



**PRIVATE PENSION SYSTEM: DEVELOPMENTS AND ISSUES
CONFERENCE PROCEEDINGS OF THE OECD/IOPS GLOBAL
PRIVATE PENSIONS FORUM**

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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FOREWORD

Pension fund supervision has been becoming increasingly important, not only due to the large size of pension assets which have been rapidly accumulated in the past decades around the globe, but also owing to pension reform, e.g. the shift away from DB to DC pension plans, which consequently requires higher demands for governments and supervisors in order to ensure safety of pension assets and protect interests of beneficiaries.

Organisation for Economic Co-operation and Development (OECD) and the International Organisation of Pension Supervisors (IOPS) organised the Global Private Pensions Forum in Beijing, China on 14-15 November 2007. The topics of the conference this year covered a number of issues which were identified to be of importance to both the countries that either have mature and developed funded pension systems and those countries that have only recently undertaken pension reforms; the topics included (1) Pension Investments and Capital Market Development; (2) The Impact of Incentives on Pensions and Insurance Product; 3) Pensions Supervisory Structures; (4) Annuities – Provisions and Risks. In addition, a separate panel was devoted to the topic of Developments in Asian Pensions and Insurance Markets. The aforementioned topics were discussed in depth at the meeting within the context of the OECD and IOPS Principles and Guidelines which provide a unique framework for countries introducing and consolidating pension reform strategies.

This current conference proceedings bring together papers presented at the Forum, which it is hoped will promote discussion and stimulate debate on matters and issues concerning pension fund regulation and supervision.

The first paper in this publication was prepared by China Insurance Regulatory Commission (CIRC). The paper reviews the existing pension system and insurance market in China, then discusses issues concerning how commercial pension insurance can play an important role in China's pension system. The following two papers were written by Edward Whitehouse, OECD, and Brigitte Miksa, Allianz Global Investors; both papers look at the pension arrangements in a range of Asian countries from the comparative perspective. Edward Whitehouse looks at the replacement rates (of average incomes) provided by public and mandatory pensions in Asian countries, while Brigitte Miksa reviews the current state of the private pensions markets in the region, and also provides some anecdotal evidence from their market research into what retirement products are requested by Asian consumers. In addition, the paper by Wayan Wijan, Ministry of Finance, Indonesia, gives an interesting overview on the pension system and recent reforms in Indonesia, in which latest statistics were cited and explained in depth.

The article by Yu-Wei Hu, Fiona Stewart and Juan Yermo, OECD, addresses the issue of how a deregulation of investment regulation could help improve the returns generated on the growing public and private pension assets in China, the results of which are supported by both empirical results and international experiences. In addition, Pablo Antolin of OECD looks at the incentives of tax on pension savings in OECD countries. In his paper current literature on this topic is reviewed, followed by results of a model giving the quantitative impacts of tax incentives.

Also included in this publication is an IOPS working paper, which looks at specifically at whether pension supervision should be included in an integrated supervisory framework (thereby gaining economies of scale and making use of synergies between sectors) or whether pension supervision is best handled via a specialized supervisory (due to the unique challenges raised by pension funds). The conclusion of the paper is that much depends on the context of the pension system in any country, and that benefits can be achieved from either model.

The last article – prepared by Colin Pugh, addresses the question of “what should be the main forms(s) of benefit payment at retirement?” and the advantages and disadvantages of each alternative, and the difficult question of who should provide such “products” (e.g. pension funds, insurance companies, other financial institutions or public authorities).

The above articles have addressed various issues – mainly from the regulatory perspective, related to retirement savings on which so many millions around the globe rely. We wish this publication will provide a good opportunity for readers to debate on these interesting and important topics and learn both good experiences and bad lessons from other countries, therefore ultimately contributing to establishment and development of well-functioning regulatory and supervisory structures in both OECD/IOPS member and non-member countries.

Ambrogio Rinaldi, Chairman, OECD Working Party on Private Pensions

John Ashcroft, President, IOPS

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PENSIONS AT A GLANCE

ASIA/PACIFIC EDITION

INTRODUCTION

Important note

These results are preliminary and should not be cited. They have been prepared for discussion by an experts meeting in Seoul on 19 and 20 November 2007. It is intended to publish the final report in the Summer of 2008.

Accurate presentation of pension systems of a country and the comparison of systems across countries are crucial parts of policy analysis. Yet such presentations and comparisons are far from easy. They require a well-thought-out methodology, access to detailed information on national systems, verification of information and results by country specialists and a network of pension experts to provide feedback to improve the quality and applicability of the research over time.

This study presents a range of indicators to enable comparisons between the countries of the Asia/Pacific region. It also includes data for key countries that are members of the Organisation for Economic Co-operation and Development (OECD). It builds on the OECD's *Pensions at a Glance* reports, published in 2005 and 2007, which looked at the 30 OECD member countries. It also reflects the work underlying the joint World Bank/OECD report *Pensions Panorama*, which explored the pension systems of 53 countries. These included a number in Eastern Europe/Central Asia, Latin America/Caribbean and Middle East/North Africa (Whitehouse, 2007).

Pensions at a Glance: Asia/Pacific is also joint work between the World Bank and the OECD, along with the OECD/Government of Korea Research Centre on Health and Social Policies (RCHSP).

The report was drafted by Andrew Reilly and Edward Whitehouse of the Social Policy division of the OECD Secretariat. Vararat Atisophon, a consultant to the OECD and members of KIHASA helped with the modelling of pension systems. The original collection of data on parameters and rules was carried out by Gautam Bharwaj, Director of the Invest India Economic Foundation and Stuart Leckie of Stirling Finance and their colleagues. The first model versions were developed by Rie Fujisawa and Edward Whitehouse of the OECD.

A first round of results from the models was discussed at a meeting in Seoul in December 2006, hosted by the RCHSP; the contributions of the experts present did much to improve the modelling. These included Stuart Leckie and Yasue Pai (Stirling Finance, Hong Kong), Robert Palacios (World Bank), John Piggott (University of New South Wales, Australia), Ken Hand and Geoff Rashbrooke (both Ministry of Social Development, New Zealand), Yvonne Sin (then with the World Bank, now with Watson Wyatt in Hong Kong), Ravindra P. Rannan-Eliya (Director, Institute for Health Policy, Sri Lanka), Lee Lai-His (Director Department of Labour Standard, Council of Labour Affairs, Chinese Taipei), Hsin Ping-Lung (Graduate Institute of National Development, National Taiwan University, Chinese Taipei), Jong Uk Won (KIHASA, Korea), Liu Fei (Division of Research and Actuarial, Department of Social Security, China) and Junichi Sakamoto (Nomura Research Institute, Japan)

The pension models use the APEX (Analysis of Pension Entitlements across Countries) infrastructure originally developed by Axia Economics, with the help of funding from the OECD and the World Bank.

EXECUTIVE SUMMARY

Pensions are a major policy issue in developed and developing countries alike. However, pension reform is challenging and controversial because it involves long-term planning by governments faced with numerous short-term pressures. It often provokes heated ideological debates and, sometimes, street protests.

Countries can learn valuable lessons from others' pension systems and their experiences of retirement-income reforms. However, national pension systems are very complicated, involving much institutional, technical, and legal detail. Consequently, international comparisons are very difficult to undertake, making it impossible to transfer policy lessons between countries.

This study combines rigorous analysis with clear, easy-to-understand presentation of empirical results. It does not advocate any particular kind of pension system or type of reform. The goal is to inform debates on retirement-income systems with data that people with different visions for the future of pensions can all use as a reference point.

International comparisons of retirement-income regimes to date have mainly focused on *financial* sustainability: whether the pension promises made to today's workers will be affordable in the future. Much less attention has been paid to the future adequacy of pension benefits, the impact of pension reforms on the distribution of income among older people and ways of combating old-age poverty. These issues, which may be termed *social* sustainability, are a core concern of this study.

This first edition of *Pensions at a Glance: Asia/Pacific* provides a reference for pension comparison throughout the region. The format of the report follows that of the OECD's *Pensions at a Glance* series, which covers the 30 OECD member countries.

The values contained within reflect the pension parameters at 2006 or 2005 where not available. As with the original publications the report is concerned with single pensioners rather than family units.

The final report will begin by showing the different schemes that make up each national retirement-income provision, including a summary of the rules that apply. This will then be followed by a brief summary of several indicators that are the benchmarks of any pension system analysis, namely replacement rates and pension wealth. Both of these indicators will be examined on both a gross and net basis. For this interim document only the results for gross replacement rates are included. The subsequent sections will then look further at both the characteristics of Asian pension systems as well as the population as a whole, through coverage, life expectancy and general demographics. Finally the second part of the report will provide detailed background information for all of the countries covered as well as country specific tables and charts.

In order to enable comparison between the non-OECD countries and specific OECD countries the results have been grouped by region and OECD status. The largest such grouping is East Asia/Pacific which covers China, Chinese Taipei, Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam. Within South Asia the remaining non-OECD countries are listed i.e. India, Pakistan and Sri Lanka. Furthermore the OECD countries themselves have been divided into two

distinct groups. Firstly, there are the Asia-Pacific countries of Australia, Japan, Korea and New Zealand to enable a more regional comparison. Secondly there are five additional OECD countries included, France, Germany, Italy, the United Kingdom and the United States, all of which have well established pension systems and are major economic powers. By including this latter group clear differences should be evident between them and the non-OECD countries in Asia.

The results within this report are specifically analysed at three distinct earnings levels so that a more comprehensive portrayal of the individual pension systems is given. Firstly results are given for workers at average earnings, where it is assumed that the worker earns this level throughout their entire career without any period of interruption. The remaining two earnings levels are 50% of average earnings, commonly called low earners and 200% of average earnings, known as high earners, again where this level of earnings applies to the entire working life of the individual. Entry to the pension system is assumed to be at age 20 and the models are based on a full career until the standard retirement age within that country, so for China, for example, it is assumed that a man will have to work for 40 years until age 60 before being eligible for retirement pension.

For workers at average earnings the OECD average gross replacement rate is 60.5% for men. The range within the OECD countries, although wide from 89.1% in Korea to 34.1% in Japan is considerable less than for the non-OECD countries. The highest replacement rate is found in India, at 99.3% and the lowest is 15.4% in Indonesia. This means that for average earners in India their gross pension income is virtually equivalent to their previous earnings level, whereas for pensioners in Indonesia they will receive less than one-sixth the amount of their earnings. Taxes play an important role in old-age support as pensioners often do not pay social security contributions, and quite often the thresholds for income taxes are also higher. The values for net replacement rates are therefore higher, with the OECD average being 71.8%, more than eleven percentage points higher than for the gross replacement rate. The difference within specific countries can however be well above this average increase figure at over 18% for Germany, though within the OECD this is against the norm. For Asia the trend is slightly different with both the Philippines and Singapore having net replacement rates for average workers more than fifteen percentage points above those for gross replacement rates. The same is true across the earnings bands as the variation with the OECD countries is less pronounced than that for the Asian countries. For example, the net replacement rate for low earners in the Philippines is 23.4 percentage points higher than the gross replacement figure.

Replacement rates are not the only factor that governments are concerned with, as they also need to measure the value of the overall pension promise. This is measured by the indicator of pension wealth which takes life expectancy into account. For the OECD the average gross pension wealth for average earners is 9.6 implying that the pension promise of a man who retires at normal pension age is on average 9.6 times the pre-retirement earnings level. The highest OECD value is again in Korea at 12.4, whilst the lowest is in the United Kingdom and Japan at 5.6 and 5.7 respectively. The majority of the Asian countries are above or very close to this average figure, with only Indonesia (2.6), Hong Kong (6.0) and Thailand (6.1) going against the norm. China, India, Singapore and Vietnam all have gross pension wealth figures in excess of 15.0, which is over 50% higher than the OECD average. The level for China is even higher for low earners at 21.2, nearly double the OECD average of 11.8%. The same is the case for the net pension wealth estimates as the figures for the majority of the non-OECD countries are identical to those for gross pension wealth. This is to be expected as only Hong Kong, Chinese Taipei and Vietnam have taxation systems that result in pensioners having to pay any contributions. However the tax bands are sufficiently high in all three countries that any impact is extremely minimal, with Vietnam showing the greatest decline in pension wealth estimates between gross and net. For the OECD countries it is only the United States that doesn't have any change in the pension wealth figures. For all the other countries the decrease in pension wealth is as much as 2.4 times average earnings in Italy for average earners.

Coverage is the main area of concern in the Asian pension systems. The OECD average for the labour force is 83.3%, meaning that this is the percentage covered by the mandatory pension schemes. Even within the OECD the difference in values is considerable, ranging from 95.3% in Japan down to only 48.5% in Korea. However, Sri Lanka with 35.6% of the labour force covered is the only non-OECD country that even comes close to the value in Korea. In contrast the levels of coverage within the other two South Asia countries are the lowest in the region, at 9.1% for India and 6.4% for Pakistan. Because of the large population within India this is an extremely low figure as is the 20.5% value calculated for China, which again, because of the large population, is an area for considerable concern. When these findings are combined with the life expectancy results and population projections the situation is even more pressing. The proportion of the population in China aged 65 and over is predicted to almost treble by 2090, though 90% of this increase will occur by 2040. Therefore unless the level of coverage of the pension system improves quickly China will have ever greater numbers of pensioners without any means of personal support. The same situation applies across the region as a whole as the proportion of pensioners within the populations is predicted to increase by as much as 500% in Malaysia, Pakistan and the Philippines. Amongst the OECD countries only New Zealand and the United States are anticipated to have a major increase in the pensionable population, with both virtually doubling in the next 80 years. However as the level of coverage in the United States is over 90% of the labour force, and New Zealand has a residency based pension system, the impact in these two countries will not be as severe as within the non-OECD countries.

OVERVIEW OF RETIREMENT-INCOME SYSTEMS

Retirement-income regimes around the world are diverse and they often involve a number of different programmes. As a result, classifying pension systems and different retirement-income schemes within those systems is difficult. Perhaps the most well known of these taxonomies is the “multipillar” one of the World Bank (1994). In its current versions, this comprises five different pillars (Holzmann and Hinz, 2005). The focus of this report, however, is on mandatory retirement-income provision and so some of these pillars are not necessary here.

The framework consists of two mandatory “tiers”: a redistributive part and an insurance part. The redistributive part is designed to ensure that pensioners achieve some absolute, minimum standard of living. Insurance components are designed to achieve some target standard of living in retirement compared with that when working.

The focus of the pension modelling is on workers that are covered by formal-sector pension schemes. The analysis of the structure of pension systems in Table 1, therefore, only covers retirement-income programmes relevant to this group. More general safety-net benefits, often called social pensions, are not therefore covered in the Table (see Palacios and Sluchynsky, 2006 on such schemes).

Starting with the first tier, all the OECD countries have redistributive schemes that affect some or all workers with full careers in the pension system. In contrast, only a third of the Asia/Pacific countries outside the OECD have comparable provisions.

The most common kind of redistributive scheme in the 21 countries as a whole are resource-tested programmes, which grant a higher payment to poorer pensioners, with the amount reduced as the level of other income during retirement increases. The most important of these types of scheme in a national context is the Australian plan, but these also play a significant role in providing retirement incomes in many other OECD countries and Hong Kong.

Minimum pensions are similar to resource-tested schemes, in that they pay a higher benefit to lower-income retirees. However, the crucial difference is that the value of the entitlement depends only on income from a particular pension scheme and not income as a whole (including capital income, earnings, rents *etc.*). Normally they are provided as part of the earnings-related pension scheme, whereas resource-tested schemes are institutionally separate. There are minimum pensions in the Philippines and Pakistan.

The third type of first-tier pension is a basic scheme, in which the amount paid is either a flat rate or it depends on the number of years of contributions; it is not dependent on individual earnings. For example, the basic pension in China pays a fixed percentage of average, city-wide earnings for each year of coverage. The pension system of Korea has a similar basic component: the pension is based on a mix of individual and economy-wide earnings.

The second tier in this typology of pension schemes plays an “insurance” role. These plans play a particularly important role in retirement income systems outside of the OECD countries because of the relatively limited extent of redistributive schemes. They are designed to provide an adequate

income relative to previous earnings, rather than just providing a minimum living standard (as with the first tier). Again, they are mandatory.

Eight of the twelve non-OECD countries have a defined-contribution (DC) plan, where the contributions are saved over time and either paid as a lump sum or as pension-income stream at retirement. The remaining four countries, as well as India which has both, all have defined-benefit (DB) schemes. In these plans the amount of income received at retirement is dependent on the number of years of contributions and on the level of individual earnings.

There are also notional-accounts (NDC) schemes: the public pension in Italy is the only example listed. This scheme records the each worker's contributions in an individual account and applies a rate of return to that account. The accounts are "notional" in that both the incoming contributions and the interest charged to them exist only in the books of the managing institution. At retirement, the accumulated notional capital in each account is converted into a stream of pension payments using a formula based on life expectancy.

Table 1. Structure of pension systems

		First tier		Second tier	
		Universal coverage, redistributive		Mandatory, insurance	
		Public		Public Private	
Resource tested		Basic	Minimum	Type	Type
East Asia/Pacific					
China		x		NDC/DC	
Chinese Taipei				DC + points	
Hong Kong, China	x			DC	
Indonesia				DC	
Malaysia				DC	
Philippines		x	x	DB	
Singapore				DC	
Thailand				DB	
Vietnam				DB	
South Asia					
India				DB + DC	
Pakistan		x		DB	
Sri Lanka				DC	
OECD Asia-Pacific					
Australia	x			DC	
Japan		x		DB	
Korea	x			DB	
New Zealand	x				
Other OECD					
France	x		x	DB + points	
Germany	x			Points	
Italy	x			NDC	
United Kingdom	x	x	x	DB	
United States	x			DB	

DB = defined benefit.

DC = defined contribution.

NDC = notional accounts.

METHODOLOGY AND STRUCTURE OF THE REPORT

The final report will follow that of the last Pensions at a Glance publication, and is a “microeconomic” one looking at prospective individual entitlements under all 21 of the countries pension regimes.

The report will be divided into two main parts. Part I presents the information needed to compare pension policies in a clear, “at a glance” style. It will start by showing the different schemes that together make up national retirement-income provision. Next, there will be a summary of the parameters and rules of pension systems.

This will be followed by four main indicators that are calculated using the OECD pension models.

- The first two are the most familiar to pension analysts. Both replacement rates, i.e., the ratio of pension benefits to individual earnings. These are given in gross and net terms, taking account of taxes and contributions paid on earnings and on retirement incomes.
- The next two indicators are pension wealth, again given in gross and net terms. Pension wealth is a more comprehensive measure of pension entitlements than replacement rates because it takes account of pension ages, indexation of pensions to changes in wages or prices and life expectancy.

The remainder of part I will consist of at a glance analyses of coverage, life expectancy, demographics and pension spending, each of which play a key role in pension modelling.

Part II will provide detailed background information on each of the 21 countries’ retirement-income arrangements. These include pension eligibility ages and other qualifying conditions; the rules for calculating benefit entitlements; and the treatment of early and late retirees. The country studies summarise the national results in standard charts and tables.

The remainder of this section will describe the methodology used to calculate pension entitlements. It outlines the details of the structure, coverage and basic economic and financial assumptions underlying the calculation of future pension entitlements on a comparative basis.

Future entitlements under today’s parameters and rules

The pension entitlements which are compared are those that are currently legislated in the OECD countries and where possible for the non-OECD countries. Changes in rules that have already been legislated, but are being phased-in gradually, are assumed to be fully in place from the start.

The values of all pension system parameters reflect the situation in the year 2006 for OECD countries and either 2005 or 2006 for the non-OECD countries. The calculations show the pension

entitlements of a worker who enters the system today and retires after a full career. The results are shown for a single person only.

Career length

The standard OECD definition is used for both the OECD and non-OECD countries. Therefore a full career is defined here as entering the labour market at age 20 and working until standard pension-eligibility age, which, of course, varies between countries. The implication is that length of career varies with the statutory retirement age: 35 years for retirement at 55, 40 years for retirement at 60, etc.

Coverage

The pension models presented here include all mandatory pension schemes for private-sector workers, regardless of whether they are public (i.e. they involve payments from government or from social security institutions, as defined in the System of National Accounts) or private. For each country, the main national scheme for private sector employees is modelled.

Pension entitlements are compared for workers with earnings between 0.5 times and twice the average. This range permits an analysis of future retirement benefits of both the poorest and richer workers.

Economic variables

The comparisons for OECD countries are based on a single set of economic assumptions for all the countries covered. Although the levels of economic growth, wage growth and inflation vary across countries, using a single set of assumptions enables comparison without economic affects. Differences in pension levels therefore reflect differences in actual pension systems and government policies. For Asia however a different set of assumptions need to be applied because of the recent surge in economic growth in the region in comparison to the majority of OECD countries.

The baseline assumptions for the OECD countries are:

- real earnings growth: 2% per year (given the assumption for price inflation, this implies nominal wage growth of 4.55%);
- individual earnings: assumed to grow in line with the economy-wide average. This means that the individual is assumed to remain at the same point in the earnings distribution, earning the same percentage of average earnings in every year of the working life;
- price inflation: 2.5% per year;
- real rate of return after administrative charges on funded, defined-contribution pensions: 3.5% per year;
- discount rate (for actuarial calculations): 2% per year;

For the non-OECD countries we have made the assumption that over the 40 year period being studied all the values will converge to the OECD values, though the starting values for each of the variables is not the same for every country. The non-OECD countries have been split into three distinct groups. Firstly, China is a group of its own as the levels of growth within China are greatly

above those of any other country in the region, particularly for the levels of wage growth and rate of return. The second group covers Chinese Taipei, Hong Kong and Singapore which have all been given the values that apply within the OECD. The third group consists of all the remaining non-OECD Asian countries both within East Asia/Pacific and South Asia.

The baseline assumptions for China are:

- real earnings growth: 12% per year converging to the OECD figure of 2% per year;
- individual earnings: assumed to grow in line with the economy-wide average. This means that the individual is assumed to remain at the same point in the earnings distribution, earning the same percentage of average earnings in every year of the working life;
- price inflation: 5.0% per year converging to 2.5% per year;
- real rate of return after administrative charges on funded, defined-contribution pensions: 10.5% per year converging to 3.5% per year;
- discount rate (for actuarial calculations): 2% per year;

The baseline assumptions for Indonesia, Malaysia, the Philippines, Thailand, Vietnam, India, Pakistan and Sri Lanka are:

- real earnings growth: 6% per year converging to the OECD figure of 2% per year;
- individual earnings: assumed to grow in line with the economy-wide average. This means that the individual is assumed to remain at the same point in the earnings distribution, earning the same percentage of average earnings in every year of the working life;
- price inflation: 5.0% per year converging to 2.5% per year;
- real rate of return after administrative charges on funded, defined-contribution pensions: 7.5% per year converging to 3.5% per year;
- discount rate (for actuarial calculations): 2% per year;

The calculations assume the following for pay-out of pension benefits: when DC benefits are received upon retirement, they are paid in the form of a price-indexed life annuity at an actuarially fair price. This is calculated from mortality data. Similarly, the notional annuity rate in notional accounts schemes is (in most cases) calculated from mortality data using the indexation rules and discounting assumptions employed by the respective country.

Taxes and social security contributions

The modelling assumes that tax systems and social security contributions remain unchanged in the future. This implicitly means that “value” parameters, such as tax allowances or contribution ceilings, are adjusted annually in line with average earnings, while “rate” parameters, such as the personal income tax schedule and social security contribution rates, remain unchanged.

Average earnings

The values for the OECD countries are based on the earnings of an “average worker” as used in the last Pensions at a Glance publication. Average wage information for the non-OECD countries could not be sourced on the same basis or at a consistent point in time. The following provides a brief explanation of the sources and time points for the non-OECD countries and the subsequent table provides comparative statistics for all the countries included in this report.

Sources

China – National Statistics website, average wage for 2005
 Chinese Taipei – Journal article for average manufacturing wage in 2006
 Hong Kong – Average economy-wide earnings in 2006
 Indonesia – Average earnings in 2006
 Malaysia – National Statistics website, average manufacturing wage at June 2006
 Philippines – Average wage in 2004
 Singapore – Monthly digest of Statistics August 2007, average wage for 2006
 Thailand – Average economy-wide earnings in 2005
 Vietnam – National Statistical website, average local state sector wage in 2006
 India – Average earners in firms with over 20 people 2004/05
 Pakistan – Average per capita income in 2005
 Sri Lanka – National Statistics website based on household survey, average earners income in 2006

Table 2. Average earnings

<i>Individual earnings (%)</i>	<i>Average earnings</i>			<i>Exchange rates with USD</i>	
	<i>National Currency</i>	<i>USD, market price</i>	<i>USD, PPP</i>	<i>Market price</i>	<i>PPPs</i>
East Asia/Pacific					
China	18,364	2,242	9,665	8.19	1.90
Chinese Taipei	509,400	n.a.	n.a.	n.a.	n.a.
Hong Kong, China	177,600	22,828	29,600	7.78	6.00
Indonesia	13,125,000	1,352	4,444	9,704.74	2,953.70
Malaysia	21,080	5,562	11,711	3.79	1.80
Philippines	95,664	1,737	7,474	55.09	12.80
Singapore	42,648	25,692	28,432	1.66	1.50
Thailand	107,520	2,673	8,335	40.22	12.90
Vietnam	17,815,200	1,130	5,551	15,766.00	3,209.50
South Asia					
India	49,230	1,116	5,351	44.10	9.20
Pakistan	43,748	735	2,651	59.51	16.50
Sri Lanka	164,460	1,636	6,578	100.50	25.00
OECD Asia-Pacific					
Australia	53,385	40,200	38,406	1.33	1.39
Japan	5,035,230	43,296	40,607	116.30	124
Korea	30,377,732	31,816	40,830	954.79	744
New Zealand	42,572	27,608	28,961	1.54	1.47
Other OECD					
France	31,464	39,478	35,234	0.80	0.893
Germany	42,003	52,701	48,003	0.80	0.875
Italy	23,299	29,233	27,218	0.80	0.856
United Kingdom	30,842	56,799	49,906	0.54	0.618
United States	32,503	32,503	32,503	1.00	1.00

n.a.: Not available.

PPP = purchasing power parity.

Note: OECD countries sourced from OECD stat for 2006. Non-OECD sourced from World Bank with

PPP at 2004 and market price at 2005.

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GROSS REPLACEMENT RATES

Gross replacement rates, showing pension benefit as a share of individual lifetime average earnings, vary greatly across Asia, from 15.4% in Indonesia to 99.3% in India. These are the extremes for average earners but findings are also given at 50% and 200% of average earnings. Replacement rates generally decline as earnings increase and are usually higher for men than for women. Results in South Asia are amongst the highest within the region, though Sri Lanka is under half the rate for India at 50% and 100% of average earnings.

Often, the replacement rate is expressed as the ratio of the pension over the final earnings before retirement. However, the indicator used here shows the pension benefit as a share of individual lifetime average earnings (re-valued in line with economy-wide earnings growth). Under the baseline assumptions, workers earn the same percentage of economy-wide average earnings throughout their career. In this case, lifetime average re-valued earnings and individual final earnings are identical.

For workers at average earnings, the average for the OECD countries of the gross replacement rate from mandatory pensions is 60.5% for men and 59.2% for women. There is little variation across Asia-Pacific OECD countries, with Korea at the top of the range, offering replacement rates of nearly 45 % and Japan lowest with only 34%. The rates for the non-OECD countries have an even wider range, going from 99% for India to 15% for Indonesia and 18% for Singapore, though the next lowest is Thailand at 35%, meaning Indonesia and Singapore are clear outliers. Regional variation also exists with India having a replacement rate more than double that of Sri Lanka, whilst the majority of the remaining Asia-Pacific countries have replacement rates between 60% and 80%. The non-Asian OECD countries normally have lower replacement rates with Italy and, to a lesser degree, France being slight exceptions with replacement rates of 68% and 51% respectively.

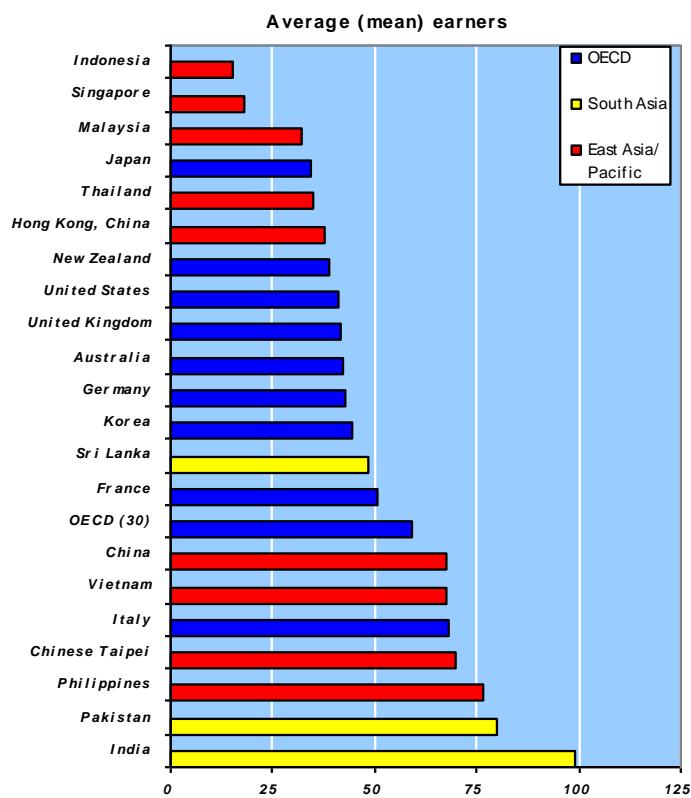
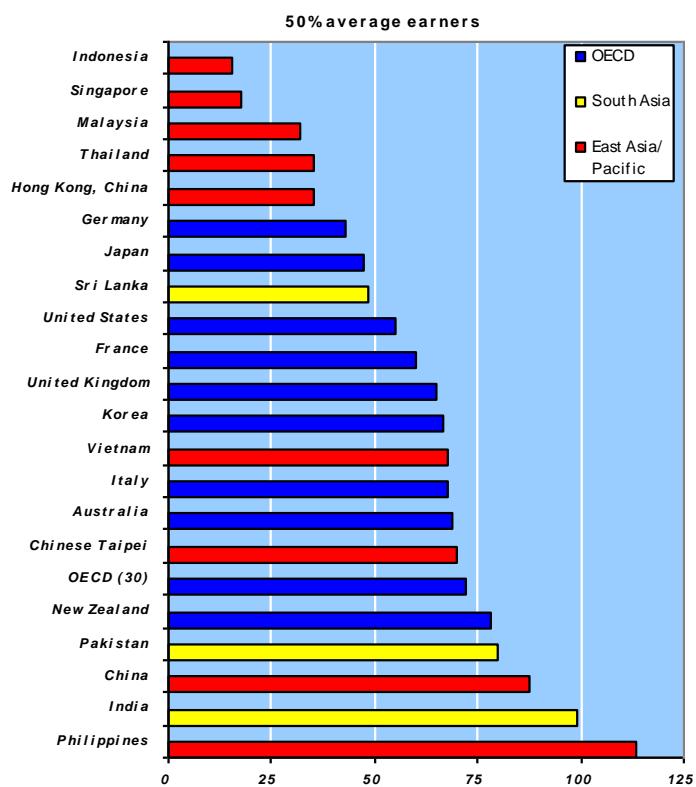
Low earners – workers earning only half the mean – have higher replacement rates than mean earners: on average, 73% for the OECD. This reflects the fact that most countries attempt to protect low income workers from old-age poverty. The one exception is Hong Kong which had a slightly lower replacement rate for low earners than for average earners, 35% and 38% respectively. The cross-country variation of replacement rates at this earnings level is much higher than it is for pensions of those who earn twice the average. The highest gross replacement rates for low earners are found in the Philippines at 113% and India at 99%, which means that in the Philippines full-career workers with permanently low earnings have more money when they retire than when they were working. The lowest rate is again observed in Indonesia, which has a constant replacement rate of 15% across all the earnings levels. New Zealand has the highest replacement rate amongst Asian OECD countries at 78%, nearly twice that of Germany.

For high earners – working earning twice the mean - Pakistan offers the highest pensions, with a steady replacement rate of 80% across all the earnings levels. The variation across countries in replacement rates for high earners is much smaller than it is for people on low or average pay. Singapore now has the lowest rate, at 11% closely followed by Indonesia, at 15% and New Zealand at 20%. Again the majority of the non-OECD countries have higher replacement rates than their OECD counterparts, with the exception of Italy. Six of the twelve non-OECD countries have a higher replacement rate than the OECD average of 50.8%, compared to only one of the nine OECD countries

listed, Italy. The replacement rates in the Philippines, Australia and Korea are virtually half the level for low earners. For the United Kingdom the replacement rates are at one-third of the level for low earners, while for New Zealand they are only at one-quarter of the level.

For women the replacement rates are below, or at best equal to, those for men, without exception. Whilst most OECD countries have the same replacement rates for men and women it is noticeable that all the non-OECD countries, apart from Thailand and the Philippines, have lower replacement rates for women than for men. The majority of non-OECD countries are now actually below the OECD average across all the earnings levels, which is the opposite of the findings for men. This is particularly the case for low earners where three-quarters of the non-OECD countries are below the OECD average, with the exceptions being China, the Philippines and India.

<i>Individual earnings (% average)</i>	<i>Men</i>			<i>Women</i>		
	50	100	200	50	100	200
East Asia/Pacific						
China	87.6	67.6	57.6	72.3	54.8	46
Chinese Taipei	70	70	54.9	56.1	56.1	41
Hong Kong, China	35.4	38	24	32.3	34.2	22.1
Indonesia	15.4	15.4	15.4	13.7	13.7	13.7
Malaysia	31.9	31.9	31.9	28.1	28.1	28.1
Philippines	113.4	76.7	58.3	113.4	76.7	58.3
Singapore	17.8	17.8	11.3	15.9	15.9	10.1
Thailand	35	35	29.3	35	35	29.3
Vietnam	67.8	67.8	67.8	62.4	62.4	62.4
South Asia						
India	99.3	99.3	78.7	95	95	75.2
Pakistan	80	80	80	71.3	70	70
Sri Lanka	48.3	48.3	48.3	31.8	31.8	31.8
OECD Asia-Pacific						
Australia	68.7	42.4	29.3	68.7	42.4	29.3
Japan	47.2	34.1	26.7	47.2	34.1	26.7
Korea	66.6	44.6	27.0	66.6	44.6	27.0
New Zealand	78.2	39.1	19.6	78.2	39.1	19.6
Other OECD						
France	59.9	50.5	43.5	59.9	50.5	43.5
Germany	43	43	32.3	43	43	32.3
Italy	67.9	67.9	67.9	52.8	52.8	52.8
United Kingdom	65.2	41.7	22.2	65.2	41.7	22.2
United States	55.2	41.2	32.2	55.2	41.2	32.2
OECD (30)	73.1	60.5	50.8	72.1	59.2	49.5



PENSION SYSTEM AND MARKET TRENDS IN ASIA-PACIFIC

Pension system and market trends in Asia-Pacific

In many parts of Asia-Pacific, the challenges of pension reform are quite different to those that Western industrialised countries face. While demographic development has put the established and mature systems in the West under pressure, several Asian countries have yet to even establish well-functioning systems with broad coverage. And they need to do so at a time when a worsening demographic situation is on the horizon. Asian countries face two major challenges: Not only must they establish and institutionalise pension systems, they must also prepare them for the coming demographic challenges.

The countries covered in this study differ widely in terms of economic development and pension system maturity. They can be broadly classified into two groups. Australia, Japan and Singapore form the first group of countries with well-established, comprehensive and mature systems. These three nations are also the wealthiest countries in terms of GDP per capita. The other countries addressed here are either in the process of establishing formal pension systems to varying degrees or have done so only in the recent past.

From family support to formal systems

Until recently, the latter group of countries largely relied on family support for the elderly. Traditionally, retirees' children have provided a substantial part of retirement income. Caring for the elderly was supported by strong family values and Asian social norms, which include the traditions of respect for the elderly and children's duty to care for their parents. Another source of income has traditionally been drawn from wages, as the elderly tend to work until they no longer can. According to the World Bank, in 1990, the average Korean over 60 earned 32% of his/her income by working. 55% was provided by his/her children, while public and private pensions accounted for only 3% of old-age retirement income. 10% came from other sources.

This informal system of old-age support went hand in hand with weak and limited public pension systems. Comprehensive social security systems are only available in a few countries and were established fairly recently. Public pension provision mainly focused on public sector employees, who enjoy quite generous pension schemes in most countries. In the past, the state tended to regard old-age provision for the private sector labour force as a private matter that families, employers and local communities had to handle. For this reason, occupational pension provision in many countries is limited to the employees of large enterprises.

In recent years, the system of informal family support has come under pressure. The main reasons include rapid economic growth and industrialisation, which have led to a decline of the agricultural sector, growing urbanisation, decreasing fertility rates and increased longevity. For instance, while 28% of South Korea's population lived in urban

Classification of Asian pension systems

Markets with mature pension systems	Markets with maturing/emerging pension systems
Australia Japan Singapore	China India Hong Kong South Korea Taiwan Thailand

areas in 1960, this figure had risen to 80% by 2005. During the same period, the fertility rate dropped from 6.0 to 1.2 children per woman and life expectancy rose from 55 to 77 years. These socio-economic changes have resulted in increasing mobility and a general weakening of family ties. Hence, the need for formal retirement systems has increased dramatically. Without such systems, old-age poverty would rise dramatically.

Pension system design and reforms

Pension system design in Asia-Pacific differs from country to country; there is no single coherent model in operation. However, it can be argued that there is a widespread trend towards the multi-pillar model advocated by the World Bank, even though each country has a very different starting point and approach to it.

Australia and Japan run well-developed multi-pillar systems. Singapore is unique in operating a one-pillar system, the Central

The World Bank's three-pillar model

- First pillar: Publicly managed, financed by general taxes or social security contributions, pay-as-you-go and defined benefit
- Second pillar: Privately managed, funded and mandatory (defined contribution)
- Third pillar: Privately managed, voluntary retirement savings

(According to the model's latest formulation, there are two additional pillars: a zero pillar to provide a minimum level of protection and a fifth pillar, which consists of intra-family support)

Provident Fund, which is a multi-purpose fund with schemes for health care, pensions, home ownership and other purposes. China is in the process of transforming its pension system and introducing a multi-pillar system. India is reforming pensions for its civil service in favour of a defined contribution system. This reform is also an attempt to advance retirement savings of all citizens.

Shape of Asian pension systems

	Public pensions		Occupational pensions		Tax-favoured voluntary pension savings
	Social insurance	Multi-purpose Provident Fund	Mandatory occupational pensions	Voluntary occupational pensions	
Australia	✓		✓		Voluntary contributions to superannuation, Retirement Savings Accounts
China	✓		✓	✓	Life insurance
Hong Kong	Partly		✓		Voluntary contributions to MPF
India			✓	✓	Public Provident Fund
Japan	✓			✓	Mainly life insurance
Singapore		✓			Supplementary Retirement Scheme
South Korea	✓			✓	Private Personal Pension Plans
Taiwan	✓		✓		Life insurance
Thailand	✓		Planned	✓	Retirement Mutual Funds

In 2000, Hong Kong introduced the Mandatory Provident Fund, a mandatory occupational scheme. The country also provides modest old-age benefits for needy retirees. South Korea established a comprehensive public pension system in 1988 and is in the process of replacing its severance pay system with formal occupational schemes. Taiwan recently introduced a new defined contribution system for private employees, and a new safety net will come into effect in late 2008. Thailand plans to introduce a mandatory occupational scheme for private sector employees with individual defined contribution accounts.

Extending the coverage of formal pension systems ranks very high on Asian countries' political agendas. However, the size of Asia's informal sector poses a major problem. In many countries, the majority of employees work either at very small enterprises, in the informal sector or are self-employed. This means they do not and often cannot participate in formal pension provision. In India, for example, around 90% of the workforce is active in the informal sector.

Schemes for civil servants have been another focus of reforms. Since these schemes were largely unfunded but fairly generous, in the past, the fiscal costs of maintaining them have become unsustainable. For this reason, reforms in this area are underway in countries such as India, where the old defined benefit schemes have been replaced with new defined contribution schemes for new entrants to the civil service. Thailand did the same with its schemes for civil servants in 1997.

In terms of payout and pension benefits, the formal pension schemes in place have often provided lump sum payments rather than annuities. There are signs that this is changing, however, and that beneficiaries can increasingly opt to receive their pension benefits in the form of annuities. This, for example, is the case in Taiwan, where the new occupational pillar foresees that larger employers can choose to provide annuities. The government is also considering introducing annuity payments for public service funds and the compulsory public labour insurance, which covers employees

in the private sector. In some countries, however, the comprehensive implementation of annuities faces a major obstacle due to a lack of mortality tables and actuarial databases, as well as rapidly changing longevity rates and strong regional longevity differences. This is the case in China, where lifelong annuities are not yet available.

The voluntary savings pillar is generally underdeveloped in Asia, at least in comparison with OECD countries. While this does not seem surprising given that many of these countries are emerging economies with modest per capita income and wealth, there is a more specific reason for the underdevelopment of voluntary retirement savings and limited product choice, namely minor tax incentives. Only a few of the countries grant substantial tax incentives for private retirement savings. China and Taiwan give tax breaks for life insurance only, while in Australia and Hong Kong, voluntary tax-favoured contributions to the mandatory occupational funds are possible. Tax incentives in South Korea and Thailand are more generous.

As a result, savings products specifically designed for retirement purposes are rare in the voluntary pillar. However, the generally high saving rates in the region, up to 41% of GDP in China and 28% in Taiwan, indicate that people are willing to save. It can therefore be assumed that a considerable share of these savings is meant for old-age provision.

Pensions in China and India

The challenges of pension reform are particularly evident in China and India, as both countries have experienced spectacular economic growth. This implies the loosening of family-based provision. Both countries are in the midst of restructuring their pension systems, a process complicated by their enormous size.

China started a very far-reaching and comprehensive reform program in 1997 with the aim of establishing a multi-pillar system. Before its transformation into a market-based economic system, old-age provision was provided by state-owned

enterprises in the form of defined benefit plans. Each state-owned enterprise set the rates for its employees, who usually enjoyed lifetime employment. While the schemes were controlled by the state, each state-owned enterprise essentially ran its own pay-as-you-go system. Benefits reached an average replacement rate of more than 80% of final salary, while eligibility conditions were generous. However, this system has proven unsustainable since the economy was opened up.

China is now in the process of unifying the existing systems and moving to a comprehensive multi-pillar pension system, at least in the urban areas. This system comprises a public defined benefit system, mandatory defined contribution accounts and voluntary occupational pensions, called Enterprise Annuities. The urban system is in the process of being implemented, and many pilot projects dealing with different elements of the system are running. The system in rural areas, where the majority of the Chinese population lives, is different. It is completely voluntary and in the hands of local governments, and benefits are much less generous than in the urban system. The Chinese population system has a coverage rate of 50% in urban areas and 9% in rural areas.

India, on the other hand, runs a very fragmented system. It consists of a limited social safety net, several schemes for public servants and two mandatory schemes for private employees from which employers can opt out and establish company funds. It also includes voluntary occupational schemes and a public provident fund to which voluntary pension savings can be directed. Employees in the informal sector, which constitute the overwhelming majority of employees, can contribute only to the latter. However, they rarely do.

In 2004, India established its new pension system to ease pressure on public finances from the old schemes for civil servants and to encourage citizens to save more voluntarily. The system is a defined contribution scheme and is mandatory for new entrants to the civil service. It will be also open to every citizen in hopes that informal sector workers will join on a voluntary basis. Due to political opposition, the system is not yet operating.

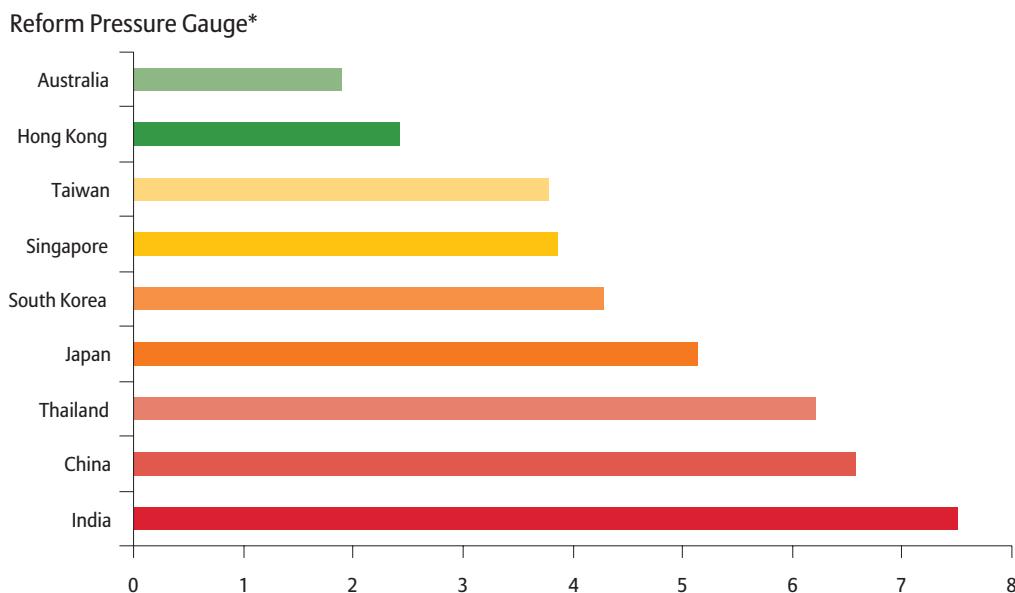
The contributions of civil servants are currently held by the central government. It remains unclear when the voluntary scheme will come into effect. While India's reform programme is less ambitious than China's, India's population will start ageing later than China's, and developments will be more moderate. As a result, India has a longer time frame to develop pension system solutions.

However, demographic considerations are only one factor in the development of pension systems. In the case of India, growing wealth and the decline of traditional family support structures will likely be more important for the emergence of pension systems, as these trends have created a strong demand for formal old-age provision among the population.

Pension reform pressure in Asia

In many countries around the world, reforming pension systems has been high on the political agenda for many years. The driving force has often been unfavourable demographic development coupled with unsustainable or outdated pension systems. However, since pension systems differ from country to country, problems and possible solutions differ. To understand the necessity for reform and the ability of existing pension systems to cope with demographic change in an international comparison, Allianz Dresdner Economic Research developed the Allianz Pension Reform Pressure Gauge. This indicator measures and illustrates pressure on governments to reform their pension systems by examining various dimensions of pension systems in a consistent manner. It therefore allows cross-national comparisons by measuring the sustainability of pension systems and the resulting need to reform them.

The Allianz Pension Reform Pressure Gauge for the Asian countries investigated in this study shows that reform pressure differs considerably from country to country. Australia is the country with the smallest necessity to reform its pension system, followed by Hong Kong and Taiwan. These countries have managed to establish comprehensive pension systems with a



* Scale from 1-10: 1 low reform pressure, 10 high reform pressure

Source: Allianz Dresdner Economic Research

The Allianz Pension Reform Pressure Gauge

Pressure on pension systems mainly arises from two sources: demographic change and/or underdeveloped or unsustainable pension systems. To calculate reform pressure, reforms already passed and their future consequences must be taken into account. If demographic change has already led to adequate reforms and a solid future pension system, reform pressure can be considered eased. We have therefore distinguished between "the need for reform" and "reform progress". With this in mind, the indicator was revised in 2007. The Pension Reform Pressure Gauge now comprises a "Reform Demand Indicator" and a "Reform Progress Indicator". The data used to develop the "Reform Demand Indicator" include such elements as the current and future demographic situation, the size of government debt, the coverage of the main pension system, the replacement ratio and the retirement age. For the Progress Indicator, (future) changes in key pension system features triggered by already passed reforms are important. A rising retirement age or a stronger funded system are examples of reform progress.

Putting the emerging and extremely heterogeneous Asian economies into an indicator that was originally developed for the more homogenous European countries is no easy task, as not all data are available. To provide a clear impression of the state of the pension system, we stretched the definitions of some of the variables that are fed into the gauge. While better data availability may have marginally altered the indicator's reading for some Asian countries, a relatively clear picture emerges despite the shortcomings mentioned above.

strong funded pillar. Reforms are most needed in India and China, as overall pension coverage in both countries is still poor.

Pension market trends

Public pension funds

Acknowledging the demographic challenges ahead, several of the countries

included in this study run dedicated reserve funds to bolster the future impact of demographic developments, as the Chinese National Social Security Fund demonstrates. In other countries, public pension funds manage the contributions of the funded or partially funded systems, as is the case in Japan, Singapore, South Korea and Taiwan. In 2006, Australia set up the Future Fund, a reserve fund that aims to cover future superannuation

liabilities stemming from civil service schemes. The government provided start-up financing of EUR 35.9 billion (AUD 60 billion), and the fund is expected to grow to EUR 88.5 billion (AUD 148 billion) by 2020. Contributions will come from future budget surpluses.

Some of these funds have a high level of assets under management. What's more, assets in some funds are expected to grow substantially, as they are in the accumulation phase. The biggest pension fund worldwide is the Japanese Government Pension

Traditionally, these public funds have been invested very conservatively. They tended to manage their assets in-house, and in many cases they had to fund government programs or infrastructure projects or give credits to the government. This pattern is beginning to change, as these funds are trying to achieve better returns on their assets. They are withdrawing from financing functions for government projects and, in some cases, from direct government control.

South Korea is a case in point. In 1998, almost 71.5% of National Pension System assets were

Reserve/public pension funds in Asia

	Size of reserve fund, 2006 (or latest year available)	
	EUR	Local currency
Australia (Future Fund)	35.9 billion	AUD 60 billion
China (National Social Security Fund)	27.5 billion	RMB 283 billion
Japan (Government Pension Investment Fund)	560 billion	JPY 88 trillion
Singapore (Central Provident Fund)	63.1 billion	SGD 125.8 billion
South Korea (National Pension System)	142 billion	KRW 172 trillion
Taiwan (Public Service Pension Fund)	8.5 billion	NTD 365 billion
Taiwan (Labour Insurance)	10.2 billion	NTD 436 billion
Taiwan (New Labour Pension)	3.7 billion	NTD 159 billion
Thailand (Government Pension Fund)	7.6 billion	THB 356 billion

Source: OECD, National Statistics

Investment Fund, which manages the reserves of the public pension pillars. It currently manages assets amounting to EUR 560 billion (JPY 88 trillion), which are expected to grow to EUR 1.1 trillion (JPY 166.5 trillion) by the end of 2008, as a transfer of funds from other sources is underway. The Chinese National Social Security Fund, which was established in 2000, is likely to grow to at least EUR 97.2 billion (RMB 1 trillion).

invested in the public sector. By 2005, this figure had dropped down to zero, and 99.8% of assets were invested in the financial sector. In the past, the assets of the Japanese Government Pension Investment Fund were managed by a state agency. At first, it was under the control of the Ministry of Finance until the Ministry of Health, Labour and Welfare took over. In 2001, the pension fund in its current form was established. In 2006, it

Introduction

became an independent administrative institution to achieve independence from the government. It now holds complete responsibility for managing and investing funds.

Another development has been the increase in the outsourcing of pension assets to private

scheme in 2008. In Australia and Singapore, DC schemes have a longer tradition.

This development is in line with trends in the rest of the world. Industrialised countries have experienced a shift from defined benefit (DB) to DC schemes in occupational pensions, which is particularly

Defined contribution schemes in Asia-Pacific

	Date of DC scheme introduction	Name	Type
Australia	1992	Superannuation	Mandatory occupational
China	2004	Enterprise Annuities	Voluntary occupational
Hong Kong	2000	Mandatory Provident Fund	Mandatory occupational
India	2004	New Pension System	Mandatory for new civil servants/voluntary for all citizens (planned)
Japan	2001	New Corporate Schemes (also DB plans possible)	Voluntary occupational
Singapore	1955	Central Provident Fund	Mandatory occupational
South Korea	2005	New Corporate Pension System (also DB plans possible)	Voluntary occupational
Taiwan	2005	New Labour Pension Scheme	Mandatory occupational
Thailand	1997	Government Pension Fund	Mandatory for new civil servants
	Planned for 2008	National Pension Fund	Mandatory occupational

companies. The share of outsourced assets in Taiwan's Public Service Pension Fund, for example, increased from zero in 2000 to 28% in 2006. There are similar tendencies in China, South Korea and Japan.

pronounced in the United States and United Kingdom. Many emerging economies in Central and Eastern Europe and in Latin America have also established DC schemes as a mandatory pillar.

Introducing defined contribution schemes

In recent years, the trend towards defined contribution (DC) schemes has accelerated in Asia-Pacific. Since 2000, new DC schemes have been introduced for various target groups in China, Hong Kong, India, Japan, South Korea, and Taiwan; Thailand also plans to start a DC

The reasons for the recent wave of DC scheme introductions in Asia differ from country to country. In Thailand and India, the main reason for the reform was to replace the existing DB schemes for civil servants, which proved financially unsustainable for the government, with a DC system that makes contributions calculable. In Japan and South

Korea, the newly introduced DC schemes were meant to increase employer choice in voluntary occupational pension provision and modernise the company pension system. In Hong Kong, the mandatory DC system is meant to constitute the main pillar of pension provision. DC accounts in Singapore are more or less the only official source of retirement income. In China, the emerging Enterprise Annuity system is meant to complement the other pillars that are being built up.

DC systems allocate risks differently among sponsors and beneficiaries than DB systems do. The sponsor bears investment and longevity risks in DB systems, as benefits are fixed irrespective of capital market developments and cohort life expectancy. In DC systems, the plan member has to handle these risks. DC plans therefore imply a higher risk for the plan member, at least in these two regards, but also prospects for higher returns. Generally, DC plans imply higher individual responsibility and a strict link between contributions and benefits, as redistribution does not take place. From a plan sponsor's point of view, financial obligations and cost advantages are much more predictable with DC schemes.

From an economic point of view, the main advantage of DC schemes is their transparency and portability. This is what has made such plans increasingly popular. They vest immediately and are not an obstacle to job changes. What's more, employees do not lose their pension capital if the company they work for goes bankrupt. Portability is very important in Asian countries such as Taiwan. Under the country's old occupational system, employees had to have worked at least 15 years for the same company to receive pension benefits. This proved problematic, as the average tenure at a company is 8.6 years, which means that most employees were not eligible for pension benefits.

Capital market theory suggests that people should have a choice between different investment options in DC plans to match their degree of risk aversion and the type of funds they invest in their retirement savings. Individual choice may increase plan members' interest in their pension

investments. It creates the demand for financial education, but it also requires financial education, which becomes necessary to ensure that investors make informed choices. Given that the choice of investments for retirement is extremely important to ensure a good standard of living and that defined contribution schemes are gaining importance worldwide, governments and financial service providers must increase their efforts to provide financial education.

Individual choice may also stimulate competition among providers as they try to provide tailored solutions for investors' preferences. Hence, choice can lead to a greater diversity of products, which increases consumer choice again, but presupposes efficient risk management on the part of financial providers. This, in turn, supports the development of national financial markets and their "institutional capital", including professional investment management, better governance structures and transparency. The development of efficient pension products depends on these factors as well, and on the development of sound actuarial databases to cover longevity risk, particularly for decumulation products.

For investors that do not have the experience or the interest to occupy themselves with financial matters, the concepts of default and lifecycle funds have become popular in many parts of the world. Default funds normally have a conservative asset allocation, while lifecycle funds adjust asset allocation to the age of the plan member.

Individual choice in Asian DC systems

Australia	Yes
China	No
Hong Kong	Yes
India	Yes (planned)
Japan	Yes
Singapore	Yes
South Korea	Yes
Taiwan	No
Thailand	Not yet decided

Individual choice in DC plans is gaining a foothold in Asia-Pacific. Participants in Australian Superannuation schemes may choose their plan freely, regardless of their employer's decision. In Hong Kong's Mandatory Provident Fund scheme, participants can choose freely among funds offered by the trust scheme that the employer has chosen, one of which must offer capital preservation. Plan members in Singapore's Central Provident Fund are, within limits, free to choose financial products for their savings.

Participants in Japanese DC plans must have the choice between at least three investment options, one of which must guarantee capital preservation. The same applies to South Korea's new corporate DC schemes. In India's New Pension System, there will also be a menu of three funds with different asset allocations, and the safest fund will be the default option. The new Chinese occupational pension system does yet not foresee individual choice; the New Labour Pension scheme in Taiwan does not allow individual choice either, but this matter is currently under discussion. Whether or not there will be individual choice in Thailand's National Pension Fund has not yet been announced.

The future development of pension assets

High GDP growth rates, major structural changes in the economic environment – particularly a shift away from agriculture – and increasing demographic pressure have created abundant room for the pension industry's expansion. This is supported by government measures to strengthen funded systems.

Due to the widely varying stages of economic development, the countries included in this study can be divided into two groups: emerging and industrialised economies. The pension markets of the emerging Asian economies, excluding Japan and Australia, are very fragmented, which makes it difficult to record all retirement assets under management. For the purpose of this study, we based our projection on funded systems in the corporate sector. One exception is India's NPS, which was established for new entrants to the civil service, but will also be open to all workers on a voluntary basis. Assets under management for the seven emerging economies amounted to EUR 251.9 billion¹ in 2006. Among these, Singapore's mature market holds the biggest share of 25.3%, followed by China, the most populous country, with 24.7%.² This picture changes considerably if the industrialised and mature markets of Japan and Australia are included. Each of these countries has more than twice the assets under management than the emerging markets combined. In 2006, the combined assets under management of the overall pension market in Asia-Pacific amounted to EUR 1,407.5 billion.

For all emerging countries under investigation, we assumed that only employees outside agriculture and mining have the opportunity to earn higher income and are thus able to save money for retirement or belong to a mandatory system. We also assumed that voluntary saving is still very low. Our projection took a labour force increase into account, based on UN population development projections. It also considered a sectoral shift from agriculture to industrial employment. We expect

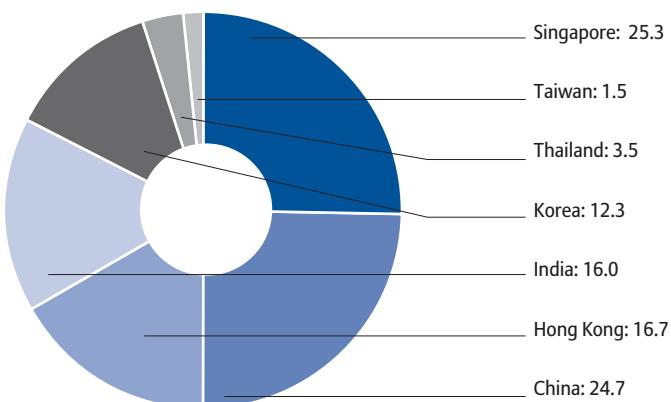
¹ The effective pension asset volume of the emerging markets in 2006 turned out to be slightly higher than forecasted in our 2005 projection. To make a proper comparison, we had to exclude India, as we took different components of old-age provision into account. While the volumes for the six remaining emerging countries in our 2005 study were projected to amount to EUR 212 billion in 2006, they actually reached EUR 219 billion. The biggest difference was in China's 1B pillar, where we underestimated the number of participants and asset volumes. We were too optimistic about market development in South Korea and Taiwan. For Hong Kong, actual volumes were slightly higher than our projection due to a higher number of participants and better income development. In the case of Thailand and Singapore, our projections were in line with actual volumes.

Our projection for Australia was lower than the effective volume in 2006, as we assumed weaker stock market performance. Taking official data revision for Japan's corporate pensions into account, the 2006 projection from the first study lined up quite well with the actual data. While our first study projected that the entire market in Asia-Pacific (excl. India) would amount to EUR 1,367 billion, it actually reached EUR 1,375 billion.

² It should be noted that Singapore's assets are not exclusively designed for retirement.

Distribution of pension assets in Asia's emerging markets, 2006 [%]

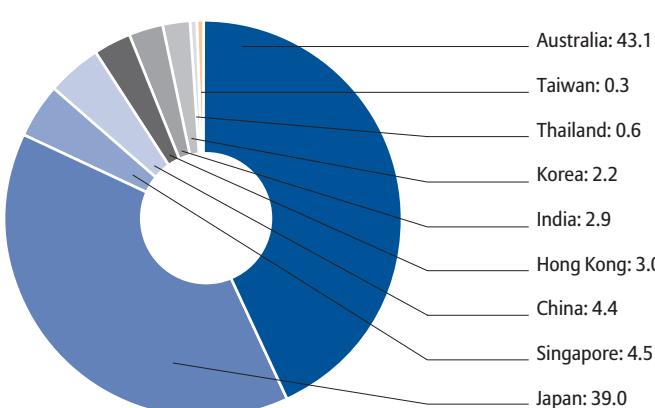
Total assets: EUR 251.9 bn



Source: National Statistics, Allianz Dresdner Economic Research

Distribution of pension assets in Asian-Pacific countries, 2006 [%]

Total assets: EUR 1,407.5 bn



Source: National Statistics, Allianz Dresdner Economic Research

pension assets in Asia's emerging economies to grow by 17.2 % p.a., reaching EUR 1,049.3 billion by 2015. For all of the Asia-Pacific countries covered in this study, we expect assets under management to rise by EUR 1,708.5 billion (CAGR 9.2%), to EUR 3,116 billion by 2015.

These growth rates combine different developments, such as a modest 6% growth rate p.a. in Singapore's long established system and Taiwan's rapidly growing new system, which is at 28.9% CAGR. The size of China's pension market is dominated by the public pillar's funded individual accounts (pillar 1B), which cover around 50% of the urban workforce, with assets under management of EUR 53.4 billion in 2006³.

Even in a conservative scenario where coverage will expand only slightly, assets will grow sevenfold due to an increase in the urban workforce and rising income levels, particularly for high-income earners in rapidly growing urban areas. Considering the total workforce of 765 million people, however, these assets are too modest and concentrated in urban areas to meet the needs of an ageing society.

Another market with high growth potential in the projection period is Korea, which has both "private pension plans" and "new corporate pensions". While the former sets a solid asset base with prospects of higher coverage (15% of the workforce in 2006), the new program will probably see extremely

³ See a detailed description for each country in the technical note included in each country report.

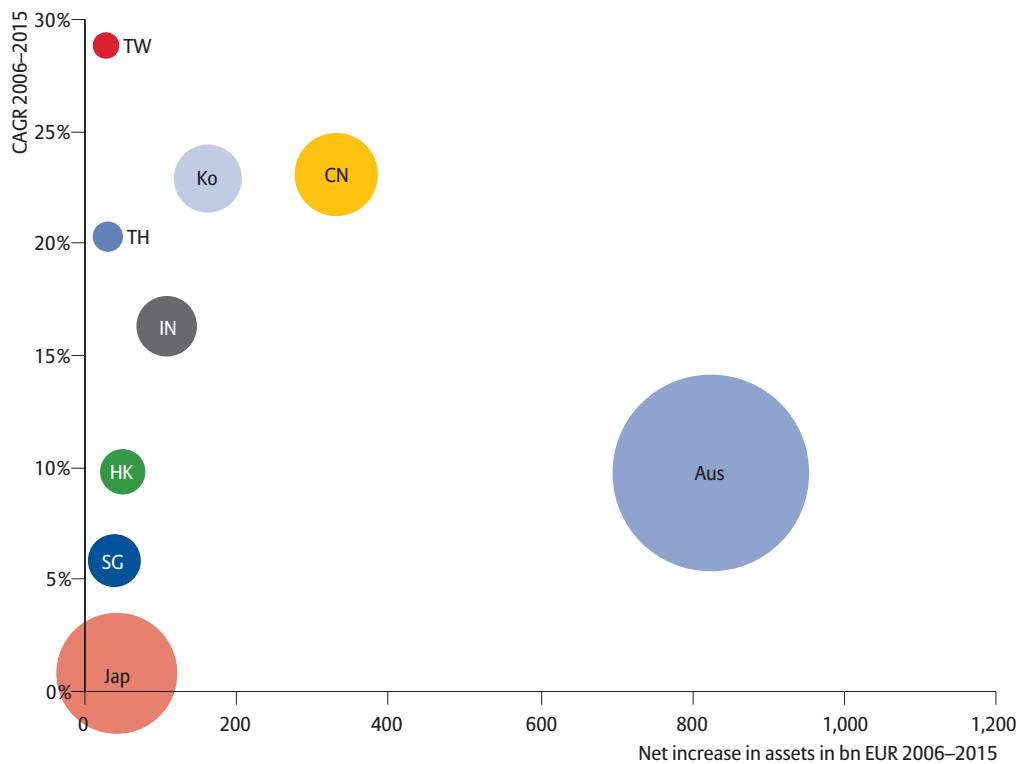
high growth rates of 70% per year. These growth rates are likely to be even higher, as we had to exclude existing severance pay assets from the scenario due to a lack of data. These assets can be transferred into the new corporate schemes, thus generating even more potential. The combined market will grow at an annual rate of 22.9% and increase by almost EUR 170 billion by 2015. India cannot reach the high growth rates and volumes of China or Korea. The majority of the country's population is not able to save, the pension system is very fragmented and the implementation of new schemes is slow. However, thanks to a more favourable demographic picture, pressure on India to reform is not as strong as the pressure on China. India will be the growth driver of Asian pension markets in 10 to 15 years.

With their mature pension markets, Japan and Australia are on an entirely different level. While both systems are currently comparable in size, with respective assets of approximately EUR 550 billion and EUR 600 billion, they have very different growth dynamics. With its young population, Australia will show an asset increase of EUR 860 billion by 2015, while Japan will more or less stagnate at today's level.

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Allianz Global Investors AG

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Development of pension assets under management



The size of the bubbles reflects the estimated asset volume in 2015

Source: Allianz Global Investors, Allianz Dresdner Economic Research

COMMERCIAL PENSION INSURANCE AND HARMONIZED SOCIETY

China Insurance Regulatory Commission (CIRC)

Ladies, Gentlemen, and Distinguished guests:

Good morning, everyone! It is my great pleasure to participate and speak in the OECD/IOPS Global Private Pension Forum. The question of how to establish a sustainable old-age provision system is a big challenge for many governments around the globe. In this context, the pension system featuring multiple pillars has been becoming the mainstream model in the world. In 1990s, by taking into account both China-specific conditions and international experiences, Chinese government introduced the above-mentioned multiple pillar pension system in the urban area. The current urban pension system in China includes three components, i.e. state basic pension, supplementary occupational pension, and personal pension insurance; such old-age pension arrangement has to some extent stimulated economic growth and helped stabilize the Chinese society.

1. Importance of developing commercial pension insurance in China

Commercial pension insurance is an important component of the multi-pillar pension system in China. Against the background of rapid economic growth and radical social and economic transition, developing commercial pension insurance has important implications for China.

1.1 Developing commercial pension insurance in order to meet new needs arising from radical social and economic transition

Firstly, new needs have arisen from rapid economic growth in China. Since the turn of this century China has witnessed a growth rate at the level of 10% on average, which is not only higher than that of developed countries but also one of the top performers in the emerging market economies. Rapid economic growth and the resultant accumulation of assets and wealth among households entail the necessity of establishing a pension system which should be not only more flexible than the old one, but also consistent with the current economic system and level of household wealth.

Secondly, China has already been an ageing society; those aged above 60 has accounted for 11% of the whole population (i.e. 143 million), while this figure was forecasted to increase to 17.2% in 2020 and further to 31% in 2050. Different from developed countries, China became an “ageing society” before it became rich. When developed countries became an ageing society, GDP per capita was between USD 5,000 and 10,000. In China, however, GDP was around USD 2,000 as of 2006. The above-mentioned “becoming ageing before becoming rich” phenomenon not only makes China’s population burden particularly heavy, but also creates new needs in terms of efficiency and sustainability.

Lastly, urbanisation and the trend of traditional family unit getting smaller entails the need of increasing pension coverage. Currently there are around 150 million rural migrant workers employed in the urban area, while over 40 million farmers have lost their land due to China's industrialisation. Meanwhile, the Chinese tradition of "raising sons for retirement" and the important role played by the informal family support in terms of old-age provision are weakening, which requires a more sustainable and efficient pension system to address such changes.

In this context, developing commercial pension insurance is one of the measures which can be used to bring the market mechanism to the existing pension system. Commercial pension insurance can play an important and beneficial role in a number of areas, for example, it can reduce operational costs related to the whole pension system, enhance efficiency, provide more diversified products and services, respond to changing needs from customers more quickly, stimulate domestic consumption, promote economic growth and help stabilize the society.

1.2 Developing commercial pension insurance in order to strengthen the multi-pillar pension system

China's pension system currently features under and unbalanced development across the country, and low coverage rate. As of 2006 the urban pension coverage rate was 66%, i.e. 188 million people participated in the system, out of 280 million urban workers in total. Meanwhile, the rural coverage rate was 7.22%, with 53.74 million participants. In 2006 premium of commercial pension insurance were RMB 62.6 billion, accounting for 0.5% of the GDP, and implying RMB 50 per person. Therefore, it is evident that commercial pension insurance is not playing a role it should have played.

Largely due to China-specific conditions and international experiences, commercial pension insurance can play a crucial role in the multi-pillar pension system. First, China is a large country in terms of population, of which both rural and poor populations account for a significant proportion. In this context, given limited fiscal sources, the government-oriented pension system should have wide coverage but provide low (i.e. basic) benefit. Second, owing to low urbanisation and unbalanced economic growth across regions, among other reasons, enterprise annuities still cover a small portion of the population. Third, in the international context, government, enterprise and individual normally share the responsibilities when providing old-age support, with the role of government being reduced, while that of market increased.

Developing commercial pension insurance can take advantage of unique features associated with different pillars, and therefore promote balanced and coordinated development of the all pillars. In addition, the insurance market is conducive to development of the pension system, given its extensive national network and similarity between insurance business and pension business.

1.3 Developing commercial pension insurance in order to promote economic growth and optimise financial structure

Development of commercial pension insurance can have two beneficial implications. First, it can help accumulate pension assets of long investment horizon, which potentially promotes economic development. Second, it can help improve financial structure and optimize allocation of financial assets. Meanwhile, it can enhance efficiency of allocating financial sources, thus leading to a more balanced and coordinated development between sectors, i.e. banking, insurance, securities. In recent years China's insurance market has experienced rapid growth; for example, as of 2006 total assets under management by insurance companies were around RMB 2.8 trillion. In comparison to international experiences, however, the Chinese insurance market is still underdeveloped. In 2007 insurance penetration (i.e. the ratio of insurance premium to GDP) was less than 3%, while insurance

density (i.e. average pension premium per capita) was less than RMB 500. These two figures are much less than those in developed countries and also lower than those in developing countries. Meanwhile, as of June 2007 total financial assets in China were RMB 47 trillion, of which RMB 44 trillion were within the banking sector, accounting for more than 95% of the total assets, while insurance assets only accounted for less than 4% of the total. International experiences show that competition among financial sectors, e.g. banking, securities and insurance can help improve efficiency of the financial system. Given the dominant role played by the banking industry and insignificant role played by the insurance industry, it is necessary to promote development of the latter, thus strengthen the overall financial structure.

2. Promote development of commercial pension insurance

Although China's commercial insurance market has witnessed rapid expansion in recent years, the overall size is still small largely due to the reason of short history, which implies that the current development of the insurance market neither meets increasing demands from individuals with different preferences, nor plays an important role in the pension system. Given the above observation and with the aim of promoting the commercial pension insurance market form the long-run perspective, the following measures could be undertaken

First, long-term development strategy should be further clarified. As an important component of the pension system, commercial pension insurance's business will certainly overlap with those provided by players participating in other components. Therefore, in order to utilize insurance companies' comparative advantages and help the pension system's coordinated development in China, government and market should be clear about their different roles played in the pension system. For example, as regards the basic pensions, role played by the government should be focused on overall design of the system, policy setting, fund collection and supervision, while some of other functions can be fulfilled by the market. Separation of roles between government and market can reduce systematic risk, ensure safety of pension assets, and also lessen administrative requirements for the government in terms of both capital and staff. Meanwhile, a better service can be achieved due to more market competition. In sum, the pre-market approach, i.e. government purchases pension service from the market, can not only reduce administrative and operational costs but also improve efficiency of the pension system.

The insurance industry actively participates in the pension provision in China. Latest statistics show that insurance companies have already provided related pension insurance services (e.g. actuarial service, asset management and pension payout) for those farmers whose land were appropriated by the government due to urbanisation. Such business is amounted to be around RMB 3 billion and covers nearly 20,000 people in 18 provinces and 53 municipal cities. This innovative insurance business has been recognised in the above regions and getting popular. For example, in Chongqing resistance from farmers whose land were appropriated was remarkably mitigated after they were insured by the innovative policy. Meanwhile, the insurance industry is currently learning the opportunity of providing services for the mandatory individual account, i.e. pillar 1A, as well.

Second, professional services need to be further improved. It should be encouraged to develop professional pension insurance companies. Such professional companies should be able to provide services for both defined-contribution (DC) and defined-benefit (DB) pensions. By doing so, insurance companies not only help enterprises achieve their related human resource HR objectives, but also improve insurance companies' professional services themselves. Since 2004 CIRC has proved establishment of five professional pension insurance companies, i.e. Taiping Pension, Pingan Pension, China Life Pension, Changjiang Pension and Taikang Pension. These companies have demonstrated their advantages, i.e. expertise and professional services in the market. For example, as of June 2007

Pingan Pension and Taiping Pension were engaged in the EA (enterprise annuities) business with 1,600 enterprises, with assets of RMB 6 billion under management, which accounted for 70% of the total market managed by the professional pension trustees. Meanwhile, the newly established Changjiang Pension will take over the all legacy EA assets in Shanghai, which is around RMB 18 billion. So far, professional insurance companies have been the lead of the EA market in China. It is believed that with continuous improvement of the regulatory framework in China, professional pension insurance companies will grow fast in the future.

Product and service innovation is the engine and source of pension insurance' development. In this context, pension insurance companies should respond to different demands of customers on a timely basis by inventing and designing new products, e.g. fixed life annuity, variable life annuity, changeable life annuity, and open-ended pension account etc. Meanwhile, insurance companies should provide more tailor-made services, e.g. more investment options and better account administration. In addition, it is also important to establish appropriate risk management, redress mechanism, in order to improve pension fund performance and enhance insurance companies' competitiveness.

Third, a better regulatory environment is needed. A well-designed and supportive tax regime plays an important role in the pension system, which in turn has significant implications for the commercial pension insurance business. Tax relief in the form of deferred payment for both enterprises and employees can be observed in many countries. Meanwhile, research shows that deferred tax payment due to deduction of pension contributions has limited impact on tax income. Take the individual pensions as an example. Under the assumption of three participation rates, i.e. 10%, 20% and 30%, and income tax rate of 25% above RMB 1,600 per month, deferred tax would be at the levels of RMB 900 million, 1.8 billion and 2.7 billion, respectively. Given that in 2006 the total tax income in China was RMB 245.2 billion, the above-calculated deferred tax would only account for a small portion of the total tax income, i.e. 1.1%. Meanwhile, if tax at the level of RMB 1 is deferred, corresponding RMB 20 pension assets would be established. In the near future CIRC will collaborate with other ministries and study tax policies and pension provisions, in order to improve the current pension regulatory environment in China.

Fourth, supervisory structure in China needs to be strengthened. Past experiences show that a well functioning supervisory structure can prevent and reduce operational risk, and ensure a healthy insurance market. CIRC adopts the core principle of "prudential operation", with the aim of controlling risk, enhancing pension fund performance and maximising beneficiaries' benefits. Three measures have been undertaken by CIRC to strengthen regulation and supervision of the commercial pension insurance market in China. First, strengthen the market behaviour. Various supervisory tools are employed to address the issue of mis-behaviour in the market, e.g. vicious price competition, exaggerated investment income and inappropriate return guarantee. Second, strengthen regulation and supervision of fund investment in order to ensure high return. Commercial pension insurance and long-term life insurance share some similarities, e.g. long contribution periods, and long investment horizon; for example it could take as long as several decades from starting contribution to starting withdrawal. Third, strengthen information disclosure, increase transparency and enhance public awareness. CIRC is planning to release a legislation on this subject, i.e. "Administrative measures on pension insurance business by insurance companies", which it is believed will contribute to development of the commercial pension insurance market in a positive manner in China.

Ladies and Gentlemen! With the increasing role played by the insurance industry in general in China, commercial pension insurance certainly will make more active contribution to China's pension system. Meanwhile, growth of commercial pension insurance will also contribute to development of the harmonized socialist China.

THE DEVELOPMENT OF PENSION FUND INDUSTRY IN INDONESIA

by
I Wayan Wijana*

Industry Overview

Indonesia's pension fund scheme is fragmented into several schemes. The schemes serve various segments of workers which can be classified into two major schemes. Firstly, the mandatory publicly managed pension fund schemes that cover the civil servants, police force, armed forces and private workers. All these mandatory programs are administered by state owned companies. Civil servants pension scheme run under the pay as you go system. Civil servants receive lump sum benefits and monthly pensions after retirement. The lump sum benefits are insured by PT Taspen, as endowment insurance and paid at retirement. The monthly pension fund is also administered by PT Taspen. The sources of pension funding are largely from the state budget. Another source contributed by employee is at 4.75% of salary. Members of the police force and armed forces have been treated very similarly to civil servants. The fund is administered by another state owned company PT Asabri. Private employees play a part in pension scheme through their participation in provident fund run by PT Jamsostek. The scheme is compulsory defined contribution scheme.

Secondly, privately managed pension fund scheme is another option for Indonesian to get involved in pension industry. This participation is voluntary for all Indonesian. The law, enacted in 1992, was introduced to regulate voluntary private pension fund. The law makes Pension Fund as separate legal entity. The law also stipulates that the pension fund must segregate their assets from the founder. Employers can be a founder of defined benefit or defined contribution pension schemes by establishing employer pension funds for their workers. Group of employees or individual can also prepare their pensions by joining Financial Institution Pension Fund (FIPF). The FIPF which can be established by bank and insurance are only able to run a defined contribution program.

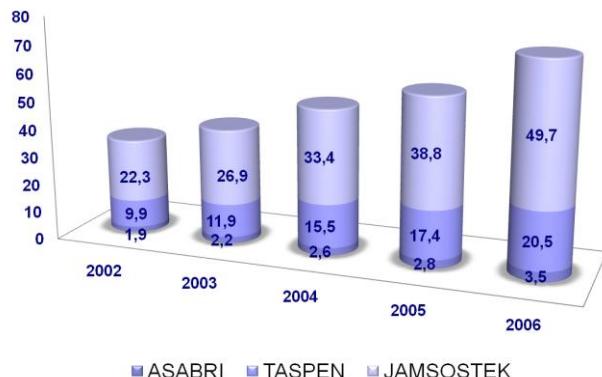
Publicly managed pension fund

As can be seen from the graph below, in 2006, the total asset of publicly managed fund has reached Rp 73.7 trillion¹ which more than half is managed by PT Jamsostek. Asset of mandatory program run by PT Jamsostek has increased for the last 5 year². However the coverage of participants joining the program is still low, about 30% of the local company (based on PT Jamsostek Annual Report 2006).

¹ The exchange rate of 1USD is about Rp 9,020 at the end of December 2006 so the total assets equal to approximately USD 8,170 million.

² Data is for the whole program not specific to provident fund. More than 85% of the fund managed by PT Jamsostek is for the old age program.

The Assets of Publicly Managed Fund (in trillion Rp)



Source: Insurance Bureau

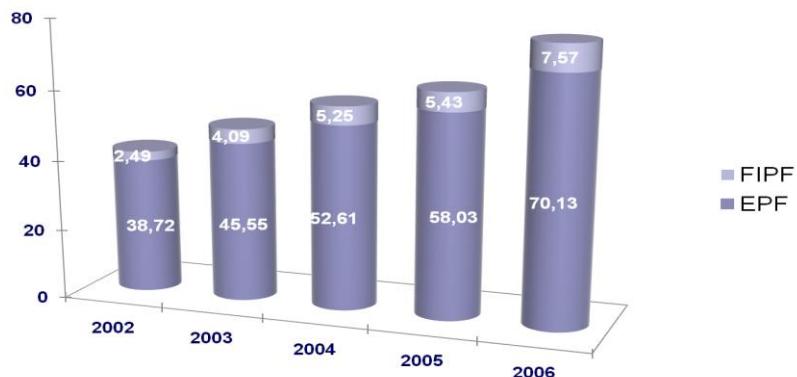
Closer look to the investment portfolio shows that the proportion of short term investment holds the large proportion. In 2006, 48% PT Jamsostek asset were invested in bank time deposits, as were 22% of PT Taspen and 68% of PT Asabri.

Privately managed pension fund

Over the past five years, the asset of private pension fund industry has increased at rate about 16% per annum. As of December 2006 the net asset of private pension fund has reached Rp 77 trillion. These assets are administered by 272 EPF and 26 FIPF. The assets are still very small compared to Indonesia's GDP. It comprises less than 3% of GDP. Compared to banking industry which has more than Rp 1,100 trillion in deposits, the pension fund industry is too small. The entire private pension industry has less than 2 million participants (1.6 million). Moreover the industry tends to slow down. There were more than 100 pension funds that have been liquidated since the introduction of private pension fund in 1992. Mostly are caused by the financial problem of the employers. The asset still increase because the pension legislation require the liquidated pension asset and liabilities to be transferred to other pension fund and cannot be distributed directly to participant prior to the retirement. There were no significant numbers of new participants get involved in the industry.

The development of private pension fund asset is shown below:

The Assets of Privately Managed Fund (in trillion Rp)



Source: Pension Fund Bureau

The investment portfolio of the private pension fund is slightly different to the composition of the mandatory program. The private pension funds has moved their placement from short term to long term investment instruments, especially to government bond. There is a gradual movement away from time deposit into capital market instruments as the government bond market has launched and time deposit return has shown the decreasing trend. This shows that private pension fund would be interested in investing in long term type if the instruments were available pension funds.

Private Pension Funds Development

In order to build Indonesia into a more stable nation, Indonesia needs to focus in the long term type saving to finance the development project. As the nature of pension fund industry that has long term orientation, the government expects the pension funds can play major roles in providing the sources of long term saving. To encourage the growth of the industry, one of the government efforts was to introduce the Road Map of Pension Fund Industry in 2006³. The road map will be the guidance to develop the industry for the next five years.

The Road Map consists of two missions. The mission are as follow: (1) to increase the number of pension fund assets and participants and (2) to strengthen the sound operation of pension fund.

To achieve this mission, some implementation programs are meant to be implemented, they are as follow:

- Campaign of private pension fund

Many people are still lack of knowledge about the private pension fund, it impedes the industry development. The Road Map requires that the campaign of private pension fund should be done comprehensively. The efforts will be focused on changing the mindset of the people through education and promotion of the private pension funds. The efforts should involve all stakeholders.

- Strengthening the management of pension fund

The regulator has issued the decree of good pension fund governance. The decree encourages pension fund to design and implement good pension fund governance. Another implementing program is to move toward the risk based supervision. Bureau of Pension Fund as the supervision body for the private pension funds will adopt risk based supervision approach in its supervisory function.

- Scrutinizing current regulation of private pension program and propose the amendment of pension fund law. Amendments are proposed to make the pension program become more flexible to attract more participants/employers get involved in pension industry.
- Harmonizing the Law of Pension Funds with the labor law and social security law

Coordination among government agency such as the Ministry of Finance the Ministry of Manpower, The Ministry of Welfare will be enhanced to harmonize the Labor Law, national social security law and the Pension Fund Law.

³ The Road Map of Pension Fund Industry can be accessed in http://www.bapepam.go.id/dana_pensiun/regulasi_dp/peraturan_dp/SK842006.pdf (available in Indonesia version only)

Labor Law

Some opinions argue that the severance payment as require in labor law will discourage employers to sustain their private pension program and adversely affect private pension industry. However, the road map does believe that the severance payment regulation could be harmonized with the private pension fund law. The harmonization should be designed both to benefit pension fund industry development and to minimize the burden of employer in relating to severance payment.

Social Security Law

Indonesia's social security system in Indonesia is based on the Law no 40/2004 of National Social Security System. Participation is mandatory for all citizen offering 5 programs which are health insurance, work accident insurance, old age pensions, pensions insurance, and life insurance. The contribution need to be paid to the programs will be made gradually. The law also stipulated that PT Jamsostek, PT Taspen, and PT Asabri will be the administering bodies for the social security program. In 2005, the article regarding the administering bodies was announced to not legally binding by the constitutional court. However, the Ministry of Welfare (as described in the Handbook of Social Security System Reform in Indonesia) states that the ruling of constitutional court will have no significant implication for implementation of the national social security law.

The national social security law will be fully implemented in 2009. The framework of the system should be carefully designed to ensure the law can be implemented effectively without discouraging the development of the existing industry such as private pension funds.

PENSION FUND INVESTMENT AND REGULATION: AN INTERNATIONAL PERSPECTIVE AND IMPLICATIONS FOR CHINA'S PENSION SYSTEM

by
Yu-Wei Hu, Fiona Stewart and Juan Yermo*

November 2007

Executive summary

Pension fund assets in OECD countries have increased rapidly over the past decades (OECD 2007a), and it is evident that such trend will continue. Against this background the issue of how to invest such a large amount of assets has become increasingly important, and also has policy implications. Broadly speaking pension funds around the globe have been subject to two approaches, i.e. quantitative asset restrictions (QAR) and the prudent person rule (PPR). In this paper we first review how pension funds are regulated in both OECD and non-OECD countries. Next, the existing regulatory framework of funded pensions in China is reviewed (consisting of the mandatory personal account and Enterprise Annuities - i.e. voluntary occupational pensions). Finally, we conduct a simple empirical study, investigating quantitatively the extent to which potential benefits could be achieved if the current QAR approach in China is shifted towards a more liberalised regulatory approach. Given our empirical results which support the PPR in China, a number of policy recommendations are proposed in order to strengthen the existing pension regulations. They include a removal of lower limits on certain asset classes, consideration of allowing pension assets to be invested abroad etc.

Classification codes: G23, G18

Keywords: Pension funds, pension regulation, quantitative asset restriction, prudent person rule, enterprise annuities, China

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1. Introduction

Pension fund assets in the OECD area have been in rapid increase over the past decades, largely due to ageing populations and reforms increasing funded pensions in many countries. For example, the latest statistics (OECD 2007a) show that total funded pension assets in 30 OECD countries in 2006 was equivalent to USD 14.7 trillion, which accounted for 73.9% of GDP. It is almost certain that the global pension fund market will continue its expansion in the foreseeable future. Against this background the issue of how pension assets are invested becomes an important issue. In this regard, authorities have a policy concern about the investment performance of pension fund assets, otherwise shortfalls in required retirement income will have to be met by the nation state (Clark and Hu 2005). Broadly speaking, there are two forms of government policies relating to pension fund investment; one involves strict quantitative asset restrictions (QAR), where the government makes specific regulations, typically on the limits of holding a particular class of assets. The other approach is termed as prudent person rule (PPR), in which pension funds are invested prudently as someone would do in the conduct of his or her own affairs, i.e. there is generally no any strict restriction on particular assets.

It should be stressed that these two approaches are not mutually exclusive. Indeed, there is a continuum of approaches between a “pure” QAR and a “pure” PPR with most countries lying somewhere in between. The OECD Guidelines on Pension Fund Asset Management recognise the validity of both approaches and require the implementation of the PPR approach but also permit some quantitative restrictions that are consistent with the goal of diversification, such as limits on portfolio investment in a single issue or issuer (and especially on ‘self-investment’, that is investment in assets of the plan sponsor, provider or asset manager).

While a few countries (primarily non-OECD countries) still only apply the relatively crude first block of quantitative limits, most OECD countries have reduced the number of these and also apply the PPR approach. A number of countries are additionally moving towards a more direct form of monitoring investment risk, which seeks to quantify it and proactively tackle potential problems in order to prevent debilitating investment losses from occurring.

In China pension funds (i.e. mandatory, individual accounts and Enterprise Annuities) have been subject to QAR regulations, particularly the mandatory individual accounts which form part of the public pension system. Although the total amount of funded pension assets is currently small, it is evident that the pension market in China will grow rapidly in the near future. Therefore current investment regulations are likely to be not only counter-conducive to promoting the development of the Chinese pension market, but also – more importantly - have the potential risk of hindering the achievement of higher returns, therefore eventually reducing benefits for plan members.

In this paper we first review pension fund regulation issues in OECD and non-OECD countries with a focus on international experiences of the two approaches, i.e. QAR and PPR. In this part (consisting of Sections 2 and 3) we also draw on the OECD Guidelines on Pension Fund Asset Management and a recent survey on portfolio limits conducted by the OECD. In Section 4 we discuss existing pension fund investment regulations in China, in which the emphasis is on funded pension assets. Section 5 analyses the quantitative effects of liberalising current asset restrictions in China towards a more diversified investment approach (e.g. PPR), by conducting a simple empirical study. Section 6 concludes this paper with several specific policy recommendations for China’s pension fund investment regulation.

2. Quantitative limits

2.1 OECD Guidelines on the use of investment limits

The OECD ‘Guidelines on Pension Fund Asset Management’ released in 2005 address the issue of using quantitative limits for controlling investment risk. The guidelines allow for the use of quantitative limits as they can serve to establish important boundaries that prevent or inhibit inappropriate or extreme investment management decisions. They may be applied to ensure a minimum degree of diversification and asset-liability matching, promoting the prudential principles of security, profitability, and liquidity pursuant to which assets should be invested.

As well as maximum levels within asset classes, the guidelines state that a list of admitted or recommended assets (at a broad level) may also be produced by the supervisor (either on a compulsory or voluntary / ‘comply or explain’ basis). Likewise the guidelines allow that certain categories of investment may be strictly limited (for instance loans without appropriate guarantees, unquoted shares, certain equities which may raise major risks of conflicts of interest, illiquid assets, and, in general, investments that lack sufficient transparency). The guidelines also note that where category ceilings are established, there should also be a procedure for correcting excesses within specified time limits. The use of derivatives may also be specifically addressed (e.g. those with unlimited commitments or for speculative purposes should be prohibited).

The only actual quantitative limit recommended by the guidelines is that of self-investment (maximum 5%, 10% for group holdings). Interestingly, even countries which have adopted the prudent person approach to controlling investment risk often still apply such self-investment limits – these being in effect an expression of aspects of the prudent person rule.

Limitations and dangers of quantitative rules

The OECD guidelines, however, equally warn that quantitative limits should be applied with care. For example, minimum investment limits (or floors) are not recommended – as these force pension funds to invest specified portions of their portfolios in particular asset categories, leaving pension fund asset managers no or little ability to walk away from what they might determine to be unwise or inappropriate investments and may artificially inflate asset prices (Hu 2006a). Likewise limits which impede diversification (at home or abroad) or asset-liability matching – both of which are suitable investment goals – should also be avoided. As a check, the guidelines recommend that quantitative portfolio limits should be regularly assessed to determine whether they are unnecessarily inhibiting the ability of pension fund asset managers to implement optimum investment strategies and amended to the extent necessary.

In general the guidelines recommend to use quantitative limits sparingly, and to combine them with a move towards a prudent person rule where possible. The main drawback of quantitative limits is that they do not pay attention to the contribution of any specific security or asset class to the overall risk in the pension fund’s portfolio. They can also be difficult to change and adapt to new market environments, especially when the limits are set in the primary legislation. When limits are set at very low levels they may hamper diversification, performance and even asset liability management, as some asset classes may offer a better match to a pension fund’s liabilities.

Moreover, quantitative limits alone are not sufficient as they cannot effectively regulate the manner in which pension fund asset management decisions are made within the boundaries of different asset classes and, in fact, are silent with respect to activity that is “within bounds.” Therefore countries that rely primarily on portfolio limits should, at a minimum, also set forth prudent person

standards for pension fund governing bodies. The debate between quantitative limits and the prudent person rule ultimately comes down to the following question: who should be responsible for making the initial, broad determination of an asset allocation policy for a pension fund – the state or the each fund's trustees?

There is much evidence on the potentially damaging effects of strict portfolio limits on diversification and performance. Most of it is based on historical data which raises concerns over the validity of the counterfactual. However, the impact is so large in some cases as to warrant concern over the impact of such limits. The recommendation is also likely to vary by country. The gains from international diversification are greatest in small, developing countries, and smallest in large, developed ones. A recent paper by Burtless (2006) concludes that workers in the United States could have earned higher pension benefits from portfolio diversification that included overseas stocks and bonds but that the risk of obtaining a very low pension replacement rate would have also increased. The main reason for this result is that historical returns in most overseas markets have been lower than those in the United States. On the other hand, Srinivas and Yermo (2002) conclude that Latin American pension fund investment (up to half the equity portfolio in some cases) in foreign equity indices of developed countries would have not only improved returns but also lowered risk.

2.2 Quantitative limits in OECD and non-OECD countries

The OECD guidelines give details of the quantitative restrictions which are still applied in OECD countries. Over one half of OECD countries still impose some type of portfolio limit by asset class. For example, equity limits are applied by eighteen of the thirty OECD countries. The highest limit is Turkey's, at 76%, while the lowest is Mexico at 15% (only through structured notes linked to stock market indices). Some countries also still set investment floors, though these are not recommended by the OECD Guidelines. For example, Mexican mandatory pension funds with a conservative investment allocation (so-called Fund 1) must invest at least 51 percent of their assets in inflation-indexed securities. In Turkey, pension funds must invest at least 24 percent of contributions in government bonds.

Many countries also impose restrictions on foreign investment or/and impose currency matching requirements. Countries that restrict investment in securities issued abroad or issued in foreign currency include Korea and Mexico (20 percent), Slovak Republic (70 percent), and Poland (5 percent). Finland sets a limit of 10 percent on investment outside the European Economic Area, while a few other countries impose restrictions on investment outside the OECD (Hungary - 20 percent -, Italy – 5 percent -, the Czech Republic and Iceland – 0 percent).

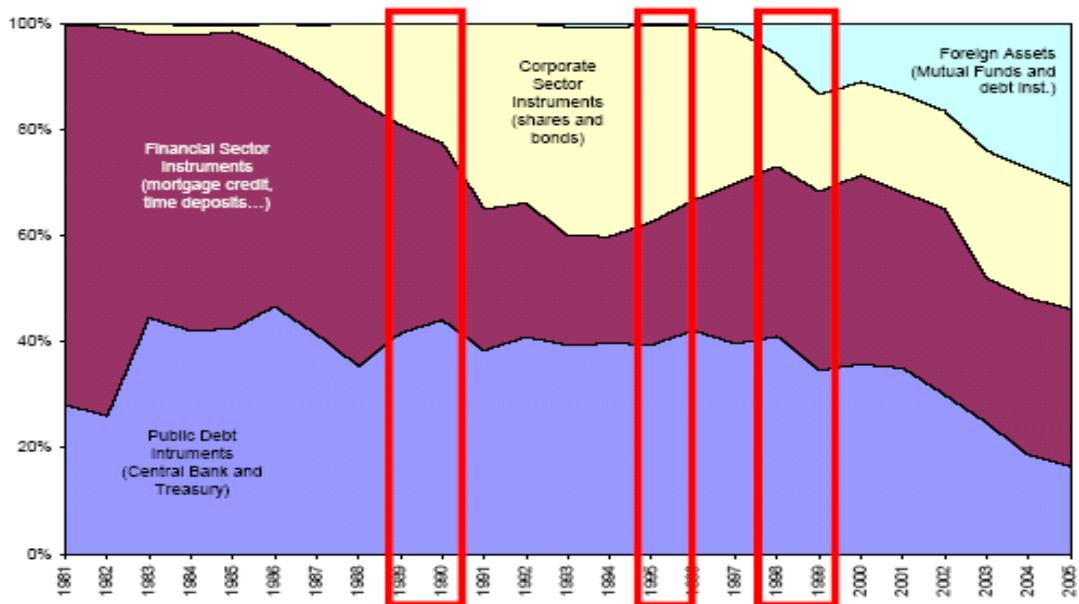
Among the countries with a prudent person rule tradition (primarily Anglo-Saxon countries), some also have also elected to use at least one type of quantitative limitation to address conflicts of interest. This is true, for instance, in both the United Kingdom and the United States, which are both typically thought of as wholly adopting a prudent person rule method of regulation. Equally some countries in which quantitative limits serve as the core method of regulation also use the prudent person rule – or some similar form of behaviourally-oriented guidance – in addition to the quantitative limitations, thus providing guidance regarding the manner in which investments within each asset class should be made. Evidence of such a mixed approach can be found in some OECD countries (such as Poland). Interestingly the European Union have adopted a hybrid approach via their directive on 'Institutions for Occupational Retirement Provision' (IORPs). This enables countries to retain quantitative limitations for domestic pension funds within their borders, and provides a broad, prudent person rule for pan-European funds (with some quantitative restrictions – i.e. limit of 5% in one single company, 30% in unregulated markets and 30% in assets outside the Euro zone).

Many OECD countries have relaxed or altogether moved away from quantitative restrictions. Canada eliminated its 30 percent cap on foreign investment in February 2005. In Germany, while restrictions remain for the *Pensionskassen*, a new type of financing entity, the *Pensionsfonds*, was introduced in 2002 which is not subject to any quantitative restrictions on investment by asset class other than currency matching requirements and a 5 percent limit on investment in a single issuer (including the plan sponsor). In Japan, pension funds were subject to the so-called 5-3-3-2 rule (a floor of 50 percent on cash and bonds, a ceiling of 30 percent on equities, a ceiling of 30 percent on foreign securities, and a ceiling of 20 percent on real estate) until April 1999, when the rule was eliminated and regulation veered towards the prudent person principle. New regulations introduced in Korea in September 2003 eliminated the 40 percent limit on domestic listed equities, introduced a ceiling of 10 percent for non-listed equities (not permitted previously) and lifted the foreign investment ceiling from 10 to 20 percent. Mexico changed its investment regulatory framework in 2002. Pension funds were permitted to invest in securities denominated in foreign currency by any local issuer (not just the Mexican government and central bank). In Switzerland, pension funds face quantitative limitations on their investment in equities and foreign securities but since April 2000 these can be surpassed if the fund can justify them as part of a prudent investment policy.

In all these countries, the relaxation of asset limits and the concomitant move towards the PPR is being complemented with efforts to strengthen governance as well as enhanced risk management models to assess portfolio risks. For example, in Mexico, the reform of investment regulations in 2002 was accompanied with the establishment of a new system of supervision based on value-at-risk.

In emerging market economies (EMEs) the QAR approach has been traditionally dominant. For example, in the eight EME countries surveyed by the latest OECD Survey of Investment Regulation of Pension Funds (OECD 2007b), seven countries have implemented the QAR approach, while the only exception is Israel. In Brazil the existing regulation specifies that maximum 50% of pension assets can be invested in companies with a good governance rating, and up to 20% can be invested in private equities. In South Africa, the upper limit on investment in real estate is 25%, while investment in retail and private investment funds is not allowed.

However, in many EMEs pension fund investment regulations have been gradually liberalised, and such a move from a strict QAR to a more liberalised investment approach on part reflects improved experience and capability of pension regulators, and also the pressure to enhance pension fund performance by seeking a more diversified portfolio. Larrain Rios (2007) provided evidence on the Latin American countries, supporting this trend. For example, pension funds were initially not allowed to be invested in foreign assets in Argentina, Bolivia, Colombia and Peru. However, since inception of reforms such restriction has been relaxed in early 2000s. Consistent with such trend, Chilean pension fund portfolios have been becoming more diversified on the one hand, and witnessed more allocation to high-return-high-risk assets on the other hand, as shown in the following graph.



Source: Larrain Rios (2007)

For example at the beginning stage of the Chilean pension reform all assets virtually were invested in government bonds and bank deposits. Over the past 25 years, following relaxation of pension fund investment regulations, allocation to these two traditional asset classes was in steady decline, while investments in corporate bonds and foreign assets were in increase.

2.3 Quantitative Limits within a risk-based approach to pension supervision

Some countries which still rely heavily on quantitative limits have integrated these into a risk-based approach to supervision. The supervisory authority consequently monitors investment risk according to whether pension funds are invested within the quantitative limits set. Non-compliance will be added to the overall risk score within the risk assessment part of risk-based supervision process. For example in Kenya the Retirement Benefits Agency still applies a broad range of investment guidelines to pension funds including: maximum 5% in cash, maximum 70% in government securities, maximum 70% in regionally listed shares, maximum 5% in unquoted Kenyan companies, maximum 30% in one company etc. The rule that these maximum limits may be violated in cases of asset revaluation or appreciation for a period of no more than 90 days is also applied. The authority is, however, moving towards a risk-based approach to supervision and builds these limits into its overall risk assessment. The degree of diversification of a fund's investment portfolio and compliance with the investment guidelines count for 5% of the overall risk score - 2 marks are awarded if the scheme has complied with investment guidelines / 1 mark if invested in guaranteed funds (some penalization to take account of credit risk in such an investment instrument) and 0 for non-compliance. The Retirement Benefits Authority also considers investment income within its on-site inspection guidelines (e.g. recommending consideration of the volatility and distribution of income by asset class).

3. Prudent Person Rule

3.1 OECD Recommendation on the Prudent Person Standard

The OECD ‘Guidelines on Pension Fund Asset Management’ also lay out recommendations for the use of the prudent person standard. This application of this standard is defined as “*that the investment of pension assets is undertaken with care, the skill of an expert, prudence and due diligence.*” The guidelines clarify that the standard applies to the governing body of the pension fund and other appropriate parties, and that it forms part of the fiduciary duty of the governing body (i.e. the duty of loyalty where by fiduciaries must act in the interests of the pension plan members and beneficiaries). The guidelines state that where fiduciaries lack the necessary expertise to apply the prudent person rule their duties should be outsourced, although their monitoring role and ultimate responsibility for the plan cannot be transferred.

Using the prudent person rule to monitor investment risk indirectly is more difficult than solely applying quantitative limits, as the standard is qualitative and therefore subjective in nature. The main application of the prudent person rule comes via behaviour and process rather than outcome. The OECD guidelines therefore state that ‘due diligence’ in the investment process be shown via an investment policy and internal controls for implementing and monitoring the investment process effectively. For example the investment process of a pension plan should be written, with clear investment objective suitable for the fund (i.e. taking into account the liabilities and risk tolerance of the fund, liquidity needs etc.) – as well as suitable diversification applied. The pension supervisory authority needs to watch that such mechanisms for monitoring and control are in place, rather than looking solely at investment outcomes.

3.2 Practical Experience of the Prudent Person Standard

Interpretations of the prudent person rule

Given the subjective nature of the standard, the application of the prudent person rule has changed over time and differs across OECD countries. For example, historically the prudent person rule was oriented towards the avoidance of risk and the analysis of investment decisions were reviewed by courts on an investment-by-investment basis. The old English rule, which was designed to protect beneficiaries from speculative investments, provided that the only safe (and thus prudent) investment was in government-backed securities, the sole obligation of a trustee being the conservation of principal. This interpretation was radically changed by a court case in 19th America (*‘Harvard College v. Amory’*) which departed from this narrow rule (allowing for investment in stocks) by applying a process-orientated approach and duty of loyalty and rejecting inappropriate specific limitations. However the emphasis was still on income, safety and the avoidance of speculation – which allowed a conservative interpretation of the prudent person rule to last well into the 20th century (in both the USA and UK), until modern portfolio theory and financial economics became accepted – allowing risk to be considered at the portfolio rather than individual asset level.

Similarly, details of prudent person standard vary between OECD countries. For instance, the US incorporates a “prudent expert” standard in its pension laws, whereas the UK uses an “ordinary man of business” standard. Likewise, some countries will more explicitly state various aspects of the rule than others. For example, the UK explicitly requires fiduciaries to develop a statement of investment policy to guide investment decision making. In the US, however, there is no explicit rule on this point.

It can be seen that the concept of risk and risk management has varied considerably over time and place – the prudent person rule provides the flexibility to adapt to such changes. The downside is that

because the rule can be interpreted in a flexible manner it is not always easy to determine when it has been breached. This places more demands on fiduciaries and supervisors. The courts have also played a central role in common law countries in refining the definition of the prudent person standard and in determining whether it was breached in any specific case.

International evidence for successful application of the prudent person rule

Although tentative conclusions from studies have found that the prudent person rule allows higher investment returns than quantitative limits, empirical data also suggests that pension funds subject to prudent person principles do invest cautiously (e.g. all else being equal, pension funds invest more cautiously than mutual funds). Indeed the rule may have a constraining effect on management behaviour (i.e. encouraging indexing and herding, preventing investment in new products etc.), as the simple way to interpret the standard is according to past behaviour or by what everyone else is doing.

The question therefore remains as to how to ensure that the prudent person rule is implemented successfully. The following points provide some guide:

- Regulatory role – make sure the regulatory environment does not discourage new investment instruments / practices (e.g. US DOL clarified the role and management of derivatives in pension portfolios)
- Supervisory role – make sure the supervisory authority and plan members can monitor investment management activity via the supply of adequate information
- Governance framework – supervisory authorities should ensure that the governance framework of pension funds is sufficiently robust to produce appropriate decision making (e.g. requiring an investment policy to be written etc.).
- Sanctions framework: the weight of sanctions needs to be carefully balanced (not so strict as to stop innovation / not so weak as to allow reckless investment)

3.3 Prudent Person Standard within a risk-based approach to pension supervision

Checking that pension funds are in compliance with these qualitative, more subjective rules is more difficult than applying quantitative limits. However, supervisory authorities are incorporating such assessments into their risk-based supervisory approaches. One example of this approach is Australia¹

The Australian Prudential Regulatory Authority (APRA) supervises all financial institutions, including pension funds, and applies a sophisticated risk-based supervision system for pension funds. Their approach to assessing investment risk is outlined below. Documents used by APRA in assessing investment risk include balance sheet data, including statistics submitted quarterly (by large funds) and annually; cash flow statements and projections; investment mandates for external managers; investment manager reports; tender and evaluation documents relating to manager selection; and regular reports to the trustees. This assessment is then fed into the PAIRS rating system (Probability and Impact Rating System) which determines the approach of the supervisory authority. A fund receiving a ‘very low’ PAIRS rating on inherent balance sheet/investment risk will have well-diversified investments spread across different investment products and markets, and no exposure to volatility in returns. At the other end of the spectrum, a fund rated ‘extreme risk’ on this criterion will

¹ The description of APRA’s application of the prudent person rule to its risk-based approach to supervision is taken from a report prepared for a World Bank/ IOPS project looking at approaches to risk-based supervision within various countries: ‘Risk-based supervision and regulation of pension funds: Case study Australia’

have a concentration of investments in one product or market, and high exposure to volatility. In between, a high-medium rating (1.6 to 2.0) is aligned with ‘some concentration’ of investments in certain products or markets, and ‘significant exposure’ to investment volatility.

In order to derive this rating, APRA does not apply quantitative restrictions². Instead APRA’s supervisory approach is to determine whether a fund has a clear investment strategy; to assess whether that strategy is consistent with the trustee obligations; to make a judgment on whether the trustees, with service providers where relevant, are competent to carry out that strategy; and to assess whether they are capable of monitoring the strategy’s implementation and adapting it to changed circumstances for either the fund or for markets.

4. Pension fund investment in China

Pension reforms in China were first introduced in urban areas, and have been subject to continuous amendments over the past decades. Table 1 gives the latest specification of the urban pension system. Pillar one comprises two components, i.e. 1A and 1B. Pillar 1A runs on a PAYG basis. The contribution is 20% of wages and wholly from enterprises. The target replacement rate is 35%. Pillar 1B, managed as individual accounts, is financed by an 8% contribution from individuals. With a target replacement rate of 24.2%, the monthly payout from pillar 1B is calculated by dividing the account balance by 120 then multiplied by an annuity factor. Both components are mandatory, and the collective target replacement rate is 59.2%, i.e. 35% from pillar 1A and 24.2% from pillar 1B. Pillar 2 – termed as Enterprise Annuities (EA), is equivalent to the occupational pension plans in the western countries³. Contributions to this pillar are voluntary and currently the EA plans are mainly set up by the largest, profitable State-owned enterprises (SOEs). The last pillar, i.e. personal plans, is currently underdeveloped in China.

Table 1 The structure of the urban pension system in China, as of 2006

Pillar	Contribution rate %	Target replacement rate %	PAYG/funded	Mandatory/voluntary	Status
1A	Enterprise:20	35	PAYG	Mandatory	In operation
	Individual:0				
1B	Enterprise:0	24.2	Funded*	Mandatory	In operation
	Individual:8				
2	Enterprise: N.A.	N.A.	Funded	Voluntary	In operation
	Individual: N.A.				
3	Individual: N.A.	N.A.	Funded	Voluntary	Not finalized

Source: OECD (2007c) *, fully funded in principle, but in practice run on a PAYG basis.

² The only restrictions applied are on ‘in house assets’ (that is, investments in an employer-sponsor and related entities), the sole purpose test (investments must be for the purpose of delivering retirement income) and prohibitions on lending to members.

³ In fact defined benefit (DB) pension plans exist in certain forms in China, e.g. group insurance contracts. However such arrangements (or legacy pension assets) are not entitled to tax relief benefits so far.

Latest statistics from MOLSS show that as of 2006 the accumulated assets within Pillars 1A and 1B were RMB 548.9 billion (USD 73.6 billion), and as of September 2007 the total amount of EA assets was approximately RMB 120 billion (USD 16.1 billion). Although funded pension assets are still small, it is expected that they will increase rapidly in the near future for the following reasons. First, since early 2006 the Chinese government has been seriously working on the issue of “empty pillar 1B”, and decided to “back-fill” this account in 11 provinces via fiscal transfer from both central and local governments; potentially this reform for making the empty accounts fully funded will be extended to all the other provinces. Second, a number of legislations have been released in recent years, with the aim of promoting development of the EA market. It has been forecasted that the overall EA assets in China could grow to the level of USD 1.8 trillion by 2030 (World Bank 2006).

Despite the promising market expansion of funded pension assets in China, the current investment legislations, outlined below, might be counter-productive to achieving a return which is sufficient enough to support retirees’ post-retirement lives:

- Pillar 1B: As state pensions and with the aim of providing pensioners with the basic needs, all assets within this category are only allowed to be invested in bank deposits and government bonds
- Pillar 2: As voluntary occupational pensions, assets of this pillar were mainly invested in bank deposits and government bonds like Pillar 1B, although some portion of the funds were directed to other asset classes, e.g. shares and insurance products. Since 2004, however, EA markets have entered a new era, following the release of two EA legislations. According to the two legislations, EA assets are subject to quantitative asset restrictions, e.g. maximum 30% of assets can be invested in shares and shares-like products, and minimum 20% of assets should be invested in government bonds.

5. Benefits of pension fund investment liberalisation in China

In earlier sections the positive benefits from liberalising a strict investment regime and applying the prudent person rule in both OECD countries and emerging market economies has been demonstrated, and the OECD Guidelines on Pension Fund Asset Management outlined. In this section a simple empirical study (Davis 2002) was carried out to show the quantitative beneficial impacts on pension fund returns if a more liberalised pension fund regulation were available in China. The analysis was conducted for both Pillars 1B and 2, in order to investigate whether such impacts are applicable to both pillars.

5.1 Beneficial impact of pension fund liberalisation for Pillar 1B in China

Table 2 gives asset returns and standard deviations relating to four hypothetical pension portfolios of Pillar 1B assets in China. Hypothetical portfolios are used in that, to the best knowledge of the authors, actual pension asset compositions in China are not available. In our empirical analysis, the basic portfolio consists of two asset classes, i.e. bonds and bank deposits, in light of the current legislations on Pillar 1B restricting investments to these asset classes. Meanwhile, it is assumed that the pension assets were equally allocated to the two asset classes, i.e. 50% in government bonds and 50% in bank deposits. Given this specification, asset returns in real terms were in the range between -1.5% in 2005 and 5.0% in 1997. On average the real return of the basic portfolio was 1.7% between 1993-2006, and 2.1% between 1993-2004. Data relating to the period from 1993 to 2004 were also calculated, in view of the concern that returns on domestic shares in 2005 and 2006 introduced potential abnormalities, and were therefore excluded. The corresponding standard deviations were 1.8% and 1.7%, respectively. In addition, the Sharpe ratio was also calculated, which is used to measure the reward to risk, i.e. to what extent extra returns are achieved in order to compensate for

additional risk. Note that when calculating Sharpe ratios, the standard formula is (return on portfolio – return on risk free asset) / portfolio risk. In our analysis given that all returns are in real terms, it is assumed that return on risk free assets (in real terms) is zero, therefore the above formula is reduced to be return on portfolio / portfolio risk. As regards the basic portfolio the Sharpe ratio was 0.94 (Panel 1) and 1.20 (Panel 2), respectively.

In addition to the basic portfolio, four variant portfolios were analysed in order to investigate the quantitative effects of shifting from a QAR approach to a more liberalised regulatory regime, particularly in terms of investment overseas. Variant 1 relates to the “naive” investment strategy, where domestic shares, government bonds and bank deposits consist of one third of the total assets each. The “naive” investment strategy is selected as research shows that this strategy produces as high a return as active investment strategies (Bateman and Thorp 2007). Results in Table 2 show that returns of the hypothetical Variant 1 portfolio vary markedly over the observation period. For example, in 1994 the return in real terms was -10.4%, while in 2006 it was 51.3%. During the whole period the mean return was 8.3%, standard deviation was 16.4%, giving a Sharpe ratio of 0.50. If the data for 2005 and 2006 were excluded the mean return was 4.0%, standard deviation 11.1%, while the Sharpe ratio was 0.36. As shown, the mean return of Variant 1 (a more liberalised hypothetical domestic portfolio) was higher than that of the basic portfolio. It is, however, also noted that standard deviation (i.e. corresponding risk) increased from 1.8% to 16.4%, thus ultimately leading to a lower Sharpe ratio.

Besides the above-mentioned more diversified domestic portfolio, three hypothetical portfolios with international investments were also analysed. We considered three scenarios, i.e. Variant-2: 70% in domestic assets (of which it was assumed that 50% in domestic shares and 50% in domestic government bonds), and 30% in foreign assets (of which it was again assumed that 50% in foreign shares and 50% in foreign government bonds), Variant-3: 50% in domestic assets and 50% in foreign assets, and Variant-4: 30% in domestic assets and 70% in foreign assets. Again all returns are in real terms, i.e. inflation was considered, while returns on foreign assets also allowed for foreign exchange risk. Empirical results relating to the three portfolios are given in Table 2. As regards Panel 1, the mean return was 3.7%, 5.0%, and 6.3%, respectively, while standard deviation was 4.8%, 7.4% and 10.1%. The corresponding Sharpe ratio was in the range between 0.62 and 0.76, smaller than that of the basic portfolio, but greater than that of Variant-1. The same indicators were also calculated by excluding observations of 2005 and 2006. Results are similar as those of Panel 1.

By looking at results relating to the basic portfolio and the four variants, the beneficial impact of liberalising asset restrictions of Pillar 1B can be indicated. Variant-1 consistently shows superior returns, but also much higher risks, thus lowest Sharpe ratios. In comparison the performance of the three variant portfolios with foreign investments achieved a balance between return and risk, i.e. a good overall return with relatively low risk. This is also demonstrated by the value of Sharpe ratios. Benefits of foreign investments were further proved if data of 2005 and 2006 were excluded. As shown in Panel 2, variants 2, 3 and 4 often outperformed variant-1, and also the basic portfolio by a significant margin. It is noted that the basic portfolio always achieved the highest Sharpe ratio. However, the return was too low to be sustainable in the long run, i.e. the investment strategy is too conservative.

Table 2 Quantitative effects of moving towards more liberalised portfolios for Pillar 1B assets in China

	Domestic	Investment Liberalisation			
	0-50-50	33-33-33	70-30	50-50	30-70
	Basic portfolio	Variant-1	Variant-2	Variant-3	Variant-4
1993	3.4	2.2	17.4	26.7	36.1
1994	3.4	-10.4	3.8	4.1	4.4
1995	4.5	1.6	5.3	5.9	6.4
1996	1.6	10.6	3.2	4.2	5.2
1997	5	-14.2	6.4	7.4	8.3
1998	2.7	7.6	5	6.4	7.9
1999	1.5	5.9	-0.1	-1.1	-2.2
2000	0.6	7.3	-3.1	-5.5	-7.9
2001	0.4	-0.5	-1.2	-2.2	-3.3
2002	0.5	30.6	5.8	9.3	12.8
2003	0.9	4.1	3.9	5.9	7.9
2004	0.1	2.9	0.9	1.4	1.9
2005	-1.5	16.6	1.6	3.7	5.8
2006	1.2	51.3	2.5	3.4	4.2
1993-2006					
Mean	1.7	8.3	3.7	5	6.3
Standard deviation	1.8	16.4	4.8	7.4	10.1
Sharpe ratio	0.94	0.5	0.76	0.67	0.62
1993-2004					
Mean	2.1	4	3.9	5.2	6.5
Standard deviation	1.7	11.1	5.2	8.1	11
Sharpe ratio	1.2	0.36	0.76	0.65	0.59

Source: Figures were calculated by the authors. All data are from Datastream, except for China government bond yields which were obtained from the Chinabond website.

1. Domestic: the three digits refer to percentage of assets invested in domestic shares, government bonds and bank deposits, respectively;
2. Investment liberalisation: the three digits refer to the same as the above, while the two digits refer to percentage of assets invested in domestic and foreign portfolios, respectively; the domestic portfolio refers to the basic portfolio (i.e. 0-50-50), while the foreign portfolio refers to the one consisting of 50% in foreign government bonds and 50% in foreign shares.
3. All returns are in real terms. Foreign exchange risks are allowed for returns on foreign investments.
4. Panel 2 is calculated in order to see how the results change by excluding the extreme values of returns on domestic shares observed for 2005 and 2006.
5. Sharpe ratio is calculated by dividing mean by standard deviation, and it is assumed that returns on risk-free assets are zero in real terms

5.2 Beneficial effects of pension fund liberalisation for EA plans in China

In this section we will look at the quantitative effects if the EA asset investment were subject to a more liberalised regulatory regime. Empirical results are given in Table 3. The basic portfolio is constructed in a way which mimics the practical asset allocation of the EA plans. As noted earlier, EA plans in China were mainly invested in government bonds and bank deposits prior to 2004. Afterwards investments have been subject to regulation of the No 23 document released in 2004, which is, however, still a QAR approach. Taking into account these developments, it is assumed that the basic portfolio in 2004 and afterwards invested 30% in domestic shares, 50% in domestic government bonds and 20% in bank deposits. Given this specification the mean return over 1993-2006 was 6.3%, standard deviation 12.1%, and Sharpe ratio 0.52. The three figures were 2.3%, 1.6% and 1.43, respectively, taking the observation period 1993-2004. Meanwhile, it is noted that in 2005 and 2006 the return was quite high, i.e. 14.9% and 46.4%, respectively, which was mainly due to 30% of asset allocation to shares.

Like the empirical work of Pillar 1B four variant portfolios were considered in order to see the extent to which results are changed. Variant-1 refers to a domestic “naive” portfolio, of which 33% invested in shares, 33% in government bonds, and 33% in bank deposits. During the whole observation period the return was lowest at -14.2% (in 1998) and highest at 51.3% (in 2006); the average return was 8.3%, standard deviation 16.4%, and the resultant Sharpe ratio 0.50. The results under Panel 2 show the same picture, i.e. an increased mean return and standard deviation and lower Sharpe ratio when compared to the basic portfolio. In addition, we calculated the same statistics for another three portfolios with assets invested abroad. For example, for variant-2, i.e. 70% invested domestically and 30% invested abroad, the lowest portfolio return was observed at the level of -3.1% in 2000, and the highest return was 34.2% in 2006. On average the mean return was 6.9%, standard deviation 9.5%, and Sharpe ratio 0.73. For the other two variants the mean return was gradually increased with more assets invested abroad. Again given the concern that high values of return on domestic shares in 2005 and 2006 might distort our results, investment statistics were re-computed by excluding data relating to the two years. Results indicated as Panel 2, are shown in Table 3. All four variant portfolios outperformed the basic portfolio in terms of portfolio return, while the opposite was observed in terms of portfolio risk. As regards the four variants, the last three portfolios outperformed the basic portfolio in terms of the all three statistics, i.e. mean return, standard deviation and Sharpe ratio.

Above we present empirical results relating to the basic portfolio of the EA pension plans, as well as the four variant portfolios. It is shown that return on the basic portfolio was lower than that of the other portfolios, thus indicating the potential benefits of the prudent person rule approach. For example, as regards Panel 1 the mean return was 6.3% for the basic portfolio, while it was in the range of 6.9% and 8.3% for the other portfolios. Such beneficial impact of liberalising pension investment for the EA plans were more obvious if the observation period relates to 1993-2004, since return on the basic portfolio was reduced to be 2.3% (from 6.3% in Panel 1), which was mainly due to the fact of no assets invested in shares in Panel 2. If risk is taken into account, performance of the three foreign portfolios was more satisfactory, and that of the “naive” portfolio was less promising in comparison to the basic portfolio, as indicated by the value of Sharpe ratios.

Table 3 Quantitative effects of moving towards more liberalised portfolios for EA assets in China

	Domestic	Investment liberalisation			
		0-50-50/30-50-20*	33-33-33	70-30	50-50
	Basic portfolio		Variant-1	Variant-2	Variant-3
1993	3.4	2.2	17.4	26.7	36.1
1994	3.4	-10.4	3.8	4.1	4.4
1995	4.5	1.6	5.3	5.9	6.4
1996	1.6	10.6	3.2	4.2	5.2
1997	5.0	-14.2	6.4	7.4	8.3
1998	2.7	7.6	5.0	6.4	7.9
1999	1.5	5.9	-0.1	-1.1	-2.2
2000	0.6	7.3	-3.1	-5.5	-7.9
2001	0.4	-0.5	-1.2	-2.2	-3.3
2002	0.5	30.6	5.8	9.3	12.8
2003	0.9	4.1	3.9	5.9	7.9
2004	2.9	2.9	2.9	2.8	2.8
2005	14.9	16.6	13.1	11.9	10.7
2006	46.4	51.3	34.2	26.0	17.8
1993-2006					
Mean	6.3	8.3	6.9	7.3	7.6
Standard deviation	12.1	16.4	9.5	9.3	10.6
Sharpe ratio	0.52	0.50	0.73	0.78	0.72
1993-2004					
Mean	2.3	4.0	4.1	5.3	6.5
Standard deviation	1.6	11.1	5.1	8.0	11.0
Sharpe ratio	1.43	0.36	0.80	0.66	0.60

Key: see Table 2; *, 0-50-50 refers to portfolio allocation prior to 2004, while 30-50-20 refers to that afterwards.

5.3 In summary

In this section a simple empirical study was conducted to demonstrate the quantitative effects of liberalising existing pension fund investment restrictions relating to both Pillar 1B and Pillar 2 towards a less restricted approach, e.g. prudent person rule. Based on results of the basic portfolio and four comparative pension portfolios, the beneficial impacts were observed. In other words, returns on the basic portfolio (which intends to mimic the actual pension portfolios in China) were consistently lower, and much lower in some cases, than those on the more diversified portfolios. This result was robust even if two different observation periods were used. When risk is taken into account, the standardised return or Sharpe ratio was highest for the basic portfolio, which, however, corresponds to a very low portfolio return, typically around 2% - a level we believe to be too low to be sustainable in the long run. In contrast, the Variant-1 portfolio always resulted in the lowest Sharpe ratio, which was mainly due to the associated higher risk, despite high returns. For the other three variant portfolios a good balance between return and risk was achieved. For example, for Pillar 1B portfolio return for the three portfolios was between 3% to 7%, while Sharpe ratio was around 0.6 and 0.8, depending on

proportion of assets invested abroad and observation period used. For the EA plans, the portfolio return was between 4% to 8%, while the corresponding Sharpe ratio ranged between 0.6 and 0.8.

Given the above-mentioned empirical evidence and experiences from both OECD and non-OECD countries discussed in the earlier sections, it is likely that the existing pension investment regulation in China has forced pension assets to be invested in an overly conservative manner, which has the implication of lowering portfolio returns for a given risk, therefore potentially leading to a lower benefit for retirees when they start drawing monies from their individual accounts. Therefore, for the sake of protecting and maximising the interests of plan members (which is becoming increasingly important given that both the mandatory, individual accounts and EA plans have been designed to be fully funded in China, and thus all risks are borne by individuals), and with consideration of the second-order benefits, (e.g. promoting development of funded pension markets), current pension investment could be gradually liberalised towards the international best practices, e.g. in line with the prudent person rule.

6. Conclusion

Pension fund assets in OECD countries have increased rapidly over the past decades (OECD 2007a), and it is evident that such trend will continue. Against this background how to invest such a large amount of assets has become an important issue, which also has policy implications. Broadly speaking pension funds in the globe have been subject to two approaches, i.e. quantitative asset restriction (QAR) and prudent person rule (PPR). The OECD Guidelines on Pension Fund Asset Management released in 2005 acknowledge the rationale of implementing quantitative portfolio limits (particularly if it is on a temporary manner), but recommend that quantitative limits should be used sparingly, and combine them with and move towards the PPR where possible.

International experiences show that in Anglo-Saxon countries, e.g. the United Kingdom and the United States, the PPR approach is more popular, while in the other OECD countries and many EMEs, the QAR approach has dominated. However, it is also equally observed that there is no “pure” PPR-implementing country. For example, even in the United Kingdom and the United States there are limits on self-investment. Meanwhile, pension fund regulation is an ongoing process, in that asset restriction has been gradually eased in both OECD and non-OECD countries. Typically high-risk assets, e.g. equity, foreign assets were not initially allowed, but relaxed later on.

In China funded pension funds exist in two forms, i.e. Pillar 1B (personal account) and Pillar 2 (EA account). The current pension fund investment legislation specifies that all assets in Pillar 1B are invested in government bonds and bank deposits, while those in Pillar 2 are also subject to the QAR approach, albeit to a lesser extent in comparison to Pillar 1B. In this paper we conducted an empirical study, quantitatively showing the beneficial impacts of allowing more diversified portfolios for both Pillar 1B and Pillar 2. Given international experiences and empirical results, it is believed that the current pension regulations in China are likely to hamper investment diversification and portfolio performance in the long term, which could potentially hurt the interests of plan members, a particularly important issue given the long investment horizon of pension funds and the transfer of risk to individuals given the design of the pension system.

In light of experiences from both OECD and non-OECD countries as reviewed in this paper, as well as the empirical results, current Chinese pension fund investment regulations could consider the following reform options in order to strengthen the system:

For Mandatory Individual Accounts:

- Removing lower limits on government bonds and bank deposits
- Allowing investment in more asset classes (e.g. shares and real estate)
- Gradually allowing for pension assets to be invested abroad

For Enterprise Annuities:

- Removing lower limits on certain asset classes, e.g. government bonds and bank deposits
- Combining the quantitative limits with a move to a prudent person rule where possible
- Gradually allowing for pension assets to be invested abroad

Moving from the QAR to the PPR approach, however, gives pension regulators a more difficult task in monitoring investment risk. Therefore, it is advisable that such regulatory relaxation should be matched by a corresponding strengthening of regulatory capability. In this regard, a well-functioning regulatory framework, including the development of appropriate risk monitoring measures is needed.

Meanwhile, some financial preconditions are also needed in order to reap the beneficial impact of pension reform towards funding in general and in particular to justify a more liberalised investment regulatory regime. In China it has been argued (Hu 2006b) that the basic conditions necessary for pension reform for funded pillars, e.g. a relatively sound banking sector, rudimentary stock market and basic accounting standards are available; however, the current capital markets are still associated with many problems which might justify the current quantitative restriction approach implemented by the Chinese authorities, e.g. high volatility of the stock market, speculative mood among both individual and institutional investors, insufficient investor protection, etc. However, with the expected improvement in market conditions, greater maturity of the capital markets and more experienced financial regulators, in the long run the Chinese legislations on pension fund investment may be gradually relaxed. This will allow the system to reap the rewards indicated by our empirical results and would also be consistent with the practices observed in OECD and non-OECD countries.

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THE IMPACT OF TAX INCENTIVES ON RETIREMENT SAVINGS: A LITERATURE REVIEW

Prepared by Pablo Antolin and Erika Lopez Ponton¹

Executive Summary

Tax incentives are largely used to promote retirement savings in funded pension plans as a response to public finance pressures caused by ageing populations and shorter working lives. As those tax incentives reduce government funds available for other policies, it is crucial to evaluate whether they actually increase savings earmarked for retirement.

Tax incentives embedded in funded pension plans do indeed increase retirement savings. However, this increase in retirement saving could be the result of people actually increasing their overall savings (*i.e.* new saving) or of people shifting savings from traditional saving vehicles (*i.e.* reallocation) and leaving their total savings unchanged. This distinction is relevant because increases in retirement savings resulting from new savings will lead to an increase in total national saving while increases due to reallocation could lead to a fall in national saving and make the tax incentive look costly. Countries whose aim is to increase national saving would like to be sure that increases in retirement savings are mainly due to new savings. Yet, increases due to reallocation may also have a policy purpose if the aim is to lock-in savings into long-term earmarked retirement saving plans.

The empirical evidence is inconclusive. Some studies conclude tax incentives may lead to an increase in retirement savings through the adjustment of saving portfolios. Individuals may tend to reallocate their existing savings to tax-relief retirement accounts from other savings vehicles in order to reduce their tax liabilities, rendering those tax incentives quite costly. Other studies find that somewhere around ¼ to half of increases in retirement savings are due to new savings, increasing national savings.

The reasons for such discrepancies stem from the lack of appropriate data to conduct the analysis. The empirical evaluation of tax incentives as a policy instrument to increase or to generate new retirement savings is constrained by: methodological difficulties; measurement difficulties related to the indicators constructed to measure the impact of those incentives and the complexity to enclose behavioural and sociological variables.

The success of tax incentives in promoting new savings lies on combining them with other instruments to encourage the participation of mid-to-low income individuals, instruments such as compulsion, soft-compulsion (automatic enrolment with an opt-out clause), matching contributions or changing the incentive structure.

Regarding this last issue, in most countries the tax relief on contributions takes the form of a deduction, which means that the value of the incentive diminishes when income levels fall and may be of little value for workers with low taxable income. In addition, given that in many countries the basic

¹ This is on-going work and as such the paper is still a rough draft.

state pension and other transfers are often incomes-tested, the marginal effective tax rate on benefit withdrawals may be very high for individuals whose pension income is expected to hover around the incomes-testing threshold. For instance, calculations based on the US tax and social security systems suggest that depending on the assumed rate of return, contributing to 401(k) plans may actually raise lifetime tax payments for families earning \$50,000 or less (Gokhale and Kotlikoff, 2001). In contrast, one factor contributing to the generosity of the tax incentive for high income individual is that tax-deferred schemes are generally designed in a way that creates the scope for significant tax smoothing, especially in countries with very progressive tax schedules.

The figures below show that tax credits provide incentives that increase with income, while tax subsidies provide incentives that are inversely related to income. Matching contributions on the other hand provides incentives that are more evenly distributed across different income groups.

Figure 1. Tax incentives – Tax deduction

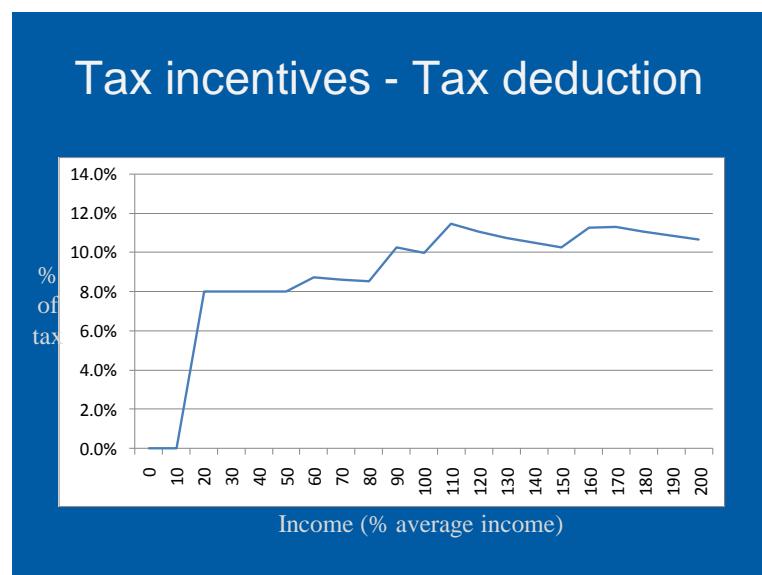


Figure 2. Tax incentives – Tax credit

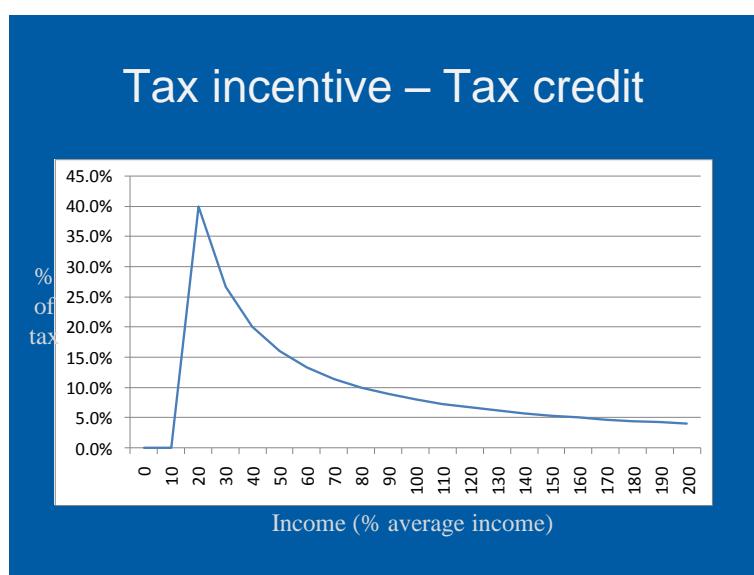
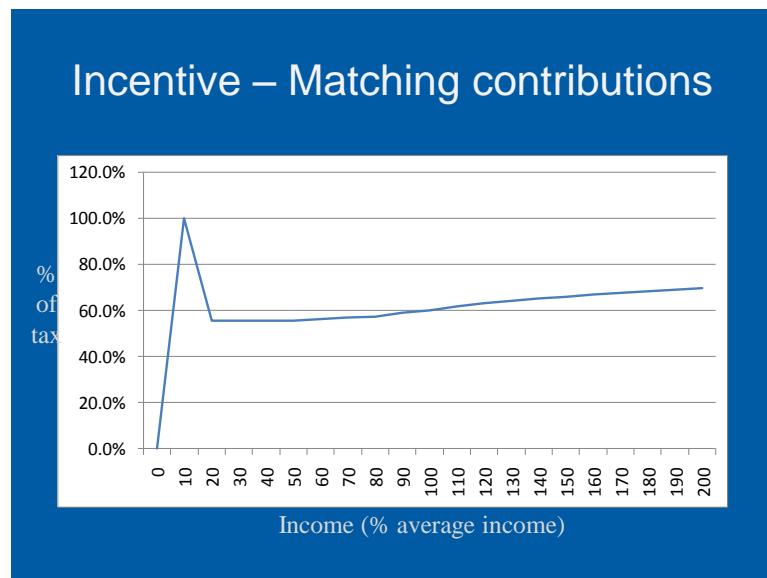


Figure 3. Tax incentives – Matching contribution



1. Introduction

Tax incentives are largely used to promote retirement savings in funded pension plans as a response to public finance pressures caused by ageing populations and shorter working lives. As those tax incentives reduce government funds available for other policies, it is crucial to evaluate whether they actually increase savings earmarked for retirement.

Tax incentives embedded in funded pension plans do indeed increase retirement savings. However, this increase in retirement saving could be the result of people actually increasing their overall savings (*i.e.* new saving) or of people shifting savings from traditional saving vehicles (*i.e.* reallocation) and leaving their total savings unchanged. This distinction is relevant because increases in retirement savings resulting from new savings will lead to an increase in total national saving while increases due to reallocation could lead to a fall in national saving and make the tax incentive look costly.

The purpose of this study is to review the literature on this subject in order to assess whether tax incentives embedded in pension plans will increase retirement savings either through new savings or by reallocation. Countries whose aim is to increase national saving would like to be sure that increases in retirement savings are mainly due to new savings. Yet, increases due to reallocation may also have a policy purpose if the aim is to lock-in savings into long-term earmarked retirement saving plans.

The report is organised as follows. Next section addresses whether tax incentives increase retirement savings through reallocation or new savings. Although, the empirical evidence is not conclusive, the increase in retirement savings as a result of tax incentive could be partly due to new savings. This section also explains the reasons behind the failure of empirical studies to come out with a final conclusion. As some empirical studies have found a stronger impact of tax incentives on new savings on low- and middle-income earners (e.g. Poterba, 1996a,b; Engen and Gale; 2000; Benjamin, 2003; Disney *et al.*, 2007; Chung *et al.*, 2006), section 3 looks into this argument. Section 4 then focuses on design features of pension plans to promote new savings. The last section concludes with a summary of the main findings in the literature and some policy considerations.

2. The impact of tax incentives: reallocation or new savings?

This section reviews the empirical evidence on the impact of tax incentives on retirement savings, discussing first the evidence suggesting that tax incentives increase retirement saving mainly by inducing a reallocation of savings, and, secondly, the evidence suggesting that it is the result of new savings. The section ends examining the empirical features of those studies that help explain the disparity of results.

Theoretically, it is ambiguous whether tax incentives will increase savings. On the one hand, tax incentives might change the total amount that individuals will save (income effect). On the other, given the incentive, individuals will change the composition of their saving portfolio (substitution effect). Which effect dominates is an empirical question.

Unfortunately, empirical evidence is quite disparate and far from providing a definitive answer to this conundrum. Although, a large set of the available empirical evidence supports that in many OECD countries individuals largely reallocate savings from other vehicles as a response of tax incentives, there is also relevant evidence pointing towards an increase in new savings as a result of tax incentives. A tentative conclusion is to argue that tax incentives increase retirement saving mostly by reallocation, but a significant share of those increases are from new savings, increasing therefore total national saving. Although, the increase is much lower than supporter of tax incentives would have expected.

Evidence supporting savings reallocation

This sub-section presents empirical evidence for the United Kingdom and the United States, suggesting that individuals tend to reallocate savings when tax incentives are introduced in pension plans.

The empirical evidence reviewed from the United Kingdom assessing the impact of the different tax incentives retirement saving plans, indicates that individuals respond to these incentives by changing the composition of their saving portfolio. Moreover, these empirical evidence suggest that none of the pension reforms adopted since 1991 have succeeded in increasing savings.

Attanasio *et al.* (2004) present empirical evidence showing that contributions to Tax Exempt Special Savings Accounts (TESSA) and to Individual Savings Accounts (ISA) do not represent new savings in the United Kingdom². In principle, ISA were introduced to have a strong impact on savings since individuals have now the option to hold liquid assets avoiding stock market risk and without facing liquidity constraints.

To determine if new savings were generated by tax incentives embedded in ISA plans, the authors compare the percentage of families holding tax-free financial assets and any financial assets other than a current account, for continuing and new contributors before and after the introduction of ISA. Under this approach, new savings are created if the number of financial assets remains constant and the number of ISA plans increase, as a response to the incentive.

Using statistics from the Family Resources Survey (FRS) across education and age groups between 1998/1999 and 2002/2003, the authors found that only relatively small fractions of these funds can be considered to be new savings, even when such accounts do not include minimum holding periods. Indeed, data on savings and wealth indicate that ISA contributions come from other saving

² ISA replaced TESSA since 1999.

vehicles since the proportion of families holding tax-free financial assets increased by 12% against a drop of 2.1% of the ownership of financial assets other than a current account.

The authors conclude that the best interpretation of this evidence is that tax incentives are expensive ways of encouraging savings. To the extent that shifting savings from other vehicles leads to a reduction in the tax liabilities without any real change in economic behaviour, there is some deadweight loss associated with such policies. Since the wealthiest members of society have the greatest reshuffling possibilities, the liquidity restriction would be likely to discourage savers with low wealth from participating.

Analysing coverage of the United Kingdom pension plans, Disney *et al.* (2007) argue that tax-relief plans through Personal Pensions, such as ISA, were a weak incentive to promote retirement savings.

The first explanation proposed is the wealth effect created by the opting-out wave observed after the introduction of Personal Pensions. In fact, when individuals opt-out from the public programme, they received a high level of the contracted-out rebate and invested their contributions in a pension fund accruing high returns. In the late 1990s when the rebate was cut, a steady rise in contributions was observed but the authors cannot determine if this rise was due to new savings or to saving substitution.

In 2001, the Stakeholder Pensions plan was introduced to fill the vacuum of Personal Pensions program. However, evidence suggests that the Stakeholder Pensions failed as well to increase the overall proportion of individuals saving through pension plans for retirement. In the two years preceding Stakeholder Pensions, on average, 61% of the workforce belonged to a pension plan of some type. In the two years after the introduction, 60% belonged to a pension plan. Among middle earners, coverage by funded pension plans fell by 2.4 % between these periods.

The authors highlight that general consensus of experts in the United Kingdom is that Stakeholder Pensions had little or no effect on retirement saving or on pension plan coverage. But, this conclusion is hasty. First, the authors do not quote their data sources and the methodology to estimate neither the drop in coverage nor the increase in contributions. Second, from the empirical evidence presented in this paper, it is not possible to conclude if the drop in the number of members of a pension plan of some type was accompanied with a drop in contributions and thus in savings. Certainly, the evolution of the number of participants to a pension plan is a good proxy of the efficiency of tax incentives retirement saving plans but it will be more appropriate to compare contributions to Stakeholders Pensions with contributions to other saving vehicles. Stakeholder Pensions might not have a negative impact on savings if individuals maintain, at least, their contributions in other pensions plans.

On the other hand, the authors found that as a consequence of the tax regulation reform in 2001, private pensions participation increased by some 3 percentage points among low earners. In currency terms, this increase represents £0.8 per week for singles and £4.3 per week for couples. According to the authors this increase is due to the fact that households, especially couples, can therefore engage in tax planning so as to minimise their tax liability. Indeed, the reform allows all individuals, irrespective of earnings or age, to make gross contributions of up to £3.600 a year to their funded pension.

Unfortunately, the authors do not conclude where the new contributions come from. From the reading of the paper, new contributions come from other savings vehicles. In fact, households are shifting savings from other vehicles to the Stakeholder Pensions to benefit from the tax relief, now that the contribution limits are higher than before the tax reform.

Similar results can be drawn from Chung *et al.* (2006)'s work. They examine trends and differences-of-differences of households with funded pensions before and after the introduction of Stakeholder Pensions in 2001. Using data from the Family Resources Survey (FRS) and controlling for high-earners, the authors do not find evidence that the proportion of households that saved for retirement through funded pensions increased after the reform. On the contrary, they find that after the introduction of Stakeholder Pensions, households shift their savings to this new program from Personal Pensions plans. Indeed, the coverage share of the later decreased from 10.3% in 2000 to 8.4% in 2002.

On the other hand, the evidence confirms that Stakeholder Pensions did not increase coverage among the middle-earning group, the target group of this policy, but take-up of funded pensions increased 3.6 percentage points among low earners. Further investigation in the paper shows that the strongest effect is a 5.2 percentage point increase among low earners married to medium or high earners.

These are not trivial changes in the efficiency and coverage of Stakeholder Pension. The authors explain these features by the reform in contributions limit. Individuals and couples increase their contribution to minimise their tax liability³. Actually, high and medium income spouses and zero- or low-income wifes contribute jointly to a private pension. However, this increase in contributions among low earners is due to the reallocation of savings from other vehicles since aggregate coverage decreased after 2001 and, as it was said before, contributions to Stakeholders Pensions increased because a drop of Personal Pensions.

From an econometrical perspective, the evidence presented in this paper follows a coherent empirical strategy that in the first stage examines trends and then analyse differences-of-differences between individuals according to income levels and age before and after the reform.

In sum, papers analysing the United Kingdom experience complement each other. Attanasio *et al.* (2004) and Disney *et al.* (2007) found very similar results using the same data source but analysing overlapping time periods. Their evidence indicates a drop in the ownership of other financial assets after the introduction of ISA in 1999 and Stakeholders Pensions in 2001. Yet, the authors conclude that the increase in tax incentives pensions plans is due to savings reallocation.

Disney *et al.* (2007) and Chung *et al.* (2006)'s empirical evidence is complementary as well. They both use "coverage trends" as an indicator of the evolution of contributions in tax incentives pensions plans and confirm that the opportunistic behaviour of individuals and couples in face of a tax-relief motivates them to shift savings to Stakeholders Pensions rather than generating new savings, as the government expected when introducing such tax incentive in retirement saving plans.

Interestingly, their work highlights the interaction between pension and fiscal policies. These papers argue that the introduction, in 2001, of Stakeholder Pensions plans has an impact in the reallocation of savings thanks to the tax regulation reform undertook the same year. Both papers affirm that without the increase in contribution ceilings and, thus, the reduction of tax liability, Stakeholder Pensions plans would not have been successful in attracting retirement savings.

There has been considerable debate in the United States over the effectiveness of tax incentives aimed at increasing saving for retirement⁴. Some empirical evidence argues that IRA and 401(k) create

³ This explanation is close to the one advanced by Disney *et al.* (2007) and exposed above in this section.

⁴ This review complements the analysis carried out by Antolin *et al.* (2004; "Long-term Budgetary Implications of Tax-Favoured Retirement Plans", Annex 2).

mainly a substitution effect rather than increasing new savings. However, several difficulties question the validity of their results.

Gale and Scholz (1994) find that a negligible fraction of contributions to IRA comes from new saving: 0.04 cents per dollar contributed. In their model, the authors allow the parameters of the saving relationship to vary according to whether the individual is an IRA contributor or not, assuming different marginal propensities to save in IRA and in other savings vehicles. Then, they identify the impact of IRA on saving by looking at the effect of a change in the IRA contribution limit, distinguishing between contributors that have or have not reached the established ceilings.

However, their approach does not eliminate completely the possibility of inferring incorrectly that IRA saving displaces other forms of saving (Bernheim, 1999) and their results were found to be highly sensitive to small changes in the sample (i.e. revenue threshold above which wealthy households were excluded from the analysis) (Poterba *et al.*, 1996a,b).

Engen *et al.* (1994, 1996) use the Survey of Income Program Participation (SIPP) to compare the financial assets, including housing equity, of households who are eligible to 401(k) with the assets of those who are not eligible.

The authors assume that eligibility to 401(k) is not exogenous since employees with tastes for savings probably would tend to gravitate towards jobs that provide good pension coverage. Furthermore, employers may establish 401(k) programmes to attract employees with such tastes or to meet the preferences of existing employees.

The authors conclude that only a negligible amount of 401(k) contributions represent new saving (2%) if the reduction in tax payments due to increased deductions had been completely saved. If some of the tax deduction had been spent, the effect on new saving would have been smaller or negative. The authors argue that increases in contributions to 401(k) could be financed with home equity, leaving therefore total wealth unchanged.

Nonetheless, these results may be influenced by outside factors like equal percentage declines in housing wealth among eligible and ineligible groups during the period examined. The wealth indicator may reflect this changes and therefore the impact of 401(k) on savings may be misinterpreted.

Moreover, using cross-sections to emulate longitudinal data may create a dilution effect. For example, if new eligible workers are less motivated savers than those already eligible, the composition of the eligible group would become skewed towards less motivated savers creating a spurious downward shift in the estimated cross-sectional age-wealth profile of eligible workers, which would partly offset any shift due to the behavioural effect of 401(k).

More recent studies conducted by Attanasio *et al.* (2004) and Attanasio and DeLeire (2002) bring evidence based in consumption trends, to support the reallocation of savings as a consequence of tax incentives retirement saving plans.

The authors regress data from the Consumer Expenditure Survey (CES) to estimate consumption changes before and after 1982 when IRA were available for households. They affirm that IRA's contributions neither come from consumption nor from new savings but from other saving vehicles, especially for new household contributors. The regression coefficients show that contributors to IRA do not increase saving rates and do not reduce consumption. However, the coefficients are not statistically significant then results cannot be asserted as a fact.

Moreover, a deeper look in their results gives another perspective to this conclusion. In fact, Table 4. (2004 p.14) shows that 44% of IRA contributions are new savings and 56% are reshuffled assets. Certainly, in monetary terms these percentages do not represent high amounts: new savings represent 1385 dollars and reshuffled assets represent 1785 dollars. Although to judge the magnitude of these numbers they should be compared with wages levels and with optimal saving rates. Two questions appear: what is the saving rate goal? Does the increase of 44% in savings compensate the budgetary cost of the tax incentives measures adopted by the government?

Accordingly, the empirical evidence asserting that tax incentives retirement savings plans increase savings reallocation is inconclusive either for the American and British experiences. Until now, papers defending a shift in saving to tax-favoured retirement plans from other financial asset or vehicles have been criticised either by their methodology or by their strong assumptions.

Evidence supporting an increase in new savings

In parallel to the literature identifying a reallocation of savings assets, there are also strong papers supporting an increase in new savings as a consequence of tax incentives embedded in retirement programs. Paradoxically, some of these papers bring contradictory results to the ones exposed above, even when authors base their studies in the same dataset and cover the same period of time.

Unfortunately, empirical evidence defending an increase in new savings, as the literature supporting savings reallocation, has conceptual and methodological weaknesses. Suggested results depend on theoretical assumptions, which prevents them from bringing a final conclusion to whether the increase in savings comes from new savings or from adjustment of saving portfolio.

The often-quoted papers of Poterba *et al.* (1995, 1996a and 1996b) found a net positive impact of tax incentives saving programs on low- or middle-income contributions in the United States. The authors compare the financial assets of households who are eligible to 401(k) with the assets of those who are not eligible. They find little substitution between 401(k) saving and other forms of financial asset saving, concluding that virtually all contributions to 401(k) schemes come from new saving.

They use two approaches to deal with the problem of saver heterogeneity. First, they assume that eligibility to 401(k) is exogenous to the propensity to save. Second, using the 1987 and 1991 waves of the Survey of Income Program Participation (SIPP), they check that eligibility is significantly correlated with median financial wealth.

As an alternative to the heterogeneity assumption, the authors compare the three cross-sections of the SIPP, assuming that eligible workers in the three groups have similar saving preferences. They find an upward shift in the relative financial assets of those who are eligible to 401(k), concluding that all contributions are new savings.

However, these findings may be biased by outside factors like the stock market boom of the 1980s or proportionate shifts in the allocation of wealth from real assets to financial assets. Indeed, these factors could have caused changes in financial wealth and/or total wealth that ended up being confused with the impact of 401(k). In addition, this paper, as the one conducted by Engen *et al.* (1995 and 1996), use cross-sections to emulate longitudinal data, which may create a problem of dilution.

According to Hubbard and Skinner (1996) the raise of new savings may justify IRA cost. In fact, the authors develop a cost-benefit model that focuses on the incremental gain in long-term capital accumulation per dollar of foregone government revenue from offering the saving incentive program. That is the ratio of private capital accumulation per contribution to net tax revenue per contribution.

In his model, the authors assume a marginal tax rate of 28%, a retirement tax rate of 24%, an average tax rate on interest and dividend income of 26%, no exclusion for capital gains and a holding period of 22 years. Assuming that 26 cents per dollar of revenue loss are new savings, then the estimated incremental impact is \$2.09. The impact will be much lower (0.63 cents) when new savings represent 10 cents. Consequently, saving incentives generate substantial net capital accumulation over time per dollar of foregone tax revenue through new savings.

The paper of Benjamin (2003) proposes interesting results about the coexistence of two tax incentives pensions plans such as IRA and 401(k). The author use data from the Survey of Income Program Participation (SIPP) and find that 401(k) are more effective in raising new savings for renters and households without an IRA than homeowners and IRA holders. In the first case, new savings represent 100% and around 25% in the second case. Despite the fact that these results are statistically significant, they correspond to one point in time: 1991; which limits their generalisation.

Engelhardt (2001) uses firm-reported pension information, Social Security, and household wealth data to examine the extent to which 401(k) rises total household saving. He finds that the average dollar contributed generates between 70 cents and one dollar of new saving for the lower-to-middle income household. Nevertheless, results are quite different when the author adjusts the model with self-reported data. Yet, the overall impact of saving is negative (-8 cents).

Ayuso *et al.* (2007) argue that tax-incentives had a small impact on new savings in Spain: 25 cents per 1 euro contributed. This is particularly truth for households between 56 and 65 years old with high-income, the group that most contributed to the plan.

The authors estimate the impact of tax incentives to retirement savings, introduced in 1988, on the contributions to pension funds and savings. For this purpose, they use panel data from the Household Expenditure Survey (ECPF) for the period 1985-1991 and data from the Income Tax Returns filed by individuals for the period 1982-1998. Knowing that saving decisions are correlated to income tax and age, they divide the sample by age and quartile of pre-tax labour earnings.

The empirical strategy of this paper is coherent in terms of data, time coverage and sampling. Moreover, the population was divided by income and age, what includes lifecycle considerations. The authors define the treatment and control variables and proceed step by step in order to: i) verify that income is a strong predictor of the probability of contributing and of the amount contributed; ii) to examine consumption growth by cohorts; iii) and to estimate contributions and consumption growth.

One originality of this analysis relies in that it compares groups by the differential incentive to contribute faced by households with different income levels rather than by eligibility levels (e.g. Engen *et al.*, 1994, 1996) or by individuals who contribute and those who do not (e.g. Gale and Scholz, 1994). Indeed, the interaction between the income marginal tax rate and the age of the individual at the time of the reform allows the authors to control for variables, like income risk, borrowing constraints and preference for liquidity, that can affect contributions.

However, two remarks could be addressed. First, the authors qualified the increase in new savings as “small”, whereas it represents 25% of each new dollar saved. The reasons why this proportion should be considered as small are not specified in the paper. One could suppose that the authors consider that this increase will not be enough to compensate the public costs of tax incentives.

Second, the assumption that tax incentives are exogenous to individuals change in incentives to save could be criticized. That is that the introduction of tax incentives would not have an impact on individual preferences to save. Thus, policy reform is a point on time from which the authors look

back and forward to consumption behaviour. Naturally, observing consumption patterns before and after the reform is the best way to assess how this variable changes but it is possible, and theoretically expected, that tax incentives alter individuals saving and consumption decisions. The fact that the interpretation of results relied in tax income rates and in households response to such incentives makes it hard to understand how the authors assume that tax incentives are exogenous. This assumption can be explained by the complexity of conducting a general equilibrium model from the data the authors have.

Generation of new savings have also been identified in Germany. Fehr and Habermann (2006, 2007) assess the consequences of the recent introduction of tax incentives retirement accounts in Germany, called Riester pensions.

In principle, the program design is very similar to individual retirement accounts (IRA) in the United States. However, three specific features distinguish the German reform design from the implementation of individual retirement accounts in other countries: i) preferential tax treatment of old-age savings is partly financed by an increased taxation of other savings; ii) the program mandates annuitisation of the accounts at the time of retirement; iii) the program provides a direct subsidy, which depends on the actual family status and is very generous especially for low-income households with children.

The authors conduct four simulations with a general equilibrium overlapping generations model with idiosyncratic lifespan and labour income uncertainty. First, they increase the taxation of capital income. Then, they introduce traditional Riester without mandatory annuitisation. Next, Riester plans are annuitised after retirement. Finally, they add the special provisions for low-income households.

Concerning the first simulation, the elimination of capital income allowances reduces savings by roughly 4.4%. Introducing Riester in the second simulation caused an increase in younger generations savings in tax incentives accounts, so that aggregate savings rose throughout the transition (7.7%). Then, assuming mandatory annuitisation of benefits after retirement lead to a lower increase of savings (3.9%). Lastly, direct savings subsidies increase costs; therefore the consumption tax has to rise while savings increase by 3.9%.

Simulating different scenarios is innovative and gives room for policy comparisons. For instance, the evidence shows that introducing traditional and annuitised Riester will increase savings (7.7% and 3.9%) and consumption tax rate will decrease (-0.3% and -0.2%) but the public debt will attain 80% and 79%, respectively. The subsidies system will raise savings (3.9%) and consumption tax rate (0.2%) but will maintain the public debt close to 79.6%. Therefore, according to this paper, the government will have to balance the costs of the Riester pensions program by increasing consumption taxes.

From the large set of paper revised in this literature review it is not possible to clearly determine to what extent tax incentives motivate individuals to reallocate their savings and to what extent they generate new savings. Authors have been forcing their imagination to define alternative empirical strategies to examine this policy issue. Expecting to identify savings patterns, they compare eligible and not eligible individuals, old contributors and new contributors, young and close to retirement individuals under different macro and micro scenarios. However, results are very often unreliable and ambiguous.

Therefore, the empirical evidence does not succeed in settling this debate that never seems to end. Understanding the reasons behind the failure of empirical studies to come out with a final conclusion imposes itself.

Why empirical papers find so different results?

The empirical evaluation of tax incentives as a policy instrument to increase or to generate new retirement savings is constrained by: methodological difficulties; measurement difficulties related to indicators definition and the complexity to enclose behavioural and sociological variables. Without getting into econometrical and statistical explanations, these three obstacles will be briefly explained.

First, empirical papers are limited in terms of quantity and quality by methodological difficulties. Indeed, conducting empirical evaluation of tax incentives policies is not an easy task. Five obstacles have been identified:

- Complete and reliable data describing saving and consumption behaviour is hardly available beyond few points in time and almost nonexistent for time series.
- Aggregate analysis may be biased by individual particularities that determine the decision-making process. Age, gender, ethnicity, marital status, education, income, number of financial dependents, household size, financial attitudes, retirement attitudes and risk tolerance are some of the demographic and socioeconomic characteristics that influence savings decisions. Even clever econometrics artifices to take into account this diversity are not enough to obtain reliable conclusions.
- Snapshots of household behaviour or trends cannot be generalised as to evaluate pension regimes. Despite the fact that most of the papers (e.g. Fehr and Haberman, 2007; Attanasio and DeLeire, 2002) reviewed in this literature divide their sample in cohorts to identify changes by age, income, education, among other, they are based in short periods of time that may be not enough to have a clear picture of the effects of tax incentives programs on retirement savings. Having longitudinal data could improve the quality of lifecycle approaches in the sense that they often have to assume individuals behaviour for many decades.
- Fourth, and as a consequence, cross-country comparisons are very often inconclusive.
- Standard economic theory leads to ambiguous results. In fact, perfect information and rationality are two strong assumptions that biased any kind of analysis. Assuming financial education and plain understanding of the large set of pensions programs force experts to abstract essential elements of the trade-off between new and reallocated savings.

Second, besides these econometrical and statistical constraints, the complexity of defining a reliable indicator to assess the impact of tax incentives on retirement savings make difficult the empirical evaluation of such policy. Some authors measure this impact through consumption while others prefer wealth or coverage trends after and before the introduction of these incentives.

Indeed, the diversity of results pointed out by the papers examined in this literature review can be explained, to some extent, by the use of different proxies to measure the impact of tax incentives on retirement savings.

For instance, Poterba *et al.* (1995, 1996a and 1996b) and Engen *et al.* (1994, 1996), which essentially compares the change in wealth over time in eligible and non-eligible workers, use the same dataset and cover the same period but adopt two different definitions of wealth. The former just takes into consideration the ownership of financial assets while the latter also includes housing equity. Although the “small” difference in wealth definition, the results of these two papers are completely contradictory. For Poterba *et al.*, tax incentives create new saving whereas for Engen *et al.*, individuals will shift savings from other vehicles to tax incentives pension plans.

What is the most adapted definition of wealth when the purpose is to assess the impact of tax incentives pensions plans on retirement savings? It is possible to argue that the income that would be allocated to retirement savings will not come from the “mental” account dedicated to mortgage but from consumption reduction. In this case, housing equity will not be an explanatory element of retirement savings decisions. On the other hand, according to lifecycle approach, borrowing constraints and debt liabilities have a role to play in individuals’ saving and consumption decisions. Hence, to include homeownership in the definition of wealth appears to be economically coherent.

Puzzling, some papers use the same indicator but obtain different results. For instance, Disney *et al.* (2007) and Chung *et al.* (2006) they both use coverage data as an indicator of the impact of tax incentives but according to Disney *et al.* Stakeholder Pensions decrease pensions coverage while Chung *et al.* show a positive coverage evolution. Disney *et al.* (2007) do not specify how they estimate coverage trends but, from the reading of the paper, their coverage estimation corresponds to an aggregate measure. On the contrary, Chung *et al.* (2006) estimate coverage trends across earning groups. This methodology allows the assessment of differential changes in individuals and households according to their age and income level.

Third, to overcome the savers homogeneity and perfect rationality and information assumptions, imposed by standard economic theory, heterodox economic theories have been trying to complement and to go forward in the understanding of individuals saving behaviour in face of tax incentives embedded in pensions plans. Card and Ransom (2007) distinguishes three approaches:

- Savings behaviour: Assumes that saving behaviour is intimately connected to intertemporal consumption. Increasing in retirement savings will be offset by reductions in other forms of wealth. This approach is known as the lifecycle model.
- Imperfect information: Examines the quality of the information available to decision-makers. Surveys show that many workers lack basic information on their public and private retirement benefits (Gustman and Steinmeier, 2001). For instance, minor details about defaults arrangements could have large effects on pensions savings behaviour.
- Mental accounting: Assumes that individuals divide different income sources into different mental “accounts” and treat the balances in different accounts as imperfect substitutions.

Certainly, introducing behavioural and sociological variables to the analysis would help to clarify the impact of tax incentives on retirement savings. In fact, understanding how individuals make their saving choices or why they do not make provisions for their retirement is essential to evaluate the efficiency of tax incentives pension programs and to promote better policy design.

In sum, more empirical evidence is needed to determine if tax incentives generate new savings or motivate adjustments of savings portfolios. New empirical studies must be accompanied by better data, in order to undertake longitudinal studies. Longitudinal studies should be preferred to cross-sectional ones, since, to assess the impact of tax incentives on retirement savings plans it is necessary to observe the same individual or household over long periods of time. This long term and repeated observations will allow the analysis of correlation between retirement savings and tax incentives.

3. Is the impact of tax incentives on new savings stronger for mi-to-low income individuals?

This section presents the point made by authors defending a positive tax incentives impact exclusively for low-to-mid-income individuals as well as recent well-founded empirical evaluations supporting that new savings may also come from high-income individuals. The new evidence is quite

controversial since evaluations undertaken in the late nineties and early 2000 showed a net positive impact of tax incentives savings programs on low-income earners.

Theoretically speaking, under *ceteris paribus* conditions, tax incentives plans should be a strong incentive to boost retirement savings. Yet, most of the empirical evidence identifies low-income individuals as the group most affected by tax incentives (Poterba, 1996a,b; Engen and Gale, 2000; Benjamin, 2003; Disney *et al.*, 2007; Chung *et al.*, 2006, among others). In this sense, tax incentives would promote merely new savings from low-income individuals.

These papers defend that young and low-income individuals may not have financial assets and may not be involved in retirement savings plans before the incentive introduction. Hence, any contribution done by these categories will represent new savings. In fact, evidence suggests that high-wealth households are more likely to finance contributions to tax incentives accounts by shifting assets from other sources, rather than reducing their current consumption, whereas mid-income households are more likely to finance contributions by reducing consumption (Hawksworth, 2006).

Certainly, this assertion is quite logical and is based in empirical evidence. Nevertheless, recent papers show that new savings may come from older and high-income cohorts as well (Ayuso *et al.*, 2007; Blundell *et al.*, 2006). Young and mid-to low-income individuals are motivated to engage in a retirement saving program and elder and high-income individuals seek to reduce their tax liabilities in the absence of liquidity constraints. In view of recent results and awaiting further evaluations, it can be conclude that new savings generated by tax incentives come mainly from mid- to low-income individuals and to a less extent, from close to retirement and high-income individuals.

Engen and Gale (2000) argue that tax incentives in 401(k) are likely to raise savings for low-earners but may have no effect on high earners or high savers. They use data from 1987 to 1991 from the Survey of Income and Program participation and find that 401(k) held by low earnings groups, who hold a small portion of 401(k) balances, are more likely to represent additions to net wealth than 401(k) held by high earnings groups, who hold the bulk of 401(k) assets. Over all households, between 0-30 % of 401(k) balances represent net additions to private saving.

Engelhardt (2001) suggests that 401(k) generate economically large, and sometimes statistically significant, household saving effects for lower-to-middle income households. Besides, the author finds that new savings decline with income, confirming then that higher-income households have incentives for substitution between components of wealth.

Fehr and Habermann (2007) argue that the increase by 3.9% of new savings after the introduction of Riester pensions in Germany is mainly due to young and low-income contributors. In parallel, results from cohort analysis show that 60% of the youngest and low-income individuals do not contribute at all while close to retirement cohorts increase their contribution.

The authors propose two explanations to these apparently contradictory results. First, elderly cohorts reshuffle their precautionary retirement savings in order to increase longevity insurance. After the introduction of Riester pensions, elderly contributors filled to its limit the account to enjoy from the tax-relief. Second, young and low-income individuals' contributions represent new savings since these individuals were not affiliated to any saving plan before the introduction of Riester pensions. The fact that individuals between 25 and 39 years old with low-income contribute progressively to Riester pensions as their liquidity and borrowing constraints disappear, proves that their contributions are new savings.

However, new empirical evidence balances such findings. For instance, Ayuso *et al.* (2007)'s paper has the particularity of identifying a small increase in new savings of households between 56 and 65 years old with high-income, the group that most contributed to the plan in Spain.

This paper brings three interesting conclusions about tax-incentives effects on household expenditures. First, households between 56 and 65 years old with high-income levels have a small drop in consumption while the group between 46 and 55 years old has a large drop. Second, medium age individuals with high-income tend to reduce their consumption in a greater proportion than younger individuals between 36 and 45 years old do. Third, households between 56 and 65 years increase its contribution since liquidity and uncertainty consideration are less important than for younger groups who may have borrowing constraints, among others.

Therefore, close to retirement individuals allocate new savings to tax-incentive pension plans, specially those with higher income and less liquidity constraints.

Blundell *et al.* (2006), based in lifecycle model, assess the impact of tax-incentives embedded in saving retirement plans in the United Kingdom. Their evidence shows that low- as well as high-income earners increase their contributions as a response to the incentive. On the contrary, mid-income earners are not motivated to do so because of an income effect created by the Pension Credit Guarantee⁵.

The authors argue that individuals tend to save less for their retirement when state pensions are expected to be generous. Trends of state pension payments, between 1948 and 2050, show that when the replacement rates provided by the state are low, mid-income individuals reaching 65 years old are likely to save for retirement in order to maintain their living standards in retirement.

Evidence from the English Longitudinal Study of Ageing (ELSA) shows that after the introduction of the Working Tax Credit, the Child Tax Credit and the Pension Credit Guarantee in 2003, individuals who expected to receive the credit are not motivated to obtain outside income, either by continuing to work or through income generated from savings. Hence, this is income effect have a negative in funded pensions an in individuals retirement savings. Indeed, between 2003 and 2004, the coverage rate decreased after the introduction of such policies from 47% to 38.7%. Controlling for gender, age, education and household composition those who are on the taper are likely to contribute to a private pension.

Despite the fact that these results are statistically significant, they are based in data from the first year after the reform and may not reflect the real impact of these incentives to save for retirement.

Two outcomes can be drawn from these controversial and new findings: First, new savings generated by tax incentives come mainly from mid- to low-income individuals and to a less extent, from close to retirement and high-income individuals. Second, if the policy objective is to increase national savings and ensure that less prepared groups will have enough retirement income to be self-sufficient, hence new savings from elder and high-income individuals is a net positive side effect. Third, forthcoming empirical evaluations should not take as a starting assumption that new savings come from young and low-income individuals. From now on, the hypothesis that new savings come from high-income individuals should also be estimated.

⁵ This plan ensures that anyone who is prepared to claim the full basic state pension (£82,05 per week) will have its income topped up to at least the guaranteed level of £109.45 per week for a single individual in 2005-2006.

Sections 2 and 3 show that tax incentives increase retirement saving by portfolio reallocation and, in a much lower proportion than expected, by new savings generation mainly from mid- to low-income individuals and, in a lower degree, from close to retirement and high-income individuals. To increase the proportion of new savings generated by tax incentives pensions plans, several papers propose the adoption of complementary mechanisms. The next section presents evidence examining additional mechanisms that could be introduced to promote retirement savings of low-income earners.

4. The impact of other additional mechanisms in retirement savings

This section presents empirical evidence on the United Kingdom, the United States, Australia and Sweden that proposes the adoption of other mechanisms to promote an increase in retirement savings. Compulsory savings, soft-compulsory (that is automatic enrolment with opt-out clauses) and matching contributions are some of the mechanisms that can be used.

The papers included in this literature review confirm the success of these mechanisms in increasing retirement savings. Naturally, these mechanisms can complement each other depending on the policy goal. For instance, governments seeking an increase in coverage may complement automatic enrolment with matching contribution clauses (e.g. Gale *et al.*, 2004). However, using some mechanisms simultaneously may not have the expected impact on retirement savings (e.g. Card and Ramson, 2007). Therefore, the adoption of these mechanisms must be carefully evaluated *ex-ante* their implementation.

Available empirical evidence allows to draw two conclusions. First, soft- and compulsory mechanisms have a positive impact in retirement savings, even for those individuals that have important liquidity constraints. Whether it is by individuals' myopia and inertia or by awakening of savings taste after a first impulsion, mechanisms forcing employees to contribute increase retirement savings and, under some conditions, new savings. Second, aggregate evidence conclude that matching contributions and retirement saving are positive correlated.

Compulsory retirement savings

Evidence assessing the impact of compulsory retirement savings schemes with no opting out clauses concerns mainly the Australian experience (Connelly and Kohler, 2004 and Barrett and Tseng, 2007). However, one of the rare cross-countries studies about retirement savings plans deals precisely with compulsory savings plans (Lopez Murphy and Musalem, 2004). The available empirical evidence agree to assert that compulsory mechanisms promote retirement savings. This evidence is consistent with behavioural economics hypothesis (Haworth, 2006). Under this approach, people tend to avoid savings decisions because of their complexity, thus compulsory mechanisms make the decision for them.

The paper of Connelly and Kohler (2004) brings evidence about the impact of the compulsory superannuation on savings in Australia. The authors defend two reasons explaining why Superannuation Guarantee (SG) increases savings. The first is by forcing some consumers to save more. The second is by providing information to consumers about appropriate levels of saving, thus reducing some uncertainty or myopia that consumers may face.

For this purpose, they use aggregate annual time series data for 17 years (from 1986-1987 to 2000-2002) and model the level of saving as a function of labour income, wealth, a proxy for the degree of financial deregulation (the ratio of household debt to income) and an indicator variable for the introduction of the compulsory Superannuation Guarantee saving.

The authors show that Australian superannuation flows have grown from an average of 2% over 1989–95, to 4.6 % over 1996–2002. They highlight that compulsory superannuation increase saving, particularly for two groups of households. One group is liquidity constrained or financially constrained households, which consume all or most of their income. A second group are myopic households who may underestimate how much long-term saving is necessary to accumulate sufficient funds for retirement.

From the time-series model estimates they find that 38 cents by dollar of the increase in savings through superannuation has been offset by a reduction in voluntary saving. That is that each dollar contributed under the compulsory Superannuation Guarantee represents 62 cents of new savings, other things being equal. A consistent stylised model and theoretical propositions on savings support these results. Moreover, the authors take into account the impact of financial deregulation and capital gains on household savings since borrowing constraints and wealth influence savings decisions.

However, the study has one limitation related to the high level of aggregation: the evaluation may be most informative about the behaviour of high-income households, which may be the households of less policy interest.

Barrett and Tseng's (2007) paper complements the first finding of Connelly and Kohler (2004) that is that compulsory superannuation increases retirement saving in Australia.

The authors start their argumentation by illustrating with trends from the Bureau of Statistics Household Expenditure Survey (HES) that personal superannuation saving efficiency was limited since the preservation of savings tended to be very poor and the coverage of the population was low (specific occupations and public sector). This evidence indicates that in the mid-eighties only 30 % of private sector workers had any superannuation savings, and less than 25% of female employees had occupational superannuation.

Then, the authors argue that coverage of superannuation substantially increased in 1992 with the introduction of the mandatory Superannuation Guarantee. The obligation of employers to contribute 3% (and 9% by 2002) of employee earnings revealed to be a strong incentive. The evidence indicates that the introduction of the Superannuation Guarantee substantially increased coverage of superannuation savings, with over 90% of all workers having some employer-provided superannuation by 2004. Coverage was less among those with the lowest earnings, though coverage was very high for private sector workers, women and part-time workers.

Unfortunately, the authors do not corroborate Connelly and Kohler (2004) findings about the impact of compulsory Superannuation Guarantee in new contribution.

Lopez Murphy and Musalem (2004) show aggregate evidence based on cross-country regressions pointing out that the accumulation of pension funds increases national savings only when they are compulsory. Their evidence shows that each additional dollar of mandatory pension saving increase national savings by more than 50%. On the contrary, voluntary savings do not have a significant effect on national saving.

The authors explain these findings by two facts. First, individuals are aware of the importance of retirement savings and second, by the improvement of capital market due to the development of pension plans. Nevertheless, these results must be interpreted carefully since they concern 43 developing and developed countries and the number of observations differs considerably across countries.

Soft-compulsory retirement savings (automatic enrolment with opt-out clauses)

Retirement savings could increase through soft-compulsion, in particular through automatic enrolment. It has been suggested that automatic enrolment in pensions plans with appropriate default options with respect to contribution rates and investment allocation may achieve the dual goal of preserving individual choice and ensuring an adequate level of saving for retirement even if they do nothing. The recent findings from behavioural finance literature highlighting the importance of “inertia” or passive decision to participate in retirement saving plans (Choi *et al.*, 2002; Madrian and Shea, 2001; Mitchell and Utkus, 2003; and Beshears *et al.* 2006), suggest that changing the design of pensions plans (e.g. 401(k) plans) and making enrolment the default option, enrolment in voluntary funded plans can be boosted substantially as few employees ever take action to disenroll.

Poterba (2003) argue that despite the bankruptcy in 2001 of Enron, and other companies, many workers still have more than half their 401(k) plan savings in employer stock. In fact, financial inertia can be a powerful force for good when workers who are automatically enrolled in a retirement savings plan continue to make regular contributions because it takes effort to opt out (O’Neil, 2007). In face of complex decisions that involve many different options, people do whatever requires the least amount of current effort, which is generally doing nothing.

Madrian and Shea (2001) examine the 401(k) savings behaviour of employees in a large American corporation before and after automatic enrolment was introduced. Before the plan change, employees who enrolled in the 401(k) plan were required to ask for participation, whereas after the plan change, employees were automatically enrolled in the 401(k) plan, unless they decide to opt out.

Results point out that a 48 percentage point increase in 401(k) participation among newly hired employees and an 11 percentage point increase in participation overall 15 months after automatic enrolment was introduced. The authors also underscore that automatic enrolment increases participation by those income groups, which are least likely to participate in retirement plans. In fact, low-income individuals appear to benefit from automatic enrolment because it turns non-participants into participants and hastens the participation of others.

This paper corroborates Cronqvist and Thaler (2004) and Sundén (2004)’s findings about default option and inertia⁶. Indeed, the evidence shows that 75% of participants keep the default contribution. Madrian and Shea (2001) enlighten employees’ inertia by the fact that many employees take the default as investment advice from the company.

Interestingly, the authors note that low default contribution rates and low return default funds may lower employee wealth accumulation in the long run. They recommend as Thaler and Benartzi (2004) to improve information and communication with those enrolled.

Choi *et al.* (2001) assess the impact of automatic enrolment and 401(k) plans on savings behaviour. Using data from several large corporations, collected through a survey designed by the authors, they conclude that employees often follow the path of least resistance. In companies without automatic enrolment, employees take a year to enrol in the sponsored 401(k) while in companies with automatic enrolment, employees overwhelmingly accept the automatic enrolment default. The participation trend for employees hired under automatic enrolment starts and remains high. At six months of tenure, 401(k) participation attains 86 to 96 %. Moreover, signing up for an automatic schedule to raise their contribution rate engage employees to smoothly increase their retirement savings.

⁶ The papers of Cronqvist and Thaler (2004) and Sundén (2004) are examined hereafter.

The papers of Cronqvist and Thaler (2004) and Sundén (2004), based on individuals inertia, argue that the Swedish automatic enrolment pensions policy, increase coverage and increase retirement savings.

Cronqvist and Thaler (2004) bring evidence about the trade-off between imposing automatic enrolment, through default options, and letting individuals choose by themselves their retirement saving fund. They find that even if the government discouraged the default choice, in order to promote competition among funded pensions, the default fund has the larger market share. Indeed, 90% of individuals chose the default option. This pattern is even more important for younger generations. In 2003, only 8.4% of younger workers selected their own pension fund. The authors explain this pattern by individuals inertia and by the difficulty they have in making a choice due to weak financial education and complex information.

Sundén (2004) argue that the broad choice (650 funds) and the peak of the stock market may explain why less than 10% of new participants made an active investment choice. The author explains that individuals are lost in face of the large diversity of funded pensions. This is why they neither opt-out nor change the default option. Without the default options they would have do not affiliate to none funded pension plan. For instance, younger participants are less likely to make decisions about pensions because retirement is far away and they may have more immediate financial concerns such as paying off education loans or buying a house. The paper concludes that so far, the evidence indicates that Swedish participants exhibit the same inertia that has been observed for participants in 401(k) plans.

In 2006, the United Kingdom Department for Work and Pensions accepted to introduce the National Pension Saving Scheme (NPSS) to implement what it calls “personal accounts”. Under these proposals, all employees who are offered an occupational pension that meets certain minimum standards will have to choose to not join the scheme as opposed to having to choose to join the scheme. Those employees who are not offered such a scheme will, if they are aged over 21 and earn above £5,000 per year, be enrolled into a personal account to which they will, by default, contribute 4% of their earnings. In addition their employers will contribute 3% and a 1% “contribution” will come from the government on the same band of earnings. Individuals are allowed to choose to change their own contribution level and even not to contribute at all; although if individuals contribute less than 4% then their employer will not have to contribute. The Department for Work and Pensions (2006) estimates that there will be between 6 and 10 million members of personal accounts contributing £8 billion a year, of which £4.5 billion will represent new saving. Certainly, it is premature to estimate the effects of NPSS but as this policy breaks the traditional British hostility to compulsory retirement savings it is worthy to summarise evidence and results from papers leading the way.

Haworth (2006) undertakes a literature review to determine the possible effects on household savings if the NPSS is adopted in the United Kingdom.

In spite of the inconclusiveness of the empirical evidence revised by the author, he expects a non-relevant offset effect from higher income groups since the NPSS is designed for low and middle-income groups. The author explains that NPSS will probably increase new savings because low-income categories will not be saving before the introduction of this plan and if they shift savings from other vehicles it will be a very small offset effect.

Most of the arguments of the author are based in behavioural economics. He expects that individuals’ inertia will make them save more “automatically” avoiding voluntary choices. The author claims that new savings could be generated because individuals will be automatically enrolled, they

will have the possibility to enrol after opting-out and NPSS account follows individuals across jobs. According to the author the reduction of the cost of making a choice will have a positive impact in new savings. In other words, employees' inertia will reduce the transaction cost of making a decision, as it was the case in Sweden and in the United States.

Disney *et al.* (2007) suggest that individuals do not react positively to the tax incentives because they are not strong enough to influence saving decisions. Consequently, the authors recommend automatic enrolment and default options rather than voluntarism plans. Promoting retirement savings by giving employees no option in the short run will teach them how to save in the long run. Nevertheless, the authors propose to be careful at the time of introducing soft-compulsory mechanism in the United Kingdom. They highlight that the costs of this increase in (contingent) compulsory employer contributions could lead to a combination of higher prices, lower wages or lower investment returns, all of which, in isolation, will tend to reduce consumption.

Micro evaluations, through cases studies, indicate also that automatic enrolment schemes are successful in boosting participation rates. Horack and Wood (2005) find that in the case of a British motor manufacturer with 1 thousand eligible employees, the participation rate in a stakeholder pension scheme rose from 25% to 58% following the introduction of automatic enrolment with default contribution. They also find that, after introducing automatic enrolment in a medium-sized financial services company, rates participation to stakeholder schemes rise from 45 to 62%. In a healthcare and a construction company the participation rates increase from 86% to 92% and from 88 to 92%, respectively.

This study also revealed that small and medium-sized companies might decide to stop automatic enrolment because a combination of fears that automatic enrolment might increase employer contribution and administration costs and infringe employee autonomy. Therefore, guidance from governments could reduce the uncertainty faced by employers.

Matching contributions

Several papers defend the net positive impact of matching contribution on retirement savings (Gale *et al.*, 2004; Choi *et al.* 2004). Employers can make a contribution based on elective deferral contributions made by the employee up to a certain dollar amount or percentage of compensation. In some countries, government may decide to match the contribution as well. Matching contribution promotes retirement savings, given that employees will tend to maximize their contributions knowing that employers will match it (Choi *et al.* 2002).

Gale *et al.* (2004) provide an evaluation of the impact of the 2001 tax legislation in saver's credit in the United States. The saver's credit provides a government matching contribution for voluntary individual contributions to 401(k), IRA and similar retirement savings arrangements. Moreover, it applies in addition to any employer matching contributions and interacts with automatic enrolment.

According to the authors, the tax code provides strongest incentives to high-income households who are more likely to use tax incentives vehicles as a shelter than as an opportunity to increase overall saving. They defend that the saver's credit could help to correct the little incentive that the tax system provides for participation in tax incentives saving plans by low-income households that do owe income tax. Even if for some low-income families, income may be so modest that it is impossible to save after paying for necessities.

Even if the effective match rate in the saver's credit is higher for low-income families and therefore, it encourages participation by moderate and low-income employees, the authors make three

recommendations to improve the potential benefits of the saver's credit. These recommendations are based in the Urban-Brookings Tax Policy Center Microsimulation Model (TPC) and Internal Revenue Service (IRS) data:

- First, the number of household non-eligible could be reduced if the non-refundable clause is changed. 61 million returns have incomes low enough to qualify for the 50 percent credit, but since the credit is non-refundable, only about one-sixth of these tax filers could actually benefit from the credit.
- Second, the credit rates are currently not indexed to inflation. As a result, the credit grows less generous over time, as inflation pushes more households above the phase-out thresholds. In general, the tax code is indexed to inflation, so that inflation by itself does not increase tax burdens.
- Third, the credit could extend eligibility to additional middle-income households changing the credit rate and income limit. TPC model estimates show that 96% of the households who would benefit from the expanded 50% credit are in the 15% marginal tax bracket. The 50% credit rate could be expanded to households with AGI of up to \$60,000 or \$70,000 (joint filers). These households may thus be more likely than lower-income households to respond to the incentive, while being more likely than higher-income households to respond with an increase in their net saving rather than a mere shift of assets designed to generate a tax benefit. The TPC model suggests that the newly eligible filing units are households that have median financial assets of \$42,000 and mean financial assets of \$83,000.

The authors recall that for national saving to increase, private saving must increase by more than one dollar in response to each dollar in lost revenue and that to raise private saving, the incentives must not simply cause individuals to shift assets into the tax incentives pensions but must generate additional contributions. However, there is no quantitative evidence to conclude if savings generated by the saver's credit will compensate its cost: 115 billion dollars in ten years according to the TPC model. Certainly, the saver's credit will increase low-income contributions and will reduce income insecurity among elderly but is this reform cost effective?

Duflo *et al.* (2005) examine the effects of offering matching incentives for IRA contributions at the time of tax preparation. This paper reports evidence from the first large-scale, randomized field experiment regarding the effects of matching rates on the willingness of low- and middle-income families to contribute to IRA. The evidence shows that IRA deposits are 4 to 7 times higher, than with no match. The authors conclude that matching contributions represent a promising way to promote incentives for low- and mid-income households to participate in retirement saving accounts. Matching contributions are independent of the individual's marginal tax rate, and thus provide a significant incentive even for people in low marginal tax brackets.

Engelhardt and Kumar (2003) find that 401(k) participation and contributions do increase with a higher match rate. To draw this conclusion, they take into account the match rate and the match threshold in the employees' optimization problem and use a non-linear budget constraint methodology to estimate how much employees contribute to 401(k) plan.

Choi *et al.* (2004) bring evidence to support that the distribution of contribution rates responds to a change in the structure of the 401(k) match. After the introduction of the employer match, the contributions rate increase by 4%. The authors recall that this finding is consistent with the economic incentive employees face to contribute at the match threshold, and also with the hypothesis that the match threshold serves as a powerful focal point for employees' contribution rate choices. Even if the

authors use participant-level data combined with plan-level information on match rates and thresholds, their results are based only in two companies and must be extended carefully.

The evidence arguing that matching contributions may not increase retirement savings is weak in the sense that it is based in particular group, like college professors, and very small samples. However, in order to present all points of view the paper of Beshears *et al.* (2007) and Card and Ramson (2007) are here summarised.

Beshears *et al.* (2007)'s paper on the impact of employer matching contribution on savings plan participation under automatic enrolment in the United States shows that the match has only a modest impact on opt-out rates. Using cross-sectional data and two estimation strategies, one based on the substitution of the employer match with a non-contingent employer contribution, and the other based primarily on variation in the employer match across firms, the authors find that participation rates under automatic enrolment decline only modestly when the employer match is eliminated or reduced. Therefore, the authors conclude that automatic enrolment and matching contributions have a positive relation but the magnitude is modest. However, this conclusion must be read carefully since the study is based in one firm (A) and in a group of nine firms.

In the same line of thought, Card and Ramson (2007)'s paper illustrates that mandatory employee contributions in conjunction with employer contributions may not lead to an increase in retirement savings. To draw this conclusion, the authors have a framing effect⁷ approach and use data from the Princeton Faculty Retirement Survey (PFRS) from 1986 to 1997. They find that an increase by 1% of the employer contribution caused a drop of 0.25% of professor's contributions to tax incentives pension plans. In currency terms, each additional dollar of college professor's contributions leads to a 70 cents reduction in tax incentives supplemental savings, whereas each dollar of employer contributions generates only a 30 cents reduction. However, the evidence is based in a sample composed only by 100 establishments and in a very specific population group. In addition, mimetic patterns have been well recognized among individuals of the same group or among relatives (Kirman and Zimmermann, 2001). Generalization of these results must be made with caution.

In sum, the large set of papers reviewed in this section brings enough empirical evidence to conclude that matching contributions and soft- and compulsory retirement savings are effective in increasing retirement savings and pensions plans coverage. Moreover, as the papers of Connelly and Kohler (2007), Hawksworth (2007) and Gale *et al.* (2004) illustrate mandatory contribution, NPSS and savers' credit may generate new savings in Australia, the United Kingdom and the United States, respectively.

5. Conclusions and recommendations

This closing section presents the main findings of this literature review and addresses policy recommendations to increase retirement savings through tax incentives pensions plans and others mechanisms.

Table 1 summarises main findings as well as methodology, data sources and period covered by the papers considered in this literature review. Even if the empirical evaluation is not conclusive, and sometimes it is contradictory, seven conclusions can be drawn:

⁷ The context or framing of problems adopted by decision makers is controlled in part by their norms and habits, among others.

- First, tax incentives may lead to an increase in retirement savings through the adjustment of saving portfolios. Individuals may tend to reallocate their existing savings to tax-relief retirement accounts from other savings vehicles in order to reduce their tax liabilities.
- New savings may be generated as a response of tax incentives embedded in pensions plans. Certainly, there are a lot of doubts about the share that represent new and national savings. Available evidence estimates that new savings could represent 10 to 100%.
- The empirical studies carried out until now are inconclusive. The reasons of this failure are mainly due to the lack of long series of data; the difficulties to define an indicator of the effectiveness of tax incentives embedded in retirement savings programs; and the complexity to enclose behavioural and sociological variables. More empirical evidence is needed to fully understand the impact of tax incentives in retirement savings. General equilibrium model and further evaluations based in longitudinal data, should be a priority. Moreover, empirical evaluations could be extended to self-employed and to low-skills employees who very often work for small firms that offer less attractive pensions plans (Bell *et al.*, 2005).
- Recent evidence balance the conclusions reached by earlier papers according to which new savings come from young and low-income individuals. Indeed, it is quite possible that new savings come from older and high-income individuals and not exclusively from younger and low-income generations.
- Empirical evidence indicates that soft- and compulsory retirement savings and matching contributions have a positive impact in retirement savings. Hence, mechanisms forcing employees to contribute increase new and retirement savings. To cover a broader population, employers contributions and eligibility and opting-out clauses can be adjusted.
- Finally, given that the coexistence of some mechanisms may produce perverse effects, their adoption must be carefully assessed and evaluated before their implementation.

Whether new savings or reshuffling of savings is best for national economies should be determined in cost-efficiency terms. The cost of tax-incentives retirement savings plans depends on the policy goal and should be evaluated in case-by-case basis.

Governments that seek to lock-in savings into long-term earmarked retirement savings will compensate the cost of introducing tax incentives by an increase in savings no matter if savings are new or reshuffled savings. Evidence support that individuals are sensitive to tax incentives and tend to allocate a higher proportion of their savings in tax incentives pensions plans to benefit from tax relief. In this sense, governments achieve their goal (i.e. to lock-in savings into long-term earmarked retirement plans) and compensate the cost of introducing tax incentives measures.

On the contrary, the cost of introducing tax incentives for governments seeking new savings could be assessed in two ways.

First, the costs could be measured through the tax-credit deducted by the government. Indeed, any deduction in the marginal tax rate means a reduction in fiscal incomings. This fiscal reduction must be compensated by an increase in private retirement savings, so as to alleviate public pension system's liability of ensuring higher retirement income and wealth. These adjustments are complex since in the meantime some governments may require consumption levels to remain constant while others may prefer an increase.

Second, the fact that tax incentives hit the “wrong” target is a cost. Tax incentives are adopted to increase retirement savings among low-income earners, as they have been identified as the less

prepared category. However, high-income individuals are the most willing to shift their savings from other vehicles to tax incentives pension plans since they have a large amount of savings and they want to benefit from the offered tax relief (Shoven and Sialm, 2003). As a consequence of the larger impact of tax incentives on high-income groups, some countries may increase their elder poverty gap.

Several mechanisms, as compulsory contributions and automatic enrolment, could be adopted to promote new savings and to ensure that low-income individuals will be able to accumulate during their working life enough retirement income to be self-sufficient and thus release public assistance.

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A REVIEW OF THE PROS AND CONS OF INTEGRATING PENSION SUPERVISION WITH THAT OF OTHER FINANCIAL ACTIVITIES AND SERVICES

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ABSTRACT

A Review of the Pros and Cons of Integrating Pension Supervision with that of Other Financial Activities and Services

The pros and cons of the alternative structures for the agencies that supervise the financial system are of interest to policymakers. Whether to employ an integrated structure, with a single agency overseeing a range of financial intermediaries (including banks, insurance companies and securities firms) has been debated at length – mainly due to the rise of financial conglomerates providing a range of products. Another matter which has been less considered is whether the supervision of pension funds should also be included in such integrated authorities. This paper aims to add to that debate. After examining a range of arguments for and against such integration, the paper concludes that there is no simple reply, that the answer depends on the context and environment of the pension system, and that the benefits of both integrated and specialist pension supervision can probably be achieved within either structure.

Keywords: supervision, pension, supervisory structures, integrated, specialist, intensive supervision, exceptional supervision.

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* Input to this paper was also provided by Fiona Stewart of the OECD.

I. Introduction

The pros and cons of modifying the structure of the agencies that supervise the financial system are of interest to policymakers. It is an issue that has been widely discussed in policy notes and academic papers in recent decades, and began to be discussed in the late eighties when Norway, Denmark and Sweden were establishing a single supervisory authority in their countries.¹ The discussion heated up in the late 1990s when the United Kingdom created the Financial Services Authority (FSA) and continued in the first half of this decade as many developed and developing countries moved towards more integrated structures.²

Today, the discussion seems to have reached a consensus regarding the need to supervise the regulated components of financial groups to take into account the different prudential requirements of each sector and the different risks to which each is exposed, but without losing sight of the group as a whole, including the parent. Indeed, it is partly this need to ensure that a group-wide assessment and management of risk is achieved that has led some countries to restructure their supervisory systems to deal with financial groups in an integrated fashion. However, no single model has been adopted and many countries continue to rely more or less on functional oversight regimes with separate rules and separate supervisors for the banking, insurance, and securities sectors. Regimes range from disaggregated structures to single regulators with statutory authority, with various mixtures in between. Given the wide range of regimes in practice, it is safe to conclude that there is no single model to organize supervision which can be considered “optimal” in all cases.

There is a pending, and most important, issue in the discussion of supervisory structure with respect to pensions. Pension funds are becoming major institutional players in financial markets around the world. Policymakers must have an educated opinion on the impact that the supervisory structure has on the efficacy and efficiency in achieving its objectives. Is it better to incorporate the pension supervisor within the integrated agency that supervises other financial intermediaries as Australia, Denmark, Iceland, Norway, and Sweden have done? Or, is it best to have a specialized agency to deal with pension funds?

This paper sheds some light on this issue. Section II provides a brief overview of the main issues raised in the literature on the pros and cons of integrating *banking* supervision with that of *insurance and securities*. With that framework in mind, we review, in section III, what has been written about incorporating *pension* supervision into an integrated supervisory agency. Section IV develops these arguments further, looking at how the broader socio-economic and pension environment may impact the optimal supervisory structure.

The analysis in this paper does not provide a straight forward answer as to whether a specialist or integrated supervisory structure is optimal for pension funds, for several reasons:

¹ This paper centers on the issue of pension supervisory structures without touching on the related issue of regulatory and supervisory independence. See Quintyn and Taylor (2002) for arguments in favor of independence, its dimensions, and the way to achieve them, as well as the institutional arrangements needed to make independence work in practice.

² In the past 30 years, Australia, Austria, Canada, Colombia, Denmark, Estonia, Finland, Germany, Hungary, Iceland, Ireland, Japan, Latvia, Malta, Netherlands, Nicaragua, Norway, Peru, Singapore, South Africa, South Korea, Sweden, Switzerland, and the United Kingdom among others have established integrated agencies, which oversee various combinations of the banking, insurance, pension and securities sectors.

- First, the debate as to whether pensions are similar enough to other financial products to be supervised in the same way has not been decided – particularly in relation to prudential supervision and whether the approach used to supervise financial institutions such as banks and insurance companies is applicable to pension funds;
- Second, there is no right or wrong answer as the supervisory system will depend on the pension system itself – and this in turn is informed by other economic and social factors. Some pension systems and environments may be better suited to an integrated rather than a specialist supervisory approach, but often the supervisory structure is more due to ‘historical accident’ than any strong view on the pros or cons of integration;
- Finally, in many ways the question is irrelevant. There may well be an argument as to why pension funds are unique enough for pension supervision to require a different approach to other financial institutions. However, it is possible that this specialist approach may be achieved as successfully by a separate division within an integrated supervisory authority as by an independent pension supervisor. Likewise, if an independent supervisor is set up, many of the gains of an integrated authority may still be achieved via strong communication between supervisory authorities.

II. Arguments for and against the integration of *banking* supervision with that of *insurance and securities*

Types of supervisory systems

Market imperfections and failures create the need for financial regulation and supervision in financial services. In the presence of externalities and information asymmetries, the competitive equilibrium fails to achieve Pareto efficiency without proper state intervention. Llewellyn (1999) points out seven components of the economic rationale for regulation and supervision in banking and financial services: (1) Potential systemic problems associated with externalities; (2) The correction of other market imperfections and failures; (3) The need for monitoring of financial firms and the economies of scale that exist in this activity; (4) The need for consumer confidence, which also has a positive externality; (5) The potential for grid lock, with associated adverse selection and moral hazard problems; (6) Moral hazard associated with the revealed preference of governments to create safety nets arrangements: lender of last resort, deposit insurance, and compensations schemes; and, (7) Consumer demand for regulation in order to gain a degree of assurance and lower transaction costs.

In this context, four core objectives of financial regulation and supervision have traditionally been identified: (1) Protection of consumers/investors against opportunistic and hazardous behavior on the part of financial institutions; (2) Maintenance of consumer confidence in the financial system and in the integrity of financial institutions; (3) Ensuring systemic stability; and (4) Safety and soundness of individual financial institutions. At issue is how to create an effective, transparent, and cost-efficient framework for achieving these objectives, both for individual sectors of the financial services industry and for the financial system as a whole.

Table 1. Countries with a Single Supervisor, Semi-integrated Supervisory Agencies and Multiple Supervisors

Multiple Supervisors (at least one for banks, one for securities firms and one for insurers)		Agency Supervising Two Types of Financial Intermediaries			Single Supervisor for banks, securities + insurers
		Securitie s firms and insurers	Banks and Insurers	Banks and securities firms	
Argentina	Jordan	Bolivia	Australia	Dominican Republic	Austria
Bahamas	Lithuania	Chile	Belgium	Finland	Bahrain
Barbados	New Zealand	Egypt	Canada	Luxembourg	Bermuda
Botswana	Panama	Mauritius	Columbia	Mexico	Cayman I.
Brazil	Philippines	Slovakia	Ecuador	Switzerland	Denmark
Bulgaria	Poland	South Africa	El Salvador	Uruguay	Estonia
China	Portugal	Ukraine	Guatemala		Germany
Cyprus	Russia	Netherlan ds	Kazakhst an		Gibraltar
Egypt	Slovenia		Malaysia		Hungary
France	Sri Lanka		Peru		Iceland
Greece	Spain		Venezuel a		Ireland
Hong Kong	Thailand				Japan
India	Turkey				Latvia
Indonesia	USA				Maldives
Israel					Malta
Italy					Nicaragua
					Norway
					Singapore
					South Korea
					Sweden
					UAE
					UK
As percent of all countries in the sample					
38%	9%	13%	8%	29%	

* Sample includes only countries that supervise all the three types of intermediaries (banks, securities firms and insurers)

Source: De Luna and Rose (2003). (It should be noted that some countries may have changed their supervisory structure since the publication of this report.)

In practice, no approach has been universally adopted. Rather, three broad models of regulatory and supervisory structure seem to be clearly identifiable: (1) A specialized sector-based model in which there are separate regulatory and supervisory agencies for banks, for insurance, and for securities; (2) a fully integrated model, where all regulatory and supervisory functions have been incorporated into a single agency; and (3) an intermediate model in which banking and some other financial services are regulated and supervised by one agency but some specialized regulators and supervisors still exist.

The case for integrated supervision

An oft-stated maxim in discussions about regulatory frameworks is that supervisory structures need to mirror the evolving structures of the sectors they cover. It was in this context that the debate over the formation of integrated supervisory agencies began to intensify back in the 1990s, when a trend toward conglomerate structures in financial services developed in some regions. There is fairly widespread agreement that the potential for intra-group exposures within integrated financial services groups complicates the task of supervision. The January 2001 Group of Ten report on consolidation in the financial sector (the Ferguson Report)³ notes, for example, that the consolidation of a wide array of financial activities within large and complex organisations that include banking units not only blurs the traditional lines of demarcation among service providers but increases the potential for contagion effects from the non-bank to the commercial bank components of the same organisation. Conglomeration in financial services increases the need for information sharing, co-ordination and co-operation among supervisory authorities to ensure that a group-wide assessment and management of risk is achieved. Some observers contend that these activities are best achieved in integrated supervisory authorities.

The main arguments discussed in the literature in favor of integration of all supervisory activities are:

- that financial conglomerates can be more effectively supervised by an integrated agency, which enables economies of scale and scope in supervision to be better exploited;
- that there is less likelihood of regulatory arbitrage,
- that the probability of attaining a better defined set of objectives increases when they are all drafted for a single agency (avoiding the Christmas tree effect);
- that integrated authorities have a lower probability of suffering from “agency capture” by the industry;
- that there is an improvement in the quantity and quality of the information that flows between the various components of integrated authorities versus among the separate sector supervisors of distinct financial activities; and,
- that there will be more transparency and accountability in the case of a single regulatory and supervisory agency.

³ “Consolidation in the Financial Sector”, Group of Ten, Bank for International Settlements (Basle, January 2001).

Some researchers argue that the net benefits of integration are greater than the net benefits of a specialized supervisory structure (Demaestri and Guerrero (2005)). Other authors acknowledge that there has been a global move towards more integrated structures over the past couple of decades (Goodhart et al (1998), Llewellyn (2004), De Luna and Rose (2003)) and concede that integration offers some advantages, but they stop short of claiming any clear superiority of one structure over another. In any case, most analysts agree that the shift towards regulatory and supervisory integration has its origins in the structural changes that have occurred in the financial system. The rise of financial conglomerates, the speed of financial innovation, the growing complexity of financial activities, the increased demand for supervision of products which overlap several specialized supervisors, and the growing internationalization of financial services are all factors that have been cited as catalysts behind the formation of single financial services supervisors or at least behind the move towards integration and away from the specialized agency model.⁴

Nonetheless, it is widely recognized that there is no optimal financial supervisory structure. In fact, the most sensible advice seems to be that simply modifying the supervisory structure will not guarantee effectiveness.

The case against integrated supervision

Arguments against integration include the possibility of creating a single supervisor that is so big and powerful that it can potentially become divorced from the industry it oversees (Bureaucratic Leviathan). Furthermore, it has been argued that a moral hazard problem can arise if the public develops the false impression that every financial instrument has the same risk or is supported by the financial safety net, given that they are all supervised by the same agency.

Some authors, such as Llewellyn (2004), have made the point that the potential hazards of integrated agencies go beyond the risk of creating an extremely powerful regulator divorced from the financial industry and the moral hazard problem that can arise because of a misconception of the risk of different financial services. Rather, he argues that the main grounds for criticizing the mega regulatory and supervisory agency are that: (1) There remain major differences between the core businesses of banks, securities firms, and insurance companies which can blur the accountability for certain financial products within a single integrated agency; (2) A mega agency might lose focus on the objectives of regulation and supervision for each different product and business; and (3) There is no guarantee that supervisors within the same organization will communicate more efficiently and closely than if they were within different specialist regulatory agencies.

There also is a case that can be made against having a monopolist regulator.⁵ There might be some merit to having a degree of diversity in regulation; namely, having some “competition” among specialized agencies allows them to learn from one another. Furthermore, a shadow of doubt on the argument of economies of scale and scope can be cast by pointing out that X-inefficiencies (derived from suboptimal resource allocation) may arise in a monopolist regulatory and supervisory agency.

Some of the arguments in favor of integration of the regulatory and supervisory structures seem to rely in part on an implicit assumption that a new integrated agency will begin with a valuable opportunity to redraft the objectives of the agency. Furthermore, this line of reasoning takes for granted that any such redrafting opportunity will be exempt from politicians’ interference, thereby leading to a better defined set of objectives for the new agency. One might also question the claim that

⁴ See Goodhart et al (1998).

⁵ Llewellyn (2004).

integration leads to a reduction in the likelihood of regulatory capture. A single regulator could be easier to capture than a whole set of regulators. Finally, the contention that transparency and accountability will be increased through a more integrated regulatory and supervisory structure is ultimately a matter of having the willingness and political backing to carry it out, without the need to modify the regulatory and supervisory structure.

A study by Carmichael et al. (2004) includes several countries' experiences with integration.⁶ Specific case analyses of the possible effects of changing a given country's regulatory and supervisory structure for banks, insurance and securities have been done before (Taylor and Fleming (1999) for Northern Europe, Briault (1999) for the FSA in the United Kingdom, and Demaestri and Guerrero (2005) for Latin America and the Caribbean). However, in these studies the potential benefits of integration have not been fully weighted against the possible hazards.

III. Arguments for and against the integration of pension supervision with that of other financial sectors

Case for integrating pensions

In some countries private pension schemes are financed with vehicles that have characteristics in common with life insurance; that is, the liabilities of both life insurers and many pension funding vehicles have long time horizons, and both the life insurance and pensions business are often conducted via products employing mutual funds as investment instruments.⁷ The so-called "unit linked" life policies and many types of personal pension products such as the 401(k) plans found in the United States are examples of such vehicles. Insurers are also major providers of personal pension products or act as managers of funds in some jurisdictions and, partly as a result, pension funds and insurers in a number of jurisdictions are overseen by the same supervisory body. Private pension schemes face a different ranking of financial risks, however, some of which are common for all pension systems while others are particular to private plans.⁸ They include the risk of the fund becoming insolvent, the investment portfolio risk for the employer in defined benefit plans and for employees in defined contribution schemes, and more generally interest-rate and inflation risks in funded schemes.

In practice, the structure of oversight regimes for pension schemes is quite complex, reflecting the variety of schemes in practice, and the varied nature in which such schemes are financed and managed. The various distinctions in the types of pension schemes result in a number of basic institutional modalities that may call for different supervisory approaches. To date, however, only a single article has tried to actually assess the pros and cons of incorporating the supervisory and regulatory agency for pensions into a financial sector mega-agency. An empirical analysis of the net benefits of incorporating pension supervision with an integrated agency for Latin American countries was done by Demaestri and Ferro (2004). This study qualitatively measures the relative efficiency and efficacy of reaching the main goals of financial regulation (Consumer protection, Systemic stability, and Efficiency of the System and safety and soundness of financial institutions) under an integrated

⁶ Australia, South Africa, Ireland, Sweden, Korea, El Salvador, Hungary, Estonia, and United Kingdom are all chapters in Carmichael et al (2004). Demaestri and Sourouille (2003) offer a comparative analyses of experiences of integrated supervision

⁷ See, for example, E Phillip Davis, "Portfolio Regulation of Life Insurance Companies and Private Pension Funds" (2001), *Financial Market Trends*, No. 80, October, pp. 133-189.

⁸ See André Laboul (1998) "The Financial Security of Private Pension Systems (Part II)", *Financial Market Trends*, No. 71, November, pp. 67-134.

system of regulation and supervision and a specialized one.⁹ The approach used indicates with a plus sign (+) the presumed advantage of a given approach in achieving a set objective. A (+/-) sign indicates ambiguity where neither approach seems to be better. Finally, a minus sign (-) indicates that the alternative approach would be better.

Table 2. Structure of Pension Supervision in Selected OECD + IOPS Member Countries

Specialized Pensions Supervisor	Semi-integrated Supervision	Integrated Supervision
	<i>At least pensions + insurance</i>	<i>Pensions, insurance, securities and possibly banks</i>
Chile	Belgium	Australia
Costa Rica	Finland	Austria
Hong Kong	France	Bulgaria
India	Jordan	Canada
Ireland	Luxembourg	Croatia
Italy	Portugal	Czech Republic
Japan	Spain	Denmark
Kenya	Turkey	Germany
Mexico	Zambia	Hungary
Nigeria		Iceland
United Kingdom		Israel
United States		Jamaica
		Kazakhstan
		Kosovo
		Korea
		Mauritius
		Namibia
		Netherlands
		Norway
		Pakistan
		Poland
		Slovak Republic
		South Africa
		Thailand
		Trinidad + Tobago

⁹ The three objectives of financial regulation and supervision are found in Llewellyn (1999).

Table 3. Efficiency and Efficacy of the Integrated and Specialized Approaches to Supervision in Meeting the Core Goals of Financial Regulation in Latin America

Issues	Objectives	Integrated Banking, Insurance and Securities		Integrated Banking, Insurance, Securities, and Pensions	
		Efficacy	Efficiency	Efficacy	Efficiency
Less Risk of Moral Hazard	Consumer Protection	+/-		+/-	
	Systemic Stability	+		+	
	Financial System Efficiency				
Less Chance of Regulatory Capture	Consumer Protection	+	+	+	+
	Systemic Stability				
	Financial System Efficiency				
Absence of 'Christmas Tree' Effect	Consumer Protection	+		+	
	Systemic Stability				
	Financial System Efficiency				
Less chance of a Bureaucratic Leviathan	Consumer Protection				
	Systemic Stability				
	Financial System Efficiency	+/-	+/-	-	-
Achieving Economies of Scale and Scope	Consumer Protection				
	Systemic Stability				
	Financial System Efficiency	+	+	+	+
Treatment of Financial Conglomerates	Consumer Protection	+	+	+	+
	Systemic Stability	+	+/-	+	+/-
	Financial System Efficiency	+	+	+	+
Greater Competitive Neutrality	Consumer Protection	+	+	+	+
	Systemic Stability	+/-	+	+/-	+
	Financial System Efficiency	+		+	
Greater Transparency and Accountability	Consumer Protection	+	+		
	Systemic Stability	+	+		
	Financial System Efficiency	+	+		

Source: Demaestri and Ferro (2004)

Based on this analysis, the only hazard of incorporating the pension agency into the integrated financial sector regulator and supervisor would be creating an agency that is so powerful that it becomes detached from the industry that it regulates (Bureaucratic Leviathan) with the associated loss of efficacy and efficiency in the pursuit of its objectives. The authors claim that the achievement of economies of scale, the treatment of financial conglomerates, the greater competitive neutrality, and greater transparency and accountability would all be enhanced by the incorporation of the pension regulator and supervisor into the integrated agency.¹⁰ The analysis is qualitative, however, and does not allow the expected gains derived from the incorporation of the pension regulator and supervisor into the integrated agency to actually be weighed against the anticipated loss generated by an agency that is too big and powerful, and therefore detached from its regulated industry.

The study by Demaestri and Ferro (2004) extends this analysis of the advantages and disadvantages of integrated supervision in Latin America by attempting to take into account the peculiarities of pension funds. They attempt to qualitatively review the importance of the following: (1) the regulatory objectives; (2) the legal status of pension funds; (3) the taxonomy of pension funds; and (4) the way in which pension funds are regulated (the regulatory and supervisory model used). This additional analysis is apparently undertaken to see if some of these considerations could change their vote of confidence on integrated structures. The study concludes that the integrated approach to financial supervision is better than the specialized one even if one considers aspects specific to the pension supervisor.

The case against integrating pensions

There is no literature specifically outlining the case against integrating pension supervision with other financial sectors. The arguments in the following section are therefore the authors' own and are drawn from a variety of sources.

In the particular case of pension supervision, the potential benefits of maintaining a specialized agency are related to the expertise that a specialized agency can provide in an area with unique risks, tax treatment, public guarantees, and deeper welfare implications than many other financial services. The particular characteristics of this financial service naturally limit the benefits and augment the hazards of integrating pension supervision with the rest of the financial system.

The case against integrating the supervision of pension funds with that of other financial sectors stems from the unique nature of pensions themselves – though it should be noted that how distinctive pension products and pension fund managing companies are depends on the nature of the pension system examined (for example pensions and insurance products are very similar in the German pension system). These arguably distinct characteristics include:

- the long-term nature of the contract involved, and the subsequent requirement for incentives or even compulsion to overcome individuals' 'myopia' towards long-term savings;
- their coverage of a wider social and economic range of the population than other savings products (particularly where incentives or compulsion are applied), meaning that vulnerable consumers, those with low incomes and often limited education levels, are involved;
- the fact that investors in pension funds often have a low risk tolerance, especially where private pensions represent subsistence rather than discretionary savings;

¹⁰ Demaestri and Ferro (2004).

- the complexity of these products, involving tax issues, assumptions over future salaries and longevity, difficulties in the valuation of assets and liabilities etc. – a complexity which is beyond the financial literacy of most investors and which gives rise to asymmetrical information between pension providers or financial intermediaries and consumers;
- the frequent involvement of employers and sometimes trade unions, and the possible relevance for supervisory purposes of some aspects of their agreements, such as the commitment to pay contributions to a certain pension fund;
- the large number of pension funds in some countries limits the extent of supervisory oversight, and means a greater dispersion of fiduciary talent and expertise in pension fund administration;
- the non-profit nature of pension funds in some countries, which may require different supervision to profit-making, commercial institutions;
- the ‘social’ as well as financial role of pensions, which is becoming more important as reforms in many countries have given an increasing role to private pensions – placing greater responsibility with individuals;
- the potential impact of pension assets on financial market and economic stability given their increasing size relative to financial markets and countries’ GDP makes it important for the economy as a whole that saving is at a stable and adequate level and that pension assets are invested wisely.

Social welfare considerations and extensive government involvement in the pension system make pension funds fundamentally different from other financial services. The assets in pension funds represent a greater portion of household wealth of the average participant than other types of financial assets, and reach more deeply through socio-economic strata than other types of financial intermediaries.¹¹ Preferential tax treatment for pension savings and explicit compensation guarantees make the government a major stakeholder in the pension system.¹² Furthermore, a major financial crisis that reduces the value of assets in pension funds could ultimately lead to budgetary assistance to the elderly as there are implicit guarantees for pension funds given the social implications of ensuring an adequate living standard for the workers who will receive a pension.

Pension funds do not suffer from systemic runs and/or bankruptcies. Nevertheless, a systemic crisis may temporarily affect pension funds through a reduction in the value of their assets. If defined benefits are offered, this process may cause financial stress for the pension plan sponsor, a private corporation, or the government. If the system is based on defined contributions the effect of a reduction in the pension funds assets would be borne primarily by those workers that reach retirement age at that point in time.

The specific requirements that must be met to ensure adequate consumer protection depend in part on the particularities of the pension industry. Pension funds must be supervised to ensure that they will be able to fulfill their obligations to retirees and that they will treat customers in a satisfactory manner. Information considerations are very important in pensions; the complex and long-term nature of the products creates asymmetries whereby the customer is less informed than the service provider. Regulation and strict supervision can force pension funds to disclose more comparative information on private pensions’ administrative charges and returns to compensate for this information problem.

¹¹ Rocha et al (1999).

¹² Ibid

These functions should be well aligned to enhance competition and to make it more effective. Given the growing share of total financial sector assets managed by the pension fund sector, protection for pension savings and savers is taking on added importance within the broader financial system.

The goal of consumer protection is particularly important in mandatory defined contribution pension systems. The pension regulatory and supervisory agency needs to protect millions of small savers, most of whom have low levels of financial literacy, and whose old age income will depend crucially on their pension. A further complication with mandatory contributions is the tendency for workers to become somewhat inattentive. In mandatory savings systems workers tend to perceive the mandatory deposits into their individual retirement accounts as a type of tax and, thus, pay little or no attention to the conditions of their individual retirement accounts. Furthermore, when they are young individuals tend to heavily discount distant time events, such as old age. As a result, consumers' demand usually has a low elasticity with respect to prices (administrative fees) and returns. Low price-elasticity of demand creates the conditions for generous mark-ups, unless there is a regulator and supervisor looking for ways to make the system more competitive.

In this sense, there is some overlap between the objectives of consumer protection and the efficiency of the pension system. If consumer protection emphasizes information disclosure in order to create a more competitive industry it will generate efficiency and lower costs for the consumer. The importance of the cost efficiency of the pension industry can make a large difference in the replacement rates that will be obtained for millions of individuals.

Systemic considerations have to be taken into account if the rest of the financial sector can be affected by pension funds' manager decisions during a financial downturn, given the relative size and importance of the pension fund sector. As traditional long-term investors, pension funds, like other institutional forms of saving, can serve as providers of liquidity and stability to the financial system as a whole. However, the sheer size of the sector in some economies means that there can be adverse effects on broader asset prices associated with the portfolio rebalancing activities of pension fund managers. The possibility of spillovers of this form means that efforts to preserve systemic stability should take into account the possible reaction of pension fund managers operating under stress scenarios, taking into consideration those regulations which could promote herd behavior in portfolio choice.

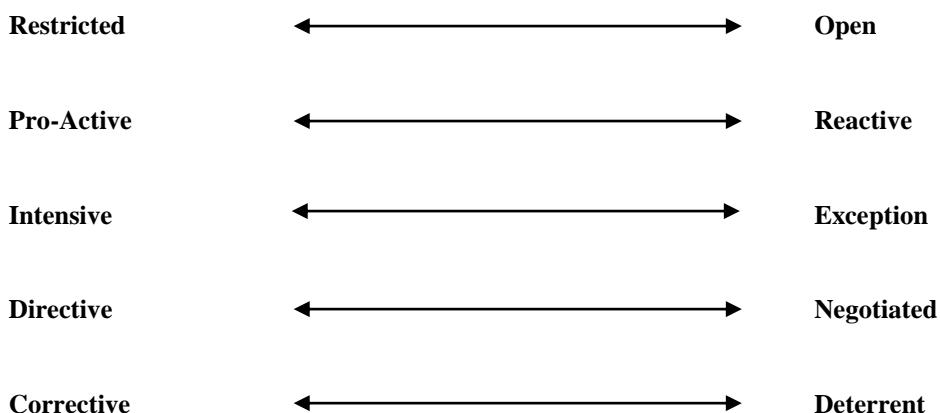
The specific nature and circumstances of pensions – particularly the high level of consumer protection required - may therefore be used to argue for a specialized supervisory approach. Though, as noted previously, the exceptionality of pension products and pension fund managing companies may not be appropriate arguments for some systems depending on their particular structure.

IV. Integrated vs. specialized – the answers depend on the context

In looking at the choice between integrated versus non-integrated structures, a distinction should be drawn between the organisational structure of supervisory agencies and the actual conduct of supervision. For pensions, the latter depends on the type of pension system being supervised, as well as on the level of financial market development achieved in each country. A wide heterogeneity of pension fund systems exists in the world today. More than 20 countries adopted defined contribution mandatory systems with special-purpose fund managing companies when they abandoned their PAYG defined-benefit public pension systems. Many industrialized countries still have their traditional defined benefit pensions as well as voluntary/mandatory occupational pensions, in which the financial assets are either held in trust funds or directly managed by banks and brokerage firms. As a result, most countries have co-existing public/private, personal/occupational as well as mandatory/voluntary pension regimes, some of which are defined benefit and some of which are defined contribution.

In spite of the heterogeneity of pension systems, certain ‘styles’ of pension supervision have been identified by analysts.¹³ Rather than being a choice between discrete alternatives, supervisory styles are considered to reflect a set of attributes that represent different positions along a spectrum. The two ends of the spectrum - represented by the Latin American approach at one end (where supervisors engage in intensive supervision, interacting with funds on a daily basis) and an Anglo-Saxon style at the other (where by supervisors interact with funds only on an exceptional basis, such as where problems are detected) – are discussed below. A third approach, part way along the spectrum, would be more usual in Continental Europe, for example.

Attributes of Supervisory Systems



Source: Hinz, Richard and Mataoanu, Anca, (May 2005)

‘Exceptional’ supervision is associated with countries that have more developed economies and capital markets, allowing supervisors to rely on market mechanisms for financial sector supervision and to enforce the integrity of financial intermediaries such as pension funds. The same logic applies where markets are open and many participants enter to provide advice, products or services to clients. In these markets, the intensity of the efforts of the supervisors typically face a capacity constraint and supervisors must rely on other methods to facilitate voluntary compliance with regulation. Economic development is also frequently linked to legal traditions which support this type of ‘market-based’ supervisory approach.

“Countries with higher levels of per capita income and financial market development are associated with stronger rule of law, governance institutions, voluntary pension systems and occupational sponsorship. These factors combine in a variety of ways that lead to supervisory systems that are more open, less pro-active and function in a less directive manner.” (Hinz 2005)

Given the reliance on market mechanisms and the oversight of many financial institutions, it could be argued that a more integrated supervisory structure is more appropriate for this type of supervisory approach and pension environment.

¹³

Rocha R., Hinz R. and J. Gutierrez et al (1998), Hinz, R. and A. Mataoanu (2005).

The opposite approach – involving more intensive supervision – is used in those countries that have reformed their public pension systems into mandatory defined contribution systems with open funds managed by a small number of specialized pension fund companies. This is the pension system that Chile created in 1982 and that ten Latin American countries currently have operating, albeit with some modifications. In this supervision model ex-ante licensing of pension managers and funds is extensive and sets the relationship for the on-going supervision that will be done. On-going monitoring and inspections are done both off-site, when asset composition is monitored in real time, taking pre-emptive action based on this information, and on-site, when verification of all records through general or special-purpose audits is carried out. There is usually a heavy emphasis on pre-emptive addressing of compliance issues (early intervention), which implies intensive and very frequent analysis.

“Mandated pension systems require a large number of typically unsophisticated members to engage in enforced savings through pension funds, usually with the underlying economic risk born by the participants. These types of arrangements can be expected to require higher levels of security and consequently a more pro-active, intense supervision.” (Hinz 2005)

Focusing on the Latin American pension systems, the following arguments have been mentioned in favor of a specialized regulatory and supervisory agency:¹⁴ (1) Participation is mandatory and the responsibility of the government is more important; (2) There are complex interactions between capital markets, insurance and social security in this type of system; (3) The adoption of this type of system introduces new retirement products which might have been previously unregulated; (4) There is a need to ensure transparency and efficiency (in places where regulatory enforcement has been low and the reliability record of the financial sector is weak). Furthermore, the Latin American model creates a new industry of specialized fund managers with competition issues (industry concentration, price dispersion in an industry with a homogeneous product, and low sensitivity of demand to administrative fees and returns).

In such a system it may therefore make sense to operate a specialized supervisory agency dealing specifically with pension funds and their challenges.

However, there are other ways to categorize pension supervision, for example based on the work-based pension environment. Such a method is described in the models outlined below (which are meant to be illustrative of broad frameworks rather than sharply delineated methods, with approaches combining elements from the different models also possible):

- *Government and policy-driven model:* In these systems the government has motivated and specified the development of the pension scheme so as to achieve wider sociological or economic objectives, even though the ultimate provider is within the private sector. In such systems there is a relatively low tolerance of risk, especially to the achievement of government objectives. The supervisor is expected to be very interventionist within a directive regulatory framework. The provision of pensions may well be very distinct from that of other financial services. The benefits of supervisory integration are likely to muted while those of having a separate supervisor are prone to be strengthened.
- *Employer-driven model* – in these systems pension provision is sponsored by the employer to achieve its objectives. The directors (trustees) of the pension entity are not financial services

¹⁴ Demarco, Rofman and Whitehouse (1998)

specialists but are accountable to the employer and its current or former employees, and hence can usually be expected to share supervisory objectives. Government policy involvement is limited to general encouragement through tax breaks and the creation of a regulatory and supervisory regime that provides basic safeguards in a way that (as intended at least) not to discourage provision. Consequently, there is a tendency towards a relatively high risk tolerance. The directors/trustees are assumed to be acceptable unless proven otherwise. This could be characterised as leading to an ‘exceptional’ approach – though this would vary according to the individual pension fund’s level of systematic risk (where this was seen to be above the risk tolerance level the supervisor may indeed be highly proactively). Because employers and lay trustees differ significantly from the types of people involved in other financial services, it is not straightforward to apply the supervisory approaches in other sectors to pensions and the merits of an integrated supervisory approach are somewhat muted. As with the intensive style of supervision, supervisors might be expected to be specialist.

- *Commercial-drive pension fund model* – in these systems the market drives the provision of work-based pensions by supplying employers with the ability to provide pensions, quite often with limited commitment by employers. The government may mandate that such provision is made available or leave the decision entirely to the market. In either case the pension product has many of the characteristics of a financial services product, subject to varying degrees of profit maximisation motivation and professional governance. These features are strongly consistent with the arguments in favour of integrated supervision, especially as there is much greater similarity within model between pensions and insurance.

When these three models are mapped onto the spectrum of styles, the government policy-drive and employer-driven model are at the two extremes, with the commercially-driven model midway. The arguments for specialised supervision are, therefore, strongest at the extremes and those for integrated supervision strongest in the middle. If there is indeed convergence towards a common ground characterised by commercial rather than agency relationships then a trend from specialised to integrated supervision may be expected (as has been the case in practice). For instance, as supervisors move from trusting in the motivation of the pension provider or directing their behaviour in detail, to a method focused more on enforceable standards of competence, governance and performance, the approaches used by supervisors of other financial services become more relevant and consistency of approach more important and efficient. It is, however, important to note that it is as much the supervisor’s attitude and methodology as the form of pension delivery that matters. For example, if not for profit trusts or foundations are expected to have similar standards to those that would be expected of commercial concerns – such as in the Netherlands or Australia - then the supervisory system tends toward the commercial model end of the spectrum. Yet in Italy the structure of non-profit, stand-alone pension funds, with trade union and employer involvement, has been seen as an argument in favour of specialized supervision. Finally, it should be noted that these are stylised models and that the pros and cons of specialisation and integration are not clear cut and depend on a much wider range of circumstances.

V. Conclusion

Those in favour of the establishment of integrated supervisory agencies suggest that such entities have a greater potential for delivering a consistent approach across a range of institutional types, including the different components of financial groups, than a collection of separate sector-based agencies. In some jurisdictions, arguments of this sort provided support for the combination of once separate sector-specific agencies into integrated, prudential supervisory authorities. But many other jurisdictions have opted to continue with an established system of functional regulation comprising

separate sectoral supervisory agencies. Supporters of sector-based structures of financial supervision argue that most financial services groups are not true conglomerates in the sense of having activities equally split between two or more sectors. Rather, most existing financial groups are characterised by a predominance of either the banking, or the insurance or the securities business, which is often reflected in the group's corporate culture, its governance and its risk management practices.¹⁵ Thus, it is argued that the "best" approach to supervision is 'specialised supervision', which would enable supervisory personnel to take into better account the specific features of each kind of institution for prudential oversight and conduct of business purposes and perceived differences in the risk profiles of service providers for the prevention of systemic risk.

Many of the same arguments can be applied to supervision of the pension fund sector. The conclusion of this paper is that the initial question it tried to ask – whether the pros of integrating pension supervision with other financial sectors outweigh the cons – could be argued to be irrelevant – or rather that there is no one single way to respond, as it depends on the context. In addition the benefits of specialization may be achieved via an integrated authority (through having a specialist pensions division within the agency). Indeed, in practice, while a supervisory agency may have an integrated structure, many have separate operational units which focus on particular types of institutions¹⁶. Likewise many of the benefits of integration may still be achieved by a specialist pension authority if strong communication links with other supervisory institutions are established. Some argue that an integrated structure makes the process of supervision easier in general and perhaps better in the case of smaller countries where it may be more difficult to find sufficient personnel with the necessary skill set to staff multiple agencies, but as noted before, integration alone is not a sufficient condition for effective and efficient supervision.

¹⁵ "Regulatory and market differences: issues and observations", (May 2006), The Joint Forum.

¹⁶ Examples of IOPS members with integrated financial authorities but where pensions and insurance are handled in separate departments include: Austria, Belgium, Bulgaria, Croatia, Hungary, Korea, Namibia, Poland, Portugal, South Africa, Thailand, Turkey.

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REPORT ON FORMS OF BENEFIT PAYMENT AT RETIREMENT

DRAFT REPORT – NOT TO BE QUOTED¹

1. Introduction

The growing importance of defined contribution (DC) pension plans has caused increased attention to be focused on the **forms of payment** that should be allowed and/or encouraged under such plans at retirement. Many of the newly created defined contribution pension systems (first in Latin America and more recently in Eastern Europe) have successfully launched the capital accumulation phase of their pension systems. Policymakers introducing these new systems have focused on this phase as the number of retirees (beneficiaries) is initially low, as older workers are often excluded from joining the new schemes. Attention has therefore been centred on getting the regulation and protection of the accumulation phase right and making sure the system is administratively efficient (which is vital when handling so many small accounts).

However, these new DC systems are still in the initial stage of the pensions decumulation or payout phase. For example, the first pensions under the new system will be paid out in Hungary from 2012 and in Poland from 2009. Yet a framework for how to transition between the accumulation and decumulation phases has yet to be outlined in detail, or even put in place at all, in several countries. Nonetheless, the decumulation phase is just as important if the new systems are to achieve their goal of providing efficient and effective retirement incomes: “the success of a new pension system depends on its ability to use whatever capital has been amassed at the end of the active life of covered workers to provide a reasonably sufficient regular income to them and their dependents.”² Pension supervisors need to handle the transition to the decumulation phase carefully to avoid beneficiaries making choices which could lock them into a suboptimal pension payout for the rest of their retirement.

This paper will attempt to address the basic question of “**what should be the main forms(s) of benefit payment at retirement?**” The advantages and disadvantages of each alternative will be identified in general international terms. The paper also will address the difficult question of **who should provide such “products”** (e.g. pension funds, insurance companies, other financial institutions or public authorities).

¹ This report is based substantially on an OECD paper prepared by Colin Pugh, FSA, FCIA, Consultant to the OECD, in connection with a separate project.

² E. James, D. Vittas, ‘*The Decumulation (Payout) Phase of Defined Contribution Pensions: Policy Issues and in the Provision of Annuities and Other Benefits*’, World Bank Policy Research Working Paper, 2464, 2000

2. Role of Life Annuities (and some problems)

In North America and Western Europe, the traditional forms of benefit payments from DC pension plans have been either a lump sum payment or some form of life annuity. In several of these countries, especially in Western Europe, the *only* permitted form had been an annuity, with a minority allowing the commutation of a relatively small part of the annuity for cash. This may reflect (1) a continuation of the philosophy of most traditional defined benefit (DB) plans of paying a lifetime pension, or it may simply reflect (2) a strong belief that the true role of a pension plan is to replace pre-retirement employment income with post-retirement pension income. The first consideration is not particularly relevant to this paper, but it is important to discuss the second (philosophical) consideration about the real role of occupational pension plans.

In other countries, there is similarly an active debate concerning the most appropriate forms of benefit payment at retirement – even in mature DC markets where little had changed for many years. Indeed, this issue is part of a larger debate that has been taking place in recent years around the fact that pure, conventional DC plans are not *the perfect solution* that many stakeholders, regulators and providers may have tried to claim. This is not to say that all conventional DC plans are inherently poor or inappropriate – indeed they will undeniably become the increasingly dominant form of retirement income provision in the majority of countries throughout the world. It simply confirms that there is no single perfect solution to providing adequate retirement income on a consistently effective basis. Much discussion thus is being focused on trying to address and improve some of the aspects of traditional DC plan design and regulation. As already mentioned, this paper will focus on one major subset of these issues – retirement payouts. The problems of the last few years have given us some valuable lessons in this regard.

Under the traditional DC *pension* approach, an employee approaching retirement is required to liquidate the assets that had been accumulated and invested on his/her behalf and immediately purchase a **life annuity** from an insurance company. This point-in-time sale of investments and point-in-time purchase of an annuity is fraught with problems. Indeed, there is a large amount of luck involved in having a retirement date that coincides with favorable investment market conditions *and* favorable annuity purchase rates³. Two people with identical careers and identical pension plan contributions can retire with amounts of *lifetime* retirement pensions that are substantially different, simply because their retirement dates were separated by a relatively short period of time. Nothing that happens after retirement can correct this apparent injustice.

Excellent investment and annuity markets lasted for about two decades in developed economies and thus tended to mask any potential problems. The honeymoon is over. Investment markets no longer provide favorable performance on a year-in-year-out basis. And, unattractive annuity purchase rates almost seem to have become a permanent fact of life.

What are the solutions? This paper will not directly address the investment issues during the accumulation phase prior to retirement or the changes in investment strategy that arguably should take place as a pension plan member approaches retirement. This paper briefly will discuss and identify alternatives to the point-in-time sale of such investments at retirement, but the main focus of the paper will be on the form(s) of payment that should be allowed or even encouraged upon and after retirement.

³ See for example Alier, M., Vittas, D., 'Personal Pension Plans and Stock Market Volatility', in Holzman R., J.E. Stiglitz (eds.), 'New Ideas about Old Age Security': Toward Sustainable Pension Systems in the 21st Century'

The potential problems of an immediate annuity purchase have already been identified, but the other traditional option - **a lump sum payment** - also can be far from ideal. Some of the concerns associated with lump sum payments will be discussed later. One of the many alternatives that have been identified and discussed is that of **programmed withdrawals, but** there are other alternatives.

It should be emphasized that this paper will focus exclusively on DC plans. Many of the issues are different for (DB) plans. It could be confusing and distracting to expand the scope of this short paper beyond such DC plans.

TABLE A – DEFINITIONS OF PAYMENT FORMS OTHER THAN ANNUITIES

Lump sum. A single payment.

Programmed withdrawals. A series of fixed or variable payments whereby the annuitant draws down a part of the accumulated capital (and continued investment earnings thereon). Each payment is often restricted to a maximum, e.g. the greater of the current investment income and the *equivalent* of an annuity based on *average* remaining life expectancy. However, it does not guarantee payments for life; there is no longevity insurance involved. If the annuitant lives to an advanced age, there is a clear possibility of the money being exhausted before death.

Scheduled withdrawals/income drawdowns (UK)/allocated annuities (Australia) → similar or identical to programmed withdrawals.

Programmed withdrawals followed by mandatory annuity conversion. Programmed withdrawals, but with the remaining capital being applied to purchase a life annuity (a) at a maximum age set by the government (e.g. within 10 years after retirement) or at any earlier date chosen by the annuitant or (b) at a relatively advanced age (see later discussions on “longevity insurance”).

3. Main Forms of Benefit Payment At Retirement

A very large number of different forms of benefit payment now is to be found, e.g. lump sums, programmed withdrawals and life annuities. There are several types of programmed withdrawals and many different types of annuities – most of which will be described. There are often specific national reasons for some of the less common forms of pension, for example several payment forms simply reflect concerns about the weaknesses of the traditional DC approach of paying lump sums and/or conventional life annuities, and the efforts of all stakeholders to resolve these concerns.

TABLE B – BASIC ANNUITY DEFINITIONS

Annuitant. The person covered by an annuity and who normally receives the payments.

Annuity. A stream of payments for a pre-established period of time. Payments can be weekly, monthly quarterly, etc...

- Immediate annuity. Payments start immediately.
- Deferred annuity. Payments start at a later date.

Annuity certain. A stream of payments for a fixed period of time, independent of whether the annuitant dies before the fixed period or is still alive at the end of the fixed period.

Life annuity/single life annuity. A stream of payments for as long as the annuitant lives.

Indexed annuity. Payments increase at a prescribed rate, whether fixed or variable.

Variable annuity (traditional definition). An annuity where the payments vary with the performance of market-sensitive investments. Normally, an annuity where the benefit varies according to the investment results of the funds set aside to provide it.

Variable annuity (second definition). Same as the traditional definition, except that the payment also varies with subsequent changes in the average life expectancy of the annuitant and his/her cohorts.

Temporary annuity. An annuity where the payments cease at the earlier of the annuitant's death and a fixed date (e.g. the annuitant's 65th birthday). This approach is often used under occupational pension (enterprise annuity) plans to provide a "bridging pension" from the employee's early retirement date until such time as social security benefits become payable.

Annuity rate/annuity conversion rate. The present value of the series of payments of unit value (e.g. \$1.00 or €1.00 or RMB 1.0).

Laddered annuities. Purchasing annuities in increments, to smooth annuity purchase rates.

Unisex annuity rates. Annuity rates that are the same for both men and women.

We will later identify some more complex forms of life annuity. These other forms attempt to address some of the concerns about conventional *single life* annuities, such as the needs of the retiree's spouse or a desire to guarantee at least a minimum level of aggregate payments in respect of someone who dies in the early years following retirement. The downside of these more complex annuities is that they are more expensive. In other words, for a given amount of accumulated capital in the employee's DC account, the amount of the starting pension will be lower.

International examples will be used throughout. Examples will be provided describing how the payout phase and/or annuity markets are structured in selected countries, and whether the country context affects the "products" that are permitted and the institutions that are allowed to provide them.

4. Lump Sum Payments – Pros and Cons

The most obvious advantage of lump sum payments, from the perspective of the plan sponsor and especially the plan administrator, is that they are so easy to operate. They do not require any complex calculations or even the active maintenance of plan records. The entire obligation of the pension plan (enterprise annuity) to the retiree is discharged at retirement. Ongoing contact with the retiree, who could even be an ex-employee who has not worked for the plan sponsor for many years, is unnecessary.

There are also several *potential* advantages to the retiring plan member. One purported advantage, especially applicable to early retirements in countries where the culture and economy are conducive, is the ability to invest part of the money to establish a personal company and thus continue some form of fulltime or part-time self-employment for several years thereafter. Another advantage is the immediate ability to liquidate significant debt, of which a house mortgage is usually the most significant, and thus be free of such financial burdens in the years following retirement. It also satisfies the "bequest motive", whereby any balance of the lump sum remaining at the retiree's death is payable to the estate and distributed accordingly to the individual's spouse, family and other beneficiaries.

More directly in the area of providing pension income after retirement, a major advantage of lump sum payments is the ability of retirees to “self-annuitize”, at a time and on a basis that best suits their financial needs. The retirees can replicate, or at least attempt to replicate, a system of scheduled withdrawals. This is more complex, and there is at least anecdotal evidence that such individuals generally do not manage such arrangements very well.

To be successful, the self-insurer should be able to choose an efficient and not excessively risky investment portfolio and to stick to a conservative withdrawal strategy. The risks entailed by a strategy of self-insurance should not be downplayed. Many people, including well-educated and intelligent people, have a lot of difficulty turning a stock of wealth into a sustainable flow of income. The standard test of this difficulty is to ask people how much money they will need at age 65 to sustain their current standard of living. Few people realize how small the rate of withdrawal has to be, regardless of the particular allocation of assets. Individuals still have a poor understanding of how long they will live and myopia is still present.

Retirees can still annuitize by using all or part of their accumulated capital to buy a conventional annuity from an insurance company, either at retirement or at some later date of their choosing. This would be their choice, rather than being mandated by law. The purchase date could be chosen when long term interest rates are relatively high and therefore – all other things being equal – annuity purchase rates would be more attractive. However, the flexibility to choose whether and when to purchase an annuity means that annuities purchased on this basis will almost inevitably be more expensive than annuity purchases mandated by law (see section 11 on anti-selection issues). In addition to doubts about the financial skills of individuals to self-annuitize, there is the wider and more general policy concern about individuals simply spending the money in an accelerated and reckless manner, thus exhausting their funds within a short period of time and thus failing to provide adequate longer term protection to themselves and their families. In countries where the government or social security comes to the aid of the very poor, generally through the payment of means-tested welfare payments, problems of moral hazard arise. Those who rapidly spend their retirement savings through excessive consumption eventually become a permanent burden of the state. This is hardly an appropriate reward for those other individuals who annuitize conventionally or who manage their capital in a responsible manner.

5. Programmed Withdrawals – Pros and Cons

As already defined in Table A, programmed withdrawals consist of a series of fixed or variable payments whereby the annuitant draws down a part of the accumulated capital (and continued investment earnings thereon). The key word here is “programmed”, thus implying considerably more discipline than the less structured erosion of a lump sum payment. Programmed withdrawals are more complicated to administer, but they are financially uncomplicated. They still do not involve longevity guarantees requiring the involvement of an insurance company or other third party or the more complex actuarial operation of the pension fund itself.

From the perspective of the retiree, programmed withdrawals are more constraining than a lump sum payment, but less constraining than purchasing a life annuity. And, in a similar manner to lump sum payments, programmed withdrawals satisfy the “bequest motive”, whereby any balance remaining at the retiree’s death is payable to the individual’s estate and distributed accordingly. An even more important advantage of programmed withdrawals is for the capital to continue to be invested in the pension fund and to earn a higher rate of return in expected terms than is assumed by an insurance company or other provider in setting life annuity purchase rates.

Many programmed or scheduled withdrawals attempt to replicate the duration of a life annuity, by setting a maximum limit on the amount that can be withdrawn each month. The limit often would be a function of the amount of remaining capital and the retiree's remaining life expectancy. In practice, the latter factor is more likely to be a function of the average remaining life expectancy of the retiree's cohorts (those of the same age and, where allowed, of the same sex).

Programmed withdrawals became a popular alternative to life annuities in times when long term bond yields were low and the corresponding price of life annuities was high. In countries where full or substantial annuitization at retirement was mandatory (e.g. developed pension markets in Anglo-Saxon countries), legislation was relaxed to avoid committing the retiree's capital to an annuity purchase in a volatile and perhaps uncertain annuity environment. Hence Programmed Withdrawals provide an outside option for retirees that face disadvantageous annuity market conditions to postpone annuitization but not retirement. New options included a deferred purchase of the annuity, based on the theory that annuity markets would eventually improve, and some relatively disciplined form of drawing down the capital. In countries that simply did not have a developed annuities market, or where the annuity market was even more volatile (e.g. several countries in Latin America), programmed withdrawals assumed an even greater importance. Some of these countries allow lump sum payments, but also allow (or even encourage) the option of programmed withdrawals. Programmed or scheduled withdrawals were an innovation in the Chilean pension reform of 1981, which has since been copied in other countries.

The main disadvantage of programmed withdrawals is the risk that the capital will be completely exhausted while the retiree is still alive. The amount and duration of programmed withdrawals are generally calculated on the basis of "average" life expectancies, so an individual retiree can easily outlive these averages. Even where the payments are recalculated each year based on the projected future life expectancy of the retiree and the declining group of his/her surviving cohorts, the capital to be re-spread can eventually decline to such a level that the re-spread periodic payments will be correspondingly unattractive.

A more complicated feature of programmed withdrawals is that, under most forms, whilst the monthly payment at the beginning is generally higher than under a conventional life annuity, the monthly payments can be very much lower in the later years. The amount of each payment can also fluctuate as a result of the volatility of pension fund returns. In other words, the individual is not covered against longevity risk and investment risk.

As a result of these various factors, there is again the possibility that the retiree will eventually become dependent on state means-tested or income-tested welfare payments, albeit without the clear moral hazard issues associated with lump sum payments.

6. (Life) Annuities – Pros and Cons

Under the traditional and most commonly found annuity approach, the plan member's DC accumulation is transferred at retirement to a life insurance company. In turn, the insurance company provides an annuity that, in its simplest (single life) annuity form, will make payments to the retiree for the rest of his/her life. These payments will be made on a regular basis, e.g. weekly, monthly or quarterly. Reference should be made to Table B for further clarifications. The retiring plan member normally would be allowed to choose the most competitive and appropriate insurance company to which the DC accumulation should be transferred. However, another disadvantage of annuities is their issuance cost.

One alternative to the insurance company approach is for the annuity obligation to stay in the pension fund, e.g. under closed DC pension funds in Brazil and under somewhat comparable arrangements in Denmark and Iceland. This provides an opportunity for the pension fund to earn profits by generating investment returns higher than those assumed by insurance companies in their pricing structures. Such profits then could be applied to increase the pensions in payment – a form of indexing. However, this approach also can present serious complications, as the pension fund becomes a *de facto* insurance company subject to actuarial reserving requirements. This in turn poses a problem for supervision and regulation, especially in countries without integrated supervisory authorities. Questions can then arise as to what actions to take when the annuity promises become unsustainable. This could arise if the subsequent investment performance of the pension fund is poor. More importantly, it exposes the pension fund to all the problems arising from retirees living longer than expected – the much publicized problem of *increasing longevity*. In a DC pension fund where the plan sponsors have completely fulfilled their obligations by making their required contributions in respect of active members, and when there is no third party supporting the annuity guarantees, the problems have to be addressed within the pension fund itself. The two most obvious approaches to addressing the problems then become (a) reducing future payments to the retirees and (b) taking away some of the investment earnings from the accounts of non-retired plan members. Clearly, neither of these options is particularly attractive.

Another alternative, which seems to be generating increased interest in a number of countries, is a form of state annuity fund. The government then would become the insurance company of choice. The state, and thus taxpayers, would become the ultimate guarantors of the solvency of the fund.

The obvious advantage of the annuity approach is that payments will be fixed and will be made for the entire lifetime of the retiree. This contrasts with the lump sum and programmed withdrawal approaches, where there is a clear risk of the retirement capital being exhausted during the retiree's lifetime – causing problems for both the retiree and family members. Also, the programmed withdrawal formulas set by the regulator in several countries lead to periodic payments that are higher at the beginning than those under life annuities, but which decline materially in the later years. For all of these reasons, the annuity approach tends to reduce the government's potential exposure to retirees subsequently becoming a burden of the state.

However, it is equally clear that the annuity approach involves the retiree foregoing future control over investments and losing the potential to earn superior investment returns. It also runs counter to the bequest motive, i.e. the desire to leave money to spouse and children. Some more expensive forms of annuity start to address this concern by providing residual payments to a designated survivor or to the retiree's estate, but they are not the perfect answer in this regard.

Finally, it should not be forgotten that the critically important guarantee of payments for the retiree's entire lifetime is only as good as the financial strength of the institution making such guarantees. Aggravated by declining investment returns and the problem of increasing longevity, the permanent solvency of such institutions cannot be taken for granted.

7. More Complex Forms of Life Annuities

Figure 1: Type of Annuity Products



There are several independent dimensions to classify annuity products (Figure 1):

Financing: Annuity products can be classified according to how they are financed. In this context, there are single-premium annuities, those funded by a single payment or lump-sum, and flexible-premium annuities, those intended to be funded by a series of periodic payments or contributions. This series of payments can be fixed or variable, depending on whether the contributions are a fixed or a variable amount.

Primary Purpose: Annuity products can also be classified according to their primary purpose into deferred and immediate annuities, as some annuity products are designed to facilitate accumulating resources over a certain period while the payment(s) is deferred, other annuity products are designed for immediate pay-out. Flexible annuities are only deferred.

Investment: There are fixed, equity-indexed and variable annuities depending on the underlying investment, that is, according to how annuity products create future value. Fixed annuities are more conservative while variable annuities are more financially aggressive. Fixed annuities guarantee the principal and a minimum rate of interest for a specific period while you are accumulating money and guarantee you a payout of a specific amount. Equity-indexed annuities are fixed annuities with an interest tied to one of the major stock indexes. Variable annuities are essentially fixed annuities wrapped around a group of mutual funds, called sub-accounts. Variable annuities give you the opportunity of participating in stock market returns.

Pay-out: Annuity products, according to the nature of the pay-out commitment, i.e. its duration, can be split into life annuities, that paid a stream of income for the entire life of the annuitant, fixed-

term or certain annuities, that paid a stream of income for a fixed amount of time, temporary annuities that paid a stream of income for the earlier of the two, and guarantee annuities that paid for the later of the two. The duration of the pay-outs is the more important feature in connection with longevity risk.

Providers: According to the providers, qualified annuity products are those where the provider during the accumulation and pay-out phases is the same (e.g. annuities as vehicles attached to certain retirement plans, such as 401(k)s or IRAs in the United States), while non-qualified annuity products are those when the provider in the pay-out phase is different.

Coverage: According to the number of people covered there are single life annuities and joint-and-survivor annuities.

Purchase: According to the way the annuity product is purchased there are individual or group annuities.

Others: There are other features that distinguish annuity products further, for example, whether the annuity product qualifies for tax advantages. Generally, most annuity products are tax deferred, *i.e.* the capital and investment proceeds are generally tax-exempted while the annuity payments are subject to income tax. Additionally, new annuity products address the problem of shorter life expectancy of people with impaired lives: enhanced and impaired annuities. There are also annuity products that protect you against inflation.

There are several reasons for the development of the more complex annuities to be discussed in this section. One is quite straightforward, which is to protect the retiree's spouse/partner after the death of the retiree. Traditional defined benefit (DB) pension plans have long provided their pension benefits in the form of joint and last survivor pensions that continue a percentage of the pension (usually 50% or 60%) to the survivor spouse for the rest of her/his life. This is often the mandatory, or at least default, form of pension for 'married' retirees. The same philosophy has been extended in several countries to DC plans. Where an annuity is purchased – by choice or because it is mandated – a joint and survivor annuity is one of the choices available. In Chile this is the mandatory option, since beneficiaries and the size of survivorship pensions are defined by law. Sometimes, it is the default form for married retirees, and a single life annuity only can be purchased with the written consent (sign-off) of the spouse.

The next two reasons are related. The first is the concern that, at least under a conventional single life annuity, the pension payments stop immediately upon the retiree's death. If the retiree only lives for a short period of time after retirement, the expenditure of a large amount of capital on the purchase of an annuity was an extremely poor investment! The second relates to the bequest motive. The individual's entire retirement capital has been transferred to an insurance company that invests the money for the aggregate support of its entire portfolio of annuity business, not for the individual account of each pensioner. This is indeed "insurance", where there are the inevitable winners and losers. The latter (the losers) are those who die in the early years of retirement – where, in contrast, a lump sum or programmed withdrawal approach would have seen substantial residual assets being passed on to the deceased retiree's family.

As a result of these very important concerns, and other concerns, a whole range of annuity choices have been developed. The following Table C identifies the most common forms.

TABLE C - MORE COMPLEX FORMS OF ANNUITY

- **Joint and (last) survivor annuity – J&LS.** An annuity payable for as long as the (primary) annuitant lives and thereafter for the lifetime of the named survivor or contingent annuity if still living (e.g. the annuitant's spouse). The amount of the payment may reduce on either the first death or the death of the primary annuitant.
- **Contingent annuity** → Joint and (last) survivor annuity.
- **Cash refund annuity.** An annuity with a lump sum payment made on the death of the annuitant equal to the excess (if any) of the annuity purchase price over the sum of the periodic pension payments already made up to the death of the annuitant.
- **Modified refund annuity.** An annuity with a lump sum payment made on the death of the annuitant equal to the excess (if any) of a pre-determined amount over the sum of the periodic payments made up to the death of the annuitant. It is sometimes found under a pension plan to which the employees contribute, where the 'pre-determined amount' is equal to an accumulation of the employee's own contributions.
- **(Life) Annuity with N year guarantee.** An annuity payable for the life of the annuitant, but with a minimum of N years' payments in any event. "N" is usually 5 years or 10 years. In other words, if the annuitant dies before N years of payments have been made, payments will continue to the annuitant's estate or dependents for the remaining balance of the N-year period. This is an approach used under contributory plans in Canada and elsewhere as an approximation to ensuring that the aggregate pension payments are at least equal to the employee's own accumulated contributions.
- **(Life) Annuity with N year period certain** → idem.

What distinguishes the different type of annuity products is the type of guarantees they provide. These guarantees determine the size of the risks involved in annuities – i.e. longevity risk, investment risk, interest rate risk and inflation risk. The different type of annuity products and their embedded guarantees will determine the magnitude of the impact of the different risks. For example, the impact of longevity risk will be larger for annuity products that are deferred (because the uncertainty surrounding future improvements in life expectancy have a longer period to work through), fixed (because the guarantee a fixed return independent of returns), life (because they are paid until the individual passes away), joint-and-survivor (because the life expectancy uncertainty is tied to more than one person), and for an individual instead of a group. The impact of investment risk is higher for annuity products that are fixed premium (contributions are fixed in advance), deferred (the period for the risks to work through is the longest), fixed (because they guarantee a return), and life. Inflation risk is larger for fixed premium, deferred, fixed, life and non-inflation indexed annuity products.

As all these forms of annuity have stronger guarantees than a single life guarantee, they are more expensive. In other words, for a given amount of capital accumulated in the retiring employee's DC account, the starting pension under any of these other forms will be lower. This is a particular problem for DC plans, as will be discussed in the next paragraph. In contrast, when enhanced forms of pension are paid under DB plans, they only rarely affect the retiree's starting pension. In the majority of DB plans, there is indeed a structural bias in favor of "married employees" (however defined). Only a small minority of countries (e.g. the Netherlands) have seen this as a problem and have taken legislative action to mandate the provision of pensions of equal value for single employees, i.e. higher starting pensions. One also can argue that there is a structural bias in DB plans in favor of

female plan members, as they will on average live some years longer than their male counterparts. This is most pronounced under single life annuities. This bias also is to be found in DC plans using unisex mortality tables.

The fundamental difference between DC and DB plans regarding these more complex forms of pension is that their costs are more transparent under DC plans, and it is the retiree (rather than the pension fund) who must absorb the extra costs. As already mentioned, for a given amount of accumulated capital, the starting pension will be lower – sometimes substantially lower. This presents the retiring plan member with a dilemma. Indeed, if there are no constraints imposed by legislation or by the plan rules, it will only be human nature for the individual to choose the higher starting pension. The sad plight of women in their later years, including the very large numbers of widows, is already well documented. Male retirees choosing single life pensions under the growing number of DC pension plans will just aggravate these types of problems.

8. Variable Annuities

The tradition type of variable annuity is one where the payments vary with the performance of market-sensitive investments, e.g. an annuity where the benefit varies according to the investment results of the funds set aside to provide it. One can conceptualize it as being similar to selling N units in a mutual fund each month, such that the pension fluctuates with the performance of the fund and the resultant progression of its unit values. But, it is also a traditional annuity in that it guarantees payments for the remainder of the annuitant's lifetime. This type of variable annuity has existed for decades in some countries, but this paper will instead focus on a more complex "variable annuity" now being actively debated.

The primary objective of this more complex type of annuity is to protect the insurance company or other annuity provider against longevity improvements that had not been anticipated in the original pricing structure or annuity conversion rate. Payments to the annuitants and their cohorts in future years are adjusted downwards to reflect changes in the average remaining life expectancy of this group of annuitants. Thus, they shift the longevity risk to annuitants. The disadvantages to the annuitants are obvious, namely that future reductions in their periodic payments are almost a certainty under this approach. There are a number of variations of this approach that can partially protect the annuitants from this downside risk.

One is to combine the two types of variable annuity just described. The so-called CREF annuity in the USA is one example of this approach. It does this by adjusting the value of units in the light of both investment performance and mortality risk. In other words, if the investment performance is more than good enough to offset the effects of increasing longevity, then the annuitant's pension could actually increase. However, poor investment performance combined with increasing longevity can have an even more disastrous effect on the level of payments to the annuitant. New financial instruments may allow the construction of annuities that have some modest upward potential whilst also *partially* protecting against downside risk (Bodie 1998).

Another approach uses as a base the old "participating" annuities sold for many decades by insurance companies in several countries, especially in Europe. Participating annuities have justifiably been receiving bad press in the UK in recent years, in some degree because they did not properly address the longevity issue. The basic concept is that the annuity purchase price will be calculated using a relatively low interest rate (e.g. in Belgium, where the rate is not allowed to exceed 3.75% and where several insurers use only 3.25% for all their insurance policies). Excess interest is earned each year by the insurance company and, in the absence of any constraints, a large portion of the excess

interest is credited to the various types of policyholders. However, in the case of annuities in payments, the excess interest would be an offset against the effects of further increases in longevity. The annuity payments would never decrease, because they are guaranteed by the insurance company, but unexciting investment performance combined with ongoing longevity problems could also mean that they will never increase either. Thus, the distinguishing feature between these participating annuities and variable annuities is that payments under the former can only stay unchanged or increase, whereas payments under the latter can both increase and decrease.

The problems with these more complex variable annuities are that they are far from transparent. Insurance products are especially subject to this accusation. As the basic intent is to shift post-retirement longevity risk to the pensioner, the annuitant needs to be careful about choosing this type. Viewed from another direction, however, this type of approach has many attractions when the annuities are being paid by a closed entity that is not an insurance company, e.g. the pension fund itself. It could also be an interesting approach for a State Annuity Fund, where a more communal approach may be more palatable to the annuitants and the general public. This would be especially true in regard to mandatory pensions. This is already the situation in Sweden, where annuities under the mandatory program must be purchased from the state-controlled Premium Pension Authority (PPM). The PPM offers both “traditional annuities” (fixed minimum periodic pension payments plus annual profit-sharing) and “fund annuities” (variable pension payments that depend on the performance of the underlying fund).

9. Longevity Insurance

This is another area that is receiving an increased amount of attention, although the market has hardly started to develop. It can be a particularly interesting approach for individuals who would prefer to control (self-annuitize) a very large portion of their retirement capital, but who also fear the financial effects of outliving these assets. In practice, longevity insurance should have attractions for almost everyone.

Longevity insurance is equivalent to the purchase *at retirement* of a deferred annuity, where the annuity payments will not start until a specified date well into the future. Depending on the age at retirement, the deferred period could be as long as 20–25 years. To be most effective, the deferred period should approximately equate to the average life expectancy of the annuitant. This is true “insurance”, as the deferred annuity policy has no surrender value, and nothing is payable in the event of the death of the insured during the deferral period. Only those who live beyond the deferred commencement date will collect the periodic payments, which will then be payable for the rest of the individual’s lifetime. Under these circumstances, the price of this longevity insurance is very reasonable, and its design is focused entirely on paying benefits to those who will need them. It is estimated that retirees only need to spend about 10%-15% of retirement capital on such longevity insurance, and they could then use programmed withdrawals or self-manage the remaining 85%-90%.

10. Inflation Protection

Another major risk which basic annuity products do not cover is that of inflation. The question therefore arises as to whether annuities be indexed to inflation, thereby protecting annuitants from changes in the price level and reducing the chance that they would require government assistance even with rising prices. However, purchasing such insurance can be expensive. Whilst avoiding large declines in real income during inflationary periods, indexed annuities reduce initial incomes for fixed annuities and may require the individual to forego the benefits accruing from equity investment in variable annuities.

Real annuities, which are widely used in Chile and are growing in popularity in the United Kingdom, provide protection against inflation but require the availability of index-linked government and other bonds. In the United States the recent issue of indexed treasury securities has yet to be reflected in a supply of real annuities.

11. Antiselection Issues

One of the main reasons for the perceived high price of annuities is the issue of asymmetric information. In the context of insurance in general and annuities in particular, this is also referred to as “anti-selection”. Potential purchasers of insurance policies know more about the state of their health than the underwriter (insurance company). For a conventional life insurance policy that pays a lump sum or survivor’s pension on the death of the policyholder, the problem for insurance companies is that individuals in poor health buy more death benefit (life) insurance. This can be addressed to some degree by requiring applicants to complete medical questionnaires or even to undergo a complete medical examination. The insurance premiums still will be calculated on the assumption of some degree of anti-selection on the part of the applicants, but it is possible to control the problem to some degree and to reject individuals or charge them higher premiums if they are in poor health. As regards annuities, the anti-selection comes from the other direction, and the challenges for the underwriter are more complicated. Individuals in extremely good health are much more likely to purchase annuities than those in poor health and thus financially anti-select against the insurance company.

The end result is that annuities are conservatively priced, as the insurance companies correctly include an allowance for better-than-average longevity experience among their policyholders. However, of course, this adds another layer of costs to the purchase of annuities and further discourages the average individual from choosing an annuity over other benefit payment forms.

There are several ways for addressing this problem of anti-selection. They include:

1. Making annuity purchases mandatory. In this manner, as everyone in the occupational pension universe must purchase an annuity, the anti-selection issue largely should disappear. Longevity will probably be better than the entire population, because it is confined to the working population, but it will otherwise include a comprehensive mix of those with below average, average and above average life expectancy. Mandatory annuitization is common in Western Europe and North America, but rare in other parts of the world.
2. Forcing the decision to choose a lump sum payment instead of an annuity to be made before retirement, e.g. at least three years before retirement. This does not totally eliminate anti-selection, but it can substantially reduce its effects. Several, old, traditional insurance policies include such a provision. Under insured occupational pension plans in Denmark, where lump sum payments and instalment withdrawals are allowed within limits, and annuities are the default, the choices must be made upon joining the plan.

12. Regulating Choice v. Encouraging Choice

There are many arguments both in favor of and against regulating choices regarding retirement benefit payouts. Complete agreement on the best approach is impossible, even within a single country. The debate becomes even more complicated across cultures and between countries with very

different social security and tax systems. This paper will restrict the debate to occupational DC pension plans – a complicated enough subject in itself.

One phenomenon needs to be identified from the beginning. Given the choice between a lump sum payment and other retirement payment options of equal (or even better) value, a substantial majority of individuals will choose the lump sum - figures as high as 96% have been seen in the USA. Thus, the analysis is not just about helping individuals with open minds to make the logical financial choices. There is also the need to counter the effects of **human nature**. Individuals simply do not start the decision process with open minds. They will favor the lump sum, even if it is not in their own best interests. Individuals for whom annuities would be the best choice will still resist making this decision. The need for effective education and communication (and even moral suasion?) is paramount. However, it is a fine line between moral suasion and “**paternalism**”. Under the latter, the government or the pension plan does not trust the retirees to make sensible decisions, and so these decisions are made for them. For example, annuities are mandated.

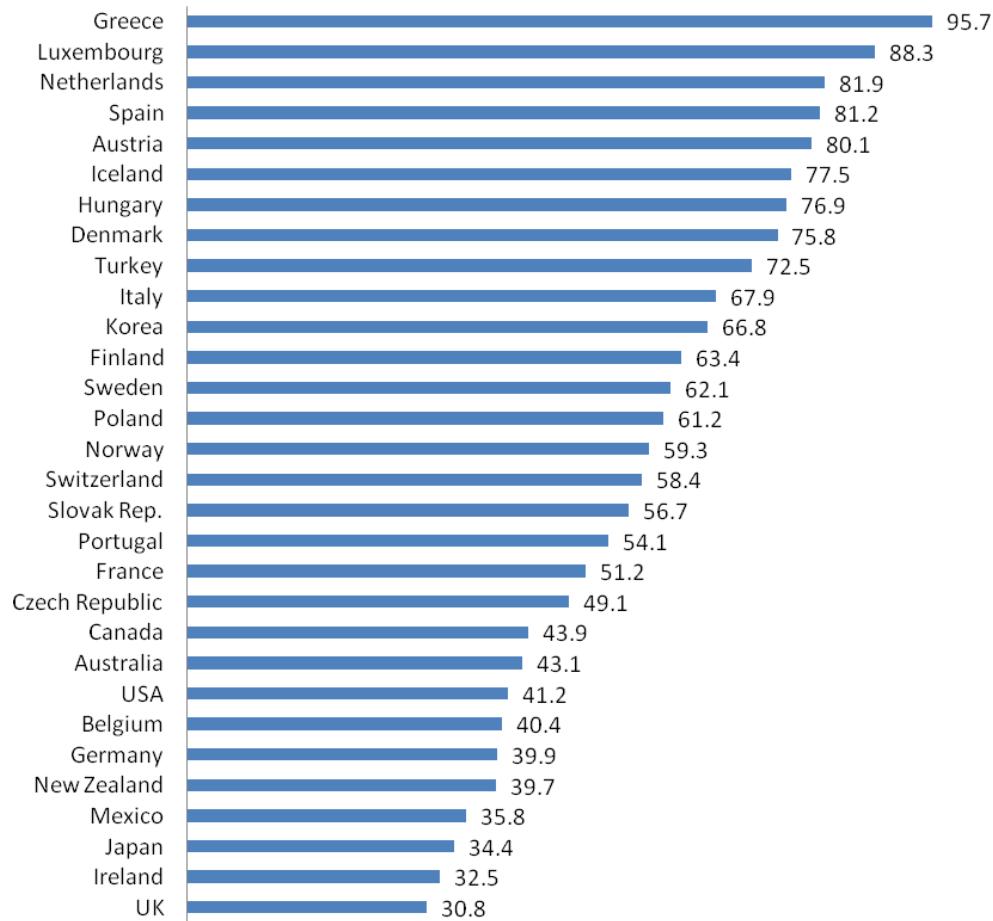
Thus, one basic argument for imposing restrictions and otherwise regulating choice is to protect some individuals, perhaps a significant portion of the population, against their own short-sightedness. This paternalistic approach can be further supported by evidence that the majority of individuals retiring from occupational pension plans simply do not have the financial expertise to self-annuitize, and do not have access to the necessary financial instruments and advice. This is a bigger problem in some countries than others. The USA would be one of the better prepared countries in this regard, even as compared with Western Europe, and the problems can be more severe elsewhere in the world.

From the government’s perspective, there are risks in allowing a full range of choices to retirees. This issue has already been discussed. Some people will spend their lump sums carelessly and too quickly and will eventually become a burden on the state. This is especially true in countries with government-supported guaranteed minimum incomes/pensions.

Setting aside all the human factors discussed above, it is easier to analyze the other reasons for and against allowing choice. This paper will only touch on some of these considerations.

In the context of regulating occupational pension plan payouts, one first needs to understand the **social security benefits** on top of which sit the occupational plan benefits. If the amounts of social security pensions payable to the retiree are sufficiently large to sustain at least a minimum standard of living, it is easier to argue that more flexibility could be allowed for supplementary benefits payable from occupational pension plans. Under this line of argument, lump sum and other options could be allowed when it is known that the retiree’s basic living costs will be covered by state social security pension payments. Viewed from a more defensive perspective, it is less likely under this scenario that the retiree subsequently will become a financial burden to the local, regional or central government through the requirement to pay means-tested welfare benefits. Although this philosophy seems sensible and is widely accepted in theory, it does not seem to be implemented in practice. There are a small number of countries, especially those where social security takes the form of a Provident Fund, where large portions of an individual’s retirement benefit accumulation can be taken in lump sum cash – although even these now require at least a minimum level of annuity purchase. In contrast, there are other countries where social security pensions are substantial, but where annuitization of occupational pension plan benefits is mandatory.

OECD Est. Gross Replacement Rate Mandatory Pensions, Average Earner 2007



Some countries argue that only lump sums and programmed withdrawals are practical, because **mature and well-regulated annuity markets** do not exist in their countries. On the surface, this would seem to be a solid argument. However, the example of Chile suggests that – where full or partial annuitization is mandated – the insurance industry will rise to the challenge. This still does not remove the requirement for the market to be well-regulated.

Another issue that receives substantial attention in the USA, and is also relevant in several other countries, is the probably need to set aside a reasonable large amount of cash to cover medical and other such **emergency costs in retirement**. This would argue in favor of allowing retirees to take lump sum payments. Here, logic seems to be applied more consistently. In Western Europe, where large out-of-pocket medical costs (in retirement or earlier in life) are hard to imagine, lump sum pension payments are generally discouraged, and vice-versa. Indeed, the Singapore Provident Fund makes a direct link between its retirement and medical coverages.

The role of **tax provisions** also must be taken into account. If the government wants to allow some choice, but it really favors one form of retirement payout over the others, then its tax code should be designed to nudge individuals in that direction. Where a country allows partial cash

commutations (e.g. the one-third rule in the UK) or full cash payments – and especially if the lump sum is given preferential tax treatment – it must be either because the government genuinely believes it is in everyone’s best interests to allow such lump sums or because of extremely poor planning on its part. *Equivalent* tax treatment of various forms can also be defended, but favorable tax treatment of forms of payment that the government does not want to encourage is a highly questionable approach!

Many countries compromise and allow a restricted number of choices. For example, a lump sum is only allowed *after* a certain amount of pension income has been annuitized, or a minimum overall replacement ratio has been achieved through a combination of social security and annuitized occupational pensions. “Replacement ratio”, in this context, generally refers to the ratio of individual’s aggregate retirement pensions to pre-retirement employment income. A replacement ratio of around 70% of final salary (perhaps to a salary cap) is often deemed desirable, and some of the stricter regulatory environments would not allow lump sum payments until after this pension level is achieved. Some would set the threshold much lower – around half of this level - and allow programmed withdrawals, perhaps coupled with the ability to withdraw extra money for medical and other emergencies.

13. PAYOR - Lump Sum and Instalment Payments

In the event the occupational DC pension plan only provides for lump sum payouts - or the retiring member elects a lump sum payment - the plan trustee or its representative (e.g. the administrator) or, in other countries, the pension fund management company normally would pay the benefit directly. It simply needs mechanisms in place to withhold and remit income and social security taxes (where applicable) and/or to report the payment to the relevant authorities.

In the event of programmed withdrawals, the administration is more complicated, but again the payments would normally be made directly from the pension fund to the retiree. The same is true for annuities certain, i.e. fixed payments for a fixed period of time.

Where choices are available – including the annuities to be discussed below – there also need to be facilities in place to assist the retirees in making the choices best suited to their circumstances.

14. PAYOR - Annuities

Here, life is far more complicated. It is perhaps for this reason that some countries choose to restrict payouts to lump sums and programmed withdrawals. But, if the only reason for not including annuities is defensive, one could argue that the situation is temporary and eventually will evolve to include annuities. There are so many positive reasons for encouraging annuities, including the governments own self-interest (i.e. avoiding moral hazard and focusing welfare payments on those men and especially women who never had the chance to accumulate a decent retirement income).

The first question to be addressed is whether a third party, normally an insurance company, is needed for the provision of annuities. Under this scenario, the retiring employee’s accumulated capital would be transferred from the pension fund to a third party. The pension fund’s obligation terminates at this point in time. Another alternative is for the pension fund to retain the funds and be responsible for the annuity payments. Although this is common under DB pension plans, where the plan sponsor is almost always available to finance any resulting shortfalls, it is a difficult approach to adopt for DC pension funds without any guarantor other than the fund itself. This point has already been discussed in Section 6. However, if insurance companies are not well regulated or the annuities market is not well developed, this may be the only option in the short term.

If one follows the conventional route and a third party will indeed assume responsibility for the annuities, the second question is whether these annuities should be provided by the private sector or a public source. Would one central provider be more efficient, through economies of scale, elimination of excessive marketing and distribution costs and commissions, and perhaps through alleviating the problems of anti-selection (see Section 11)? Alternatively, would competition between several private sector life insurance companies provide better annuity rates for the retirees? Conventional life insurance companies have some natural advantages in supplying annuity products, being able to derive economies of scale from their overall life insurance business and from their strong internal actuarial and administrative skills and experience.

In many countries, the insurance company already is involved in the pre-retirement accumulation phase, so it would seem a natural progression for it to be involved in the annuity (decumulation) phase. One lesson to be learned in this regard is that retiring plan members must *not* be restricted to purchasing their annuities from that same insurance company. This has been the source of some abuse in the past. The retiring members must be able to “shop around” in the market for the best annuity rate. If a better rate can be found elsewhere, the funds should be transferred without additional charge to the other insurer Systems for comparing annuity prices have been set up, notably the SCOMP⁴ system in Chile.

The SCOMP system is designed to advance the quality of information provided to customers as well as to permit them to access directly a full range of annuity quotations, and operates via the following steps:

- i. The retiring member goes to his/her AFP and initiates procedures for a pension. The AFP sends the member’s balance certificate with personal data to the SCOMP system;
- ii. The member selects a participant in SCOMP to solicit quotations. Participants include AFPs, brokers and life insurance companies;
- iii. The member sends a request for annuity quotes, with or without the assistance of brokers or sales agents. Members can make up to three separate requests for each certificate issued by his / her APF;
- iv. The central information system validates the personal information of the member (e.g. age, sex, eligibility, balance), assigns a code and sends the information with the request to life insurance companies;
- v. The life companies send their annuity quotes, while the SCOMP itself calculates programmed withdrawal payments, which are regulated;
- vi. SCOMP send the programmed withdrawal and annuity quotes to the member. The quotes are valid for 15 days;
- vii. The member must either accept one of the offers, or accept another offer made outside SCOMP. Alternatively the member can request bids from at least three companies (an auction) and accept the best offer, or simply decide not to retire.

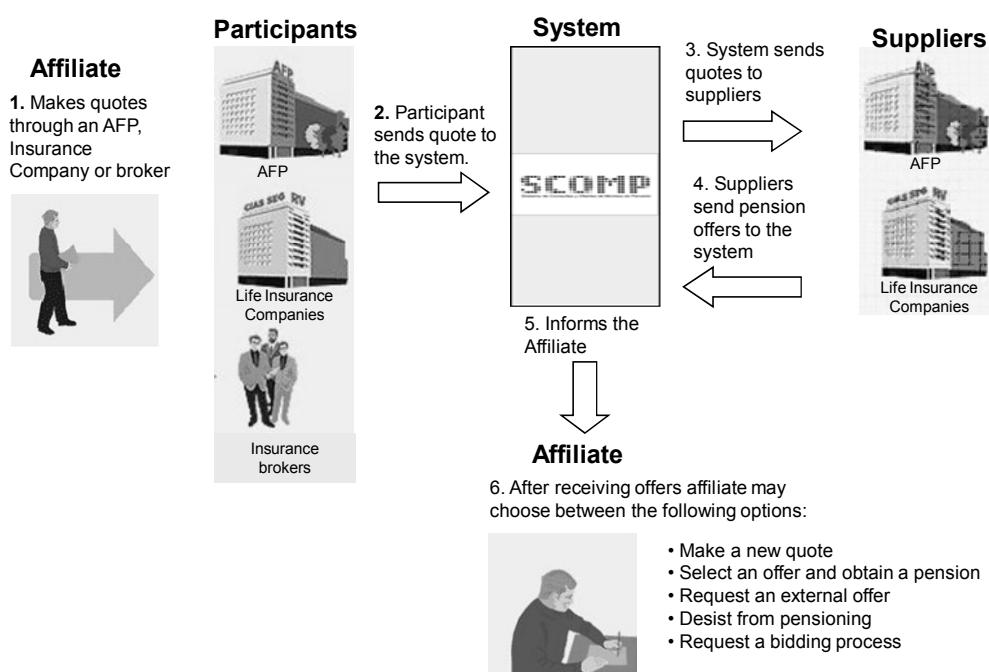
⁴ Description of the SCOMP (Sistema de Consultas y Ofertas de Montos de Pensión) taken from R, Rocha, C. Thorburn, ‘Developing Annuities Markets : Experience of Chile’, World Bank 2007

The SCOMP: electronic market for annuities

The SCOMP

Electronic market for annuities: Closed market for companies allowed to sell annuities or programmed withdrawals (6 AFP, 23 LIC, 751 brokers)	Blind system: All companies receive relevant data of a potential pensioner and voluntarily make offers	Allow each individual to obtain, at no cost, all relevant offers of annuities or PW for her.	Several possibilities: Bargain (offer must exceed minimum offered in SCOMP) Auction
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What does SCOMP do?



Initial data suggests that the system is working well and transparency has been improved. Although only a small percentage of participants has used to option to request bids from annuity providers, the final selection of provider implies that price competition has improved. Brokers commissions have also been reduced and market concentration has resulted. A comparative system, known as the OMO has also been developed in the UK, hoping to encourage more people to switch provider on annuitization (only around 30% currently do so). Problems identified with switching include inertia, lack of awareness, complexity of forms, time delays in making transfers, lack of alternative quotes, the gain ‘not looking big enough’ (i.e. a lack of understanding), or (on a more positive if not entirely economically rational note) wishing to stay with the company one has built a good relationship with. The UK government is working to improve the OMO system which provides alternative annuity quotes. For example a more structured approach to annuity purchase is being considered. One stage will involve the individual deciding what type of annuity best suits their needs (aided by suitable information and guidance), with the following stage allowing the consumer to then choose the provider which offers the best deal on this type of product, with the help of comparative tables provided by the financial sector regulator. In both OECD and middle income countries, life insurance companies typically are the sole providers of annuities. However, in some well developed annuities markets, the number of insurance companies interested in selling annuities has fallen dramatically in recent years. This is not just because many life insurance companies now prefer to focus more on purely financial products and less on “insurance”, but also because annuity business can be particularly unprofitable (low investment returns and increasing longevity, coupled with high reserving requirements). This reduction in private sector competition quickly can lead to further increases in annuity rates. At least one country, Ireland, is now giving serious consideration to the alternative of a state annuity fund. Another alternative being discussed is the creation of separate financial institutions that focus entirely on retirement annuities. This is already the case in Argentina, for example.

14. International Practice

This paper simply highlights some of the main issues and attempt to find any natural and logical groupings in this regard. It will attempt to answer the questions:

- “How are the payout phase and annuity markets structured in different countries?”; and
- “How does the country context affect what products should be allowed and which parties should provide them?”

As has already been discussed in preceding sections, logic does not always prevail in dictating the balance between, for example, lump sums and pensions. Countries with high social security pension benefits still insist on occupational pension plan benefits also being taken in the form of life annuities. In contrast, countries with virtually no social security pension benefits allow (mandatory or voluntary) occupational plan benefits to be taken as lump sums. Thus, there must be other considerations that drive the scenario in many countries.

Setting aside purely political pressures and considerations – still a consideration even in some advanced economies – there are at least a couple of major reasons to explain differences. One reason has already been mentioned several times, namely that some markets are not well developed or well regulated, with the result that the financial institutions are not yet ready to provide efficient and reliable services in certain areas (e.g. the provision of annuities). Another reason revolves around issues of culture. In a related matter – although this is again where logic seems to break down – individuals in some countries are better educated and have more experience in managing their own financial affairs. In theory, these people should be allowed more flexibility, especially as regards lump sums and self-annuitization. In practice, the correlation breaks down.

The following are general summaries about legal constraints and customary practices regarding occupational DC pension plans (enterprise annuities). These summaries do not pretend to be comprehensive. Minor features are ignored, e.g. the option in several countries to take a lump sum payment when the accumulated funds are below a certain amount or are too small to buy a viable amount of pension. Also ignored are the treatment of additional voluntary contributions (AVCs) that employees in some countries can make in addition to their required contributions and personal (third pillar) arrangements.

Countries without any material occupational DC plans are excluded from the following analysis. In order to avoid presenting an excess of information, smaller countries and African countries, even those with occupational DC plans, also have been excluded from the analysis.

When references are made to social security benefit levels in various countries, and where a country has undertaken structural social security reform, only the new program is referenced. These references to social security are only an attempt to find a link between the level of social security retirement benefits and the flexibility allowed with respect to retirement payout options under mandatory or voluntary occupational DC plans that supplement social security. The latter plans are the subject of this paper. Thus, the payment options described below relate to these supplementary plans and not to the underlying social security programs.

TABLE D – PAYOUT SYSTEM VS. SOCIAL SECURITY SYSTEM

	Countries with no social security in retirement other than mandatory DC plan	Countries with low/modest social security retirement benefits	Countries with average social security retirement pensions	Countries with relatively high social security retirement pensions
Lump sum only	<i>Hong Kong</i> – mandatory provident fund	<i>India</i> – mandatory provident fund	<i>Czech Republic</i> <i>Thailand</i> – voluntary provident fund	<i>Luxembourg</i> - SEPCAV
Programmed withdrawals only	<i>No countries</i>	<i>No countries</i>	<i>No countries</i>	<i>No countries</i>
Lump sum + programmed withdrawals	<i>Malaysia</i> - provident fund		<i>China- EAs</i>	
Annuities only	<i>Colombia</i> – mandatory DC for those electing not to participate in DB social security <i>Hungary</i> - mandatory Pension Fund for those not electing, or not eligible for, old DB social security		<i>Brazil</i> – open and closed funds <i>Bulgaria</i> – mandatory 2 nd pillar <i>France</i> – mandatory Agric, Arrco <i>Germany</i> – depending on financing vehicle <i>Netherlands</i>	<i>Austria</i> <i>Poland</i>

	Countries with no social security in retirement other than mandatory DC plan	Countries with low/modest social security retirement benefits	Countries with average social security retirement pensions	Countries with relatively high social security retirement pensions
			<p>Poland</p> <p>Russia – funded DC part of social security (annuity retained within fund)</p>	
Life Annuities with partial lump sum		<p>Indonesia – up to 20% can be received in the form of a lump sum cash payment</p> <p>South Africa -up to 1/3 can be received in the form of a lump sum cash payment</p>	<p>Ireland – up to 1/3 can be received in the form of a lump sum cash payment, with the balance used to purchase an annuity – immediate or delayed purchase</p> <p>Italy - up to 1/3 can be paid in cash on a tax effective basis, or up to $\frac{1}{2}$ on a less favourable basis, with the balance used to purchase an annuity – immediate or delayed purchase</p> <p>Portugal – up to 1/3 can received in the form of a lump sum cash payment</p> <p>UK- up to 1/3 can be received in the form of a lump sum cash payment, with the balance used to purchase an annuity – immediate or deferred purchase</p>	

	Countries with no social security in retirement other than mandatory DC plan	Countries with low/modest social security retirement benefits	Countries with average social security retirement pensions	Countries with relatively high social security retirement pensions
		<i>Belgium</i>	<i>USA</i> – lump sums dominate	<i>Belgium</i> <i>Japan</i> <i>Spain</i>
Annuity or programmed withdrawals		<p><i>Chile</i>⁵ – mandatory programmes replacing or supplementing social security</p> <p><i>Costa Rica</i> – mandatory programmes replacing or supplementing social security</p> <p><i>Mexico</i> - mandatory programmes replacing or supplementing social security</p> <p><i>Peru</i> - mandatory programmes replacing or supplementing social security</p>	<i>Russia</i> – non-state funds <i>Canada- DC</i>	
Complete range of options	<i>Singapore</i> – provident fund ⁶	<i>Australia</i> – mandatory plan	<i>Denmark</i> – DC plans with insurance companies	

16. Conclusions

As already mentioned, and as can be seen from the international comparisons provided above, it is not easy to find logical groupings of different types of approach. However, some conclusions are quite clear, namely:

1. Aside from the ex-British provident funds still found in Asia, a surprisingly small number of countries allow a full lump sum payment.
2. A large number of countries require the retirement benefit to be paid as a life annuity or only allow the choice between a life annuity and a series of programmed withdrawals that attempt to reproduce a form of life annuity.

⁵ In Chile lump sums are also permitted if funds allow to obtain a pension equivalent to at least 70% replacement rate and 150% of minimum pension.

⁶ Except that a minimum lump sum cannot be taken in cash and must be withdrawn in instalments or used to purchase an annuity

PRIVATE PENSION SYSTEM: DEVELOPMENTS AND ISSUES CONFERENCE PROCEEDINGS OF THE OECD/IOPS GLOBAL PRIVATE PENSIONS FORUM

Global Private Pensions Forum Beijing, November 2007

Organised in Beijing, China, the OECD/IOPS Global Forum on Private Pensions covered a wide range of topics which are of importance to both countries that either have mature and developed funded pension systems and countries that have only recently undertaken pension reforms. The issues were also of relevance for the current developments in the Chinese pension system. Topics covered were, (1) Pension Investments and Capital Market Development; (2) The Impact of Incentives on Pensions and Insurance Product; 3) Pensions Supervisory Structures; (4) Annuities – Provisions and Risks.

The OECD/IOPS Global Forum on Private Pensions was held on 14-15 November 2007. This event was co-organised and co-sponsored by the China Insurance Regulatory Commission (CIRC). The OECD/IOPS Global Forum, being a part of the OECD programme of co-operation with non-member economies, was organised under aegis of the OECD Working Party on Private Pensions, with sponsorship by the Government of Japan and support from the IOPS.

The papers collected in this publication were presented at the event.