed but eventually shelved in 2012 for diverse reasons.

This pause could be productively filled by rethinking the design and implementation of the currently proposed defined benefit-type insurance approach. While there are strong arguments for unemployment benefits, there are strong economic arguments against a traditional insurance design, particularly in emerging economies still characterized by high asymmetric information in the labor market. A design innovation developed and successfully implemented in Chile is much more promising for keeping in check the moral hazard and adverse selection problems of traditional insurance benefits (see Vodopivec 2013). Essentially, the benefit consists of individual unemployment savings accounts supplemented by some social pooling, an approach more consistent with Malaysia's approach to social insurance. As reforms in Austria, Italy, and Korea show, this would also be a convenient way to reform the severance pay (retrenchment) benefit while offering additional options for retirement savings (Holzmann and Vodopivec 2012).

Access to health care benefits is a critical concern for the elderly as the frequency as well as costs per use typically increases with age. Health care savings accounts are only of limited use as by definition the resources are very finite but the potential costs and expenditure are not. To address the risk and resource mismatch requires a pooling mechanism for which there are essentially two polar options: (i) a national health service; or (ii) a public or private health insurance scheme. National health services have full coverage and are typically cheaper but also have more limited services compared to the alternative, which typically has less complete coverage, is more expensive, and offers high-

quality service but only for those who can afford it. Malaysia seems to work currently with a triage of low out-of-pocket copayments to publicly subsidized hospital care on one hand and emerging private health insurance coverage on the other (Ong and Hamid 2010). Such indecision may be politically convenient in the short run but is costly in the middle and long term.

Access to long-term care for the old and very old is an issue that all countries in the world will have to grapple with; in the most advanced and aged countries, this is already high on the political agenda. Given its stage in population aging and the current reliance on family and community structure, the topic does not seem to be of urgency for Malaysia. However, to handle the problem in the future, decisions now (of the lack thereof) have a bearing on the ultimate solution set. If some insurance solution is envisaged for the future, the policy decision making and implementation need to start now.

c. Development of reform directions and governance structure

To initiate a successful reform and make it happen requires political leadership, convincing options to choose from, and a governance structure that assures best implementation. None of these seems to be in place at the moment in Malaysia. At the political level, there seems to be no appetite for any comprehensive social security reform, yet this may be linked to the lack of convincing analyses in the social security arena across all policy fields and the lack of domestically well-developed and argued policy options to translate policy gaps into policy opportunities. The preparation of the 11th 5-year plan starting in 2016 may provide such an opportunity.

This subsection offers a brief proposal on the process and governance structures needed for such reform directions to come to fruition and be implemented in the best way, such as:

- (1) An assembly of social security stakeholders that covers the main groups in society inside and outside government should give voice to the perceived gaps and possible reform directions. The main purpose is to have a wide net on issues and proposed actions that are recorded, taken note of, and summarized in report.
- (2) A social security council (or an existing institution that can do the work) brings together the key policy players inside and outside government and serves to prioritize and commission analytical work on knowledge gaps but also on proposals for reform options to be investigated. The working group in charge of the alternative proposal offers neutral assessment for decision and discussion at the highest government level.
- (3) The successful preparation and implementation of a social security reform (or a set of reforms) requires a special temporary structure with political leadership and direct access to the government head. Experience from across the world can guide such efforts.
- (4) To assure consistency of content and processes across social programs, including data collection, it is best if a single ministry is in charge. As putting all programs into one ministry may be too much of a managerial challenge, the typical choice is either to: (i) link all social programs (including health care) together into a Ministry of Social Affairs and Health and keep labor outside (perhaps with economic affairs); or (ii) keep all health care-related issues in a separate ministry but put social security with labor, and create a Ministry of Social Protection.
- (5) Whatever the approach chosen, experience with government programs that are applied to markets with a high level of asymmetric information (such as finance and labor) shows that it is

important to separate policy setting from policy implementation, and implementation from regulation and supervision.

5. Next Steps: Analytical Agenda for an Informed Reform Discourse

The reform of social security in an aging and globalizing country such as Malaysia is not the affair of a few months or a few years but an ongoing work. But every journey starts with a small step and the information about which steps to take first and when is critical. Information for an evidence-based policy approach needs to come from analytical work undertaken across a whole range of institutions but is best guided by some basic information, financial support, and the right incentives. This last section sets out ideas about such an analytical agenda for conceptual thinking and also for the rigorous empirical work that is needed.

5.1 Exploring existing data sources

Any useful analytical work needs to rely on good data, which are often difficult to access or do not exist at all. Yet before venturing into primary data collection through *ad hoc* surveys, existing administrative and survey data should be explored as much as possible, and the knowledge gained from these used to inform other surveys.

The EPF had the great foresight to provide the Social Security Research Center (SSRC) access to an anonymized sample of 30,000 fund members. These data are currently undergoing cleaning, preliminary analysis, and preparation for managed access by researchers in Malaysia. This small step will be a giant leap for local researchers' ability to conduct data-based research, thereby developing and testing hypotheses and better understanding the actual functioning of the EPF and eventually individuals' behavior. This exercise is the first of its kind in the region and the resulting articles will further enhance the EPF's good reputation.

In addition, there are likely other administrative public data sources that can be accessed (such as from SOCSO), as well as private administrative data sources (e.g., occupational or individual savings programs such as PRS) and public surveys (e.g., household and expenditures surveys and labor force surveys). To date, the latter could be little exploited as access has been limited but change is underway. By merging these data with EPF sample data, major additional insights will be gained that can inform policy at this stage. The work at SSRC should continue to focus on making such datasets (and perhaps synthetic databases), available to the Malaysian research community.

5.2 Thinking about new surveys: SHARE, Financial Capability Survey, etc.

While access to and intensive use of existing administrative and survey data will offer enormous progress toward evidence-based policy, these data fall short given two critical restrictions: (i) they are often cross-section data, not panel data, which limits the conclusions that can be drawn as they do not cover well (if at all) critical aspects of an aging society with regard to savings pattern or health care issues; and (ii) the data are often not comparable to other countries, thus limiting any benchmarking.

To address these methodical restrictions, progress has been made in North America, Europe, and select countries in the region (Japan and Korea) with the implementation of specific panel data on aging. SHARE (the Survey on Health, Ageing and Retirement in Europe), now in its 5th round, was inspired by panel data work in the U.S., but has since eclipsed this effort; it is applied in 23 countries

inside and outside of Europe and has become the worldwide standard.¹⁰ Malaysia should seriously consider participation in SHARE's module-based program and approach. Access to the methodology is free; the total implementation costs of each round (every two to four years) depend on the scope of modules covered, the addition and testing of country-specific questions, the statistical significance desired for specific areas, etc. Costs are reported to be about US\$250 per full personal interview and database operation, with about 2,000-6,000 interviews undertaken per country.

Another important topic for attention and implementation is a survey on financial capability, also best done repeatedly and in a panel setting. The notion of financial capability goes beyond financial literacy and the knowledge learnt and applied, as it also covers individuals' attitudes and behavior and thus savings outcomes, topics in which researchers and policy makers are typically interested. A new methodology was developed to this end and tested in 12 countries across the world; the methodology is freely available (see Holzmann, Mulaj, and Perroti 2013).

5.3 Scenario projections: Institutional home and academic research

Policy reform discussions are always guided by financial projections of the revenues, expenditures, and balances of key social programs, in particular the "big ticket" items of pensions and health care. As scenario projections, they assist in the selection between alternative policy options.

The value of such projections is closely linked with the transparency of the underlying economic, demographic, and other assumptions, the quality of the projection model, including its validation against other models, and the credibility of the institution undertaking the projection.

Achieving this requires an independent institutional home where these projections are undertaken and from which they are published. For example, in the U.S., the annual Report of the Board of Trustees of the Federal Old-age and Survivors and Federal Disability Insurance Trust Fund¹¹ has a high credibility that is unmatched in most industrialized countries.

Undertaking projections that are of little value is a waste of financial and intellectual resources and offers little effective guidance for policy makers. Establishing a reputation beyond doubt would be a worthwhile undertaking for a consortium of academic and administrative institutions in Malaysia.

5.4 National and regional research and reform discourse

Social security covering social assistance and social insurance is a very broad and internationally fast evolving area, but the topic has a limited history of analytical research in Malaysia. The same applies to much of East Asia, although some research efforts and dissemination are being coordinated among China, Japan, and Korea. For the rest, there is a regional void in the social security arena waiting to be filled. ADB recently published a few good pension publications, but these were largely driven by one individual with limited institutional support. The Korea OECD office is largely focused on OECD countries and topics. And the Manila office of the International Social Security Association, which covered research and event activities, was closed and replaced by sub-regional liaison offices.

The liaison office for Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam is housed in Malaysia by the Social Security Office, and the steering committee chair is from the EPF. Such a structure would favor

¹⁰ For comprehensive information, see www.share-project.org, and see Börsch-Supan and Jürges (2005) for methodological questions.

¹¹ The latest report was published in May 2013; see Board of Trustees (2013).

the SSRC to take the regional lead and work with regional research institutions on specific and focused topics, offering intellectual stimulation and timely feedback at a time when the domestic discourse is limited. In addition, the 2013 Ageing Conference and the discussion with invited speakers exhibited interest in and support for the SSRC to take the regional lead.

The results from a partially regionally-oriented policy work program have the potential to be very relevant for close neighbors in Indo-China (Myanmar, Laos, Cambodia, Vietnam, and possibly also Thailand) that currently have no regional knowledge center to turn to. Last but not least, having a regional program allows for testing the water; keeping it small and selective should make it manageable. As a starting topic, I would suggest regional pension coverage issues and replication of a widely regarded and quoted study from Latin America and the Caribbean (Rofman and Oliveri 2012).

References

- Asher, Mukul G. 2011. "Malaysia: Pension system overview and reform directions." In Park, ed. *Pension Systems and Old-Age Income Support in East and Southeast Asia: Overview and reform directions*. London and New York: Routledge and ADB.
- Börsch-Supan, Axel, and Hendrik Jürges. 2005. *The Survey of Health, Aging, and Retirement in Europe – Methodology*. Mannheim: Mannheim Research Institute for the Economics of Aging (MEA).
- Brown, Jeffrey, R., S. Mitchell Olivia, James M. Poterba, and Mark J. Warshawsky. 2001. *The Role of Annuity Markets in Financing Retirement*. Cambridge, MA: MIT Press.
- Davidoff, Thomas, Jeffrey R. Brown, and Peter A. Diamond. 2005. "Annuities and Individual Welfare." *American Economic Review* 95 (5): 1573–1590.
- Grosh, Margaret, Carlo del Ninno, Emil Tesliuc, and Azedine Ouerghi. 2008. *For Protection & Promotion: The Design and Implementation of Effective Safety Nets*. Washington, DC: World Bank.
- Hinz, Richard, Robert Holzmann, Nuriyuki Takayama, and David Tuesta. 2013, eds. *Matching Contributions for Pensions: A Review of International Experience*. Washington, DC: World Bank.
- Holzmann, Robert. 1990. "Pension Reform, Financial Market Development, and Economic Growth: Preliminary Evidence from Chile." *IMF Staff Papers* 44, June, 149-178.
- _____. 2013a. "Global pension systems and their reform: Worldwide drivers, trends and challenges." *International Social Security Review* 66 (2, April-June): 1-29.
- _____. 2013b. "An Optimistic Perspective on Population Aging and Old-Age Financial Protection." *Malaysian Journal of Economic Studies* 50 (2): 107-137.
- _____. 2014. "Addressing Longevity Risks through Private Annuities: Issues and Options." Paper prepared for the *22nd Annual Colloquium of Superannuation Researchers*, CEPAR and ABS' School of Risk and Actuarial Studies, New South Wales University, Sydney, July 7-8, 2014.
- Holzmann, Robert, and Richard Hinz. 2005. *Old-Age Income Support in the 21st Century: An International Perspective on Pension Systems and Reform*. Washington, DC: World Bank.
- Holzmann, Robert, and Steen Joergensen. 2001. "Social Risk Management: A new conceptual framework for social protection, and beyond." *International Tax and Public Finance* 8(4): 529-556.

- Holzmann, Robert, and Johannes Koettl. 2014. "The Portability of Pensions, Health, and other Social Benefits: Concepts and Issues." *CESifo Economic Studies* (Advance Access published January 13, 2014; doi:10.1093/cesifo/ift017).
- Holzmann, Robert, and Yann Puget. 2012. "Social Protection for Temporary Migrant Workers: what programs serve them best?" In Irena Omelaniuk, ed. *Global Perspectives on Migrant and Development: GFMD Puerto Vallarta and Beyond*, A Publication by the Global Forum on Migration and Development, New York-Heidelberg: Springer, pp. 61-85.
- Holzmann, Robert, and Milan Vodopivec. 2012, eds. *Reforming Severance Pay: An International Perspective*. Washington, D.C.: World Bank.
- Holzmann, Robert, with Johannes Koettl and Taras Chernetsky. 2006. *Mobility Regimes of Pension and Health Care Benefits for International Migrants: An Analysis of Issues and Good Practices*. Global Migration Perspectives. Geneva: Global Commission on International Migration.
- Holzmann, Robert, Noor Azina Binti Ismail, and Noor Ismawati Mohd Jaafar. 2014. "The EPF Data Sample: Structure, Content and First Analysis." Social Security Research Centre, Working Paper No. 140x. Kuala Lumpur: University of Malaya (in preparation).
- Holzmann, Robert, Florentina Mulaj, and Valeria Perotti. 2013. *Financial Capability in Low and Middle Income Countries: Measurement and Effectiveness*. Knowledge Management Report on the Russia Trust Fund on Financial Literacy & Education. Washington, D.C.: World Bank; conference edition.
- Holzmann, Robert, David Robalino, and Nuriyuki Takayama. 2009. *Closing the Coverage Gap: The Role of Social Pensions and Other Retirement Income Transfers*. Washington, D.C.: World Bank.
- ILO. 2012. "Supporting and Facilitating the Design of a UI system in Malaysia." Overview and project documents available at: <http://www.ilo.org/gimi/gess/ShowProjectPage.do?pid=1605>
- Koenberg, Bo, Edward Palmer, and Annika Sunden. 2006. "The NDC Reform in Sweden: The 1994 Legislation to the Present." In R. Holzmann and E. Palmer (eds). *Pension Reform – Issues and Prospects for Non-Financial Designed Contribution (NDC) Schemes*. Washington, D.C. World Bank, 467-92.
- Knoll, Manfred. 2010. "The Role of Behavioral Economics and Behavioral Decision Making in Americans' Retirement Decisions." U.S. Social Security Administration: Social Security Bulletin 70 (4).
- Liew, Hann. 2012. "Private Retirement Scheme (PRS) – A Guide to Malaysia's Voluntary Private Retirement Scheme." <http://savemoney.my/private-retirement-scheme-prs-a-guide-to-malysias-voluntary-private-retirement-scheme>
- Milevsky, A. Moshe. 2005. "Real Longevity Insurance with a Deductible: Introduction to Advanced-Life Delayed Annuities (ALDA)." *North American Actuarial Journal* 9(4): 109–122.
- Milevsky, A. Moshe. 2013. *Life Annuities: Optimal Products for Retirement Income*. The Research Foundation of the CFA Institute. www.cfapubs.org
- Mitchell, S. Olivia, John Piggott, and Noriyuke Takayama. 2011, eds. *Revisiting Retirement Payouts: Market Developments and Policy Issues*. Oxford: OUP.
- Ong, F.S., and Hamid, T.A. 2010. "Social Protection in Malaysia – Current State and Challenges." Paper prepared for the Economic Research Institute for ASEAN and East Asia (ERIA) Project on Social Protection. Organisation for Economic Co-operation and Development (OECD). 2013a. *Pension at a Glance Asia/Pacific 2013a*. Paris: OECD.
- _____. 2013b. *Pension at a Glance 2013 – OECD and G20 Indicators*. Paris: OECD.

- Othman, Syed Hamid. 2010. "Malaysia's Pension System from a Multi-Pillar Perspective." Paper presented at the International Social Security Seminar, July 13-14, 2010. Kuala Lumpur.
- Park, Donghyun. 2009. "Ageing Asia's Looming Pension Crisis." ADB Economics Working Paper Series 165, Asian Development Bank.
- _____, ed. 2011. *Pension Systems and Old-Age Income Support in East and Southeast Asia: Overview and reform directions*. London and New York: Routledge and ADB.
- Park, Donghyun, Sang-Hyop Lee, and Andrew Mason. 2012. *Aging, Economic Growth, and Old Age Security in Asia*. Cheltenham, UK and Northampton, MA, US: Edward Elgar and ADB.
- Rajkumar, Sudhir, and Mark Dorfman. 2011, eds. *Governance and Investment of Public Pension Assets*. Washington, DC: World Bank.
- Rofman, Rafael, and Mauricio L. Oliveri. 2012. "Pension coverage in Latin America: Trends and determinants." *Social Protection Discussion Paper No. 1217*. Washington, DC, World Bank.
- Samad, Suhaimi Abd and Norma Mansor. 2013. "Population Ageing and Social Protection in Malaysia." *Malaysian Journal of Economic Studies* 50 (2): 139-157.
- Yaari, Menahem E. 1965. "Uncertain Lifetime, Life Insurance and the Theory of the Consumer." *Review of Economic Studies* 32 (2): 137–150.
- Vodopivec, Milan. 2013. "Introducing Unemployment Insurance to Developing Countries." *IZA Journal of Labor Policy* 2(1). DOI: 10.1186/2193-9004-2-1, URL: <http://www.izajolp.com/content/2/1/1>.
- World Bank. 2012. "Malaysia Elderly Protection Study." Human Development Unit – East Asia and Pacific Region, February 13, 2012. Washington, DC: World Bank (restricted).

Table 1. Multi-Pillar Pension Taxonomy

| <i>Pillar</i> | <i>Target groups</i> | | | <i>Main criteria</i> | | |
|---------------|----------------------|------------------------|----------------------|--|----------------------|--|
| | <i>Lifetime poor</i> | <i>Informal sector</i> | <i>Formal sector</i> | I. Characteristics | <i>Participation</i> | <i>Funding/collateral</i> |
| 0 | X | x | x | “Social pension,” at least social assistance, universal or means-tested | Residual | Budget/general revenues |
| 1 | | | X | Public pension plan, publicly managed, defined-benefit or notional defined-contribution | Mandated | Contributions, perhaps with financial reserves |
| 2 | | | X | Occupational or personal pension plans, funded defined-benefit or funded, defined-contribution | Mandated | Financial assets |
| 3 | X | X | X | Occupational or personal pension plans, funded defined-benefit or funded, defined-contribution | Voluntary | Financial assets |
| 4 | X | X | X | Homeownership, family support and so forth | Voluntary | Financial assets |

Note: The size of x or **X** characterizes the importance of each pillar for each target group.

Source: Holzmann and Hinz 2005.

Annex Table 2. Basic System Architecture by Region, 2011 (and 1990)

| | Pillar 0 | | Pillar 1 | | | Pillar 2 | |
|----------------------------|-----------|-------|------------|-----|----|-----------|-----|
| | Targeted | Basic | NDB | NDC | PF | FDC | FDB |
| East Asia & Pacific | 4 | 3 | 8 | 1 | 10 | 1 | 0 |
| Europe & Central Asia | 11 | 4 | 28 | 5 | 0 | 15 | 0 |
| High income: OECD | 8 | 9 | 16 | 2 | 0 | 3 | 3 |
| Latin America & Caribbean | 16 | 2 | 29 | 0 | 0 | 9 | 0 |
| Middle East & North Africa | 1 | 1 | 17 | 0 | 0 | 0 | 0 |
| South Asia | 3 | 0 | 2 | 0 | 3 | 1 | 0 |
| Sub-Saharan Africa | 3 | 2 | 30 | 0 | 4 | 2 | 0 |
| 2011 Total | 46 | 21 | 130 | 8 | 17 | 31 | 3 |
| Grand Total | 67 | | 155 | | | 34 | |
| 1990 Total | 20 | 10 | 140 | 0 | 17 | 2 | 3 |
| Grand Total | 30 | | 157 | | | 5 | |

Notes: NDB/NDC: Notional Defined Contribution Scheme; FDC/FDB: Financial DC or DB scheme; PF: Provident Fund

Source: Holzmann 2013a.