



11th Regional Pension & Social Insurance Conference



Public Service Retirement Systems Sustainability, Convergence, Flexibility

Yves Guérard
Secretary General
International Actuarial Association



Grand Hyatt Hotel, Amman, Jordan

May 29th – 31st, 2007

Agenda

- ◆ **The dimension of public sector plans**
- ◆ **Parallel or integrated?**
- ◆ **Benefit design is key**
- ◆ **Proper reporting of cost is essential**
- ◆ **How to compare**
- ◆ **Need for transparency**
- ◆ **What funding means?**
- ◆ **Ageing, the new frontier**
- ◆ **The pendulum swings to DC**
- ◆ **The wider picture**



Public pensions are immense

- ◆ **In USA alone, State and local Government pensions comprise 13 million employees and 6 million retirees and beneficiaries**
 - More than the population of most countries in the United Nations
- ◆ **In many countries Civil Service pensions predate other occupational programs as well as national public systems**
 - Pre-existing Civil service schemes often remained outside national public systems
- ◆ **Complex interaction between state and local executives, legislatures and competing special interests**
 - Key stakeholders: public employees and other taxpayers
 - Interested parties: formal sector employers and employees



Rationale for Civil service pensions

- ◆ **Securing the independence of Civil servants**
- ◆ **Making a career in public service attractive**
- ◆ **Shifting the cost of remuneration in the future**
- ◆ **Retiring older Civil servants in a politically and socially acceptable way**
 - **Some schemes are non-contributory with the assumption that wage levels reflect an implicit Civil servants contribution**
 - **The regime applicable to public employees, whether parallel or integrated, impacts on the private sector and on the whole national economy, in particular on effective retirement age**

Attracting and retaining capacity in an ageing society is replacing sustainability as the main driver for plan design



Types of programs

- ◆ **Social protection programs**
- ◆ **National Public Schemes**
 - **Civil Service Schemes (integrated)**
- ◆ **Occupational Schemes**
 - **Civil Service Schemes (parallel)**
- ◆ **Individual retirement savings**

Key policy issues are harmonization of coverage with private labor force and flexibility for a career encompassing both private and public sector employment



National Public Schemes

- ◆ Can be universal schemes limited to basic Social pensions
- ◆ More frequently refers to earnings related programs that can be DB but now more frequently DC or NDC covering a large proportion of the work force
 - May be limited to participating formal work force
 - May exclude public sector employees: civil servants, Army, Judges, members of Parliament, Government Officials
- ◆ Post-retirement benefit can be
 - Uniform pension amount related to national average earnings targeting **poverty alleviation**
 - Earnings related pensions to replace a proportion of pre-retirement income and maintain **individual Standard of living**
- ◆ Focused on life pensions as opposed to lumps sums except for some older Provident Funds where longevity risks remain with the individuals



Occupational Pension Schemes

- ◆ **Employment related pension programs complementing social protection or national public schemes**
 - normally fully funded, registered and supervised, with preferential tax treatment (EET)
- ◆ **Cover employees of one Employer or related Employers; can be DB or DC, or combination or hybrid**
- ◆ **Some multi-employer plans are negotiated on an industry basis or for members of a professional association**
- ◆ **Some provide for additional voluntary individual contributions or option levels**
- ◆ **Civil service pension programs are occupational plans that can enjoy more flexible financing because Employer is a sovereign entity**

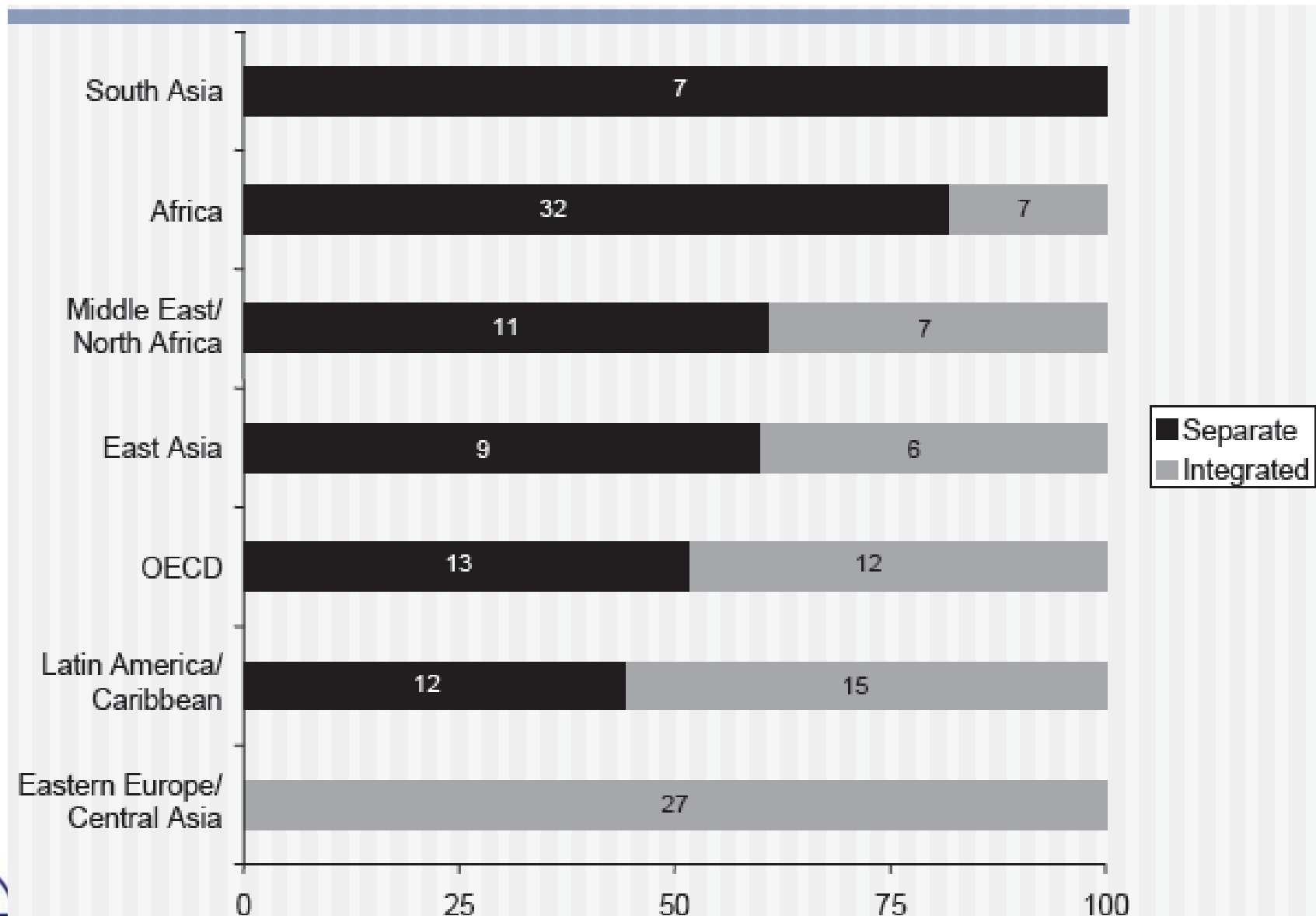


Parallel schemes or one integrated system?

- ◆ Occupational schemes generally predated national public schemes and Civil Servants schemes were often the first to be created
- ◆ When mandatory schemes were extended to private sector
 - Some saw little point in covering Civil Servants that already had their own arrangements
 - Civil Servants also powerful in protecting their own interests
 - Need to accommodate HR policy of Government as Employer
 - Civil Servants scheme too expensive if extended to whole population
- ◆ Intermediate solution when National scheme is a core program:
 - Civil Servants participate in national core program but there is a complementary occupational program for Civil Servants to comply with HR policy and provide appropriate level of benefits



Distribution of CS schemes 2006



Partial integration

- ◆ **At least in OECD area most programs reported as integrated are in fact**
 - **Integrated up to the national scheme level of benefit**
 - **Providing complementary top up benefits that make total benefits comparable to non integrated program**
- ◆ **Lets illustrate with Canada**
 - **Civil servants are covered by the Canada Pension Plan providing a pension of up to 25% of average industrial wages**
 - **Pro-rating that pension over a 35 year career correspond to 0,7% of earnings up to average per year of service**
 - **Top-up program provides 2% of earnings per year minus 0,7% of earnings up to average for a maximum of 35 years of service**
 - **Thus total pension is about 2% of total earnings per year of service up to 70%**



| <i>OECD</i> | <i>Latin America</i> | <i>East Asia</i> | <i>South Asia</i> | <i>Middle East</i> | <i>Africa</i> |
|-------------|----------------------|------------------|-------------------|--------------------|---------------|
| Austria | Brazil | China | Bangladesh* | Bahrain | Benin |
| Belgium | Colombia | Indonesia | Bhutan* | Cyprus | Botswana* |
| Finland | Guatemala | Korea | India | Djibouti | Burkina Faso |
| France | Haiti | Laos | Maldives* | Iran | Burundi |
| Germany | Honduras | Malaysia | Nepal | Kuwait | Cameroon |
| Greece | Jamaica | PNG | Pakistan | Morocco | Cape Verde |
| Luxembourg | Mexico | Philippines | Sri Lanka | Saudi Arabia | Chad |
| Netherlands | Panama | Solomon Isl | | Syria | Congo |
| Portugal | Paraguay | Thailand | | Tunisia | Cote D'Ivoire |
| | Suriname | | | Turkey | Eritrea* |
| | Trinidad | | | Yemen | Ethiopia* |
| | Venezuela | | | | Gabon |
| | | | | | Gambia |
| | | | | | Kenya |
| | | | | | Madagascar |
| | | | | | Malawi* |
| | | | | | Mali |
| | | | | Senegal | Mauritania |
| | | | | Sierra Leone | Mauritius |
| | | | | South Africa | Mozambique |
| | | | | Sudan | Namibia* |
| | | | | Swaziland | Niger |
| | | | | Togo | Nigeria |
| | | | | Uganda | |
| | | | | Zaire | |
| | | | | Zambia | |

Source : Palacios and Whitehouse, May 2006



Portability/reciprocity with National Scheme (in parallel schemes)

Table 10: Portability and preservation of pension rights

| <i>Treatment</i> | <i>Country</i> | <i>Details</i> |
|-------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------|
| Full transferability | Finland Sweden Netherlands | Workers transfer to private-sector mandatory (or quasi-mandatory) occupational plans with similar benefits |
| Full preservation | France | Workers' accrued rights are indexed in line with civil service pay between leaving and retirement |
| Partial preservation | United Kingdom | Workers' accrued rights are indexed in line with prices between leaving and retirement |
| Deferral without preservation | Hong Kong Mauritius | Workers' accrued rights are frozen in nominal terms |
| Loss of privilege | Germany Cape Verde | Workers lose civil service pension rights but are credited with rights in national scheme |

Source : Palacios and Whitehouse, May 2006



Key considerations

- ◆ **Costs depend on the pension promise, that is the design, not on the financing method; funding does not change the costs but only the allocation of contributions to different years**
- ◆ **Benefits design can be based on DB, DC or other formula and drives both the costs and the risks**
- ◆ **The retirement age is a key cost driver but aging impacts the economy as well as the pension plan**
- ◆ **Knowing the true cost is more important than the financing method thus proper reporting of pension expenditure is a priority**
- ◆ **Comparisons across countries even in % of GDP are only partially valid due to differences in accounting and reporting as well as in relative size of Civil service**



Weight of Civil Service

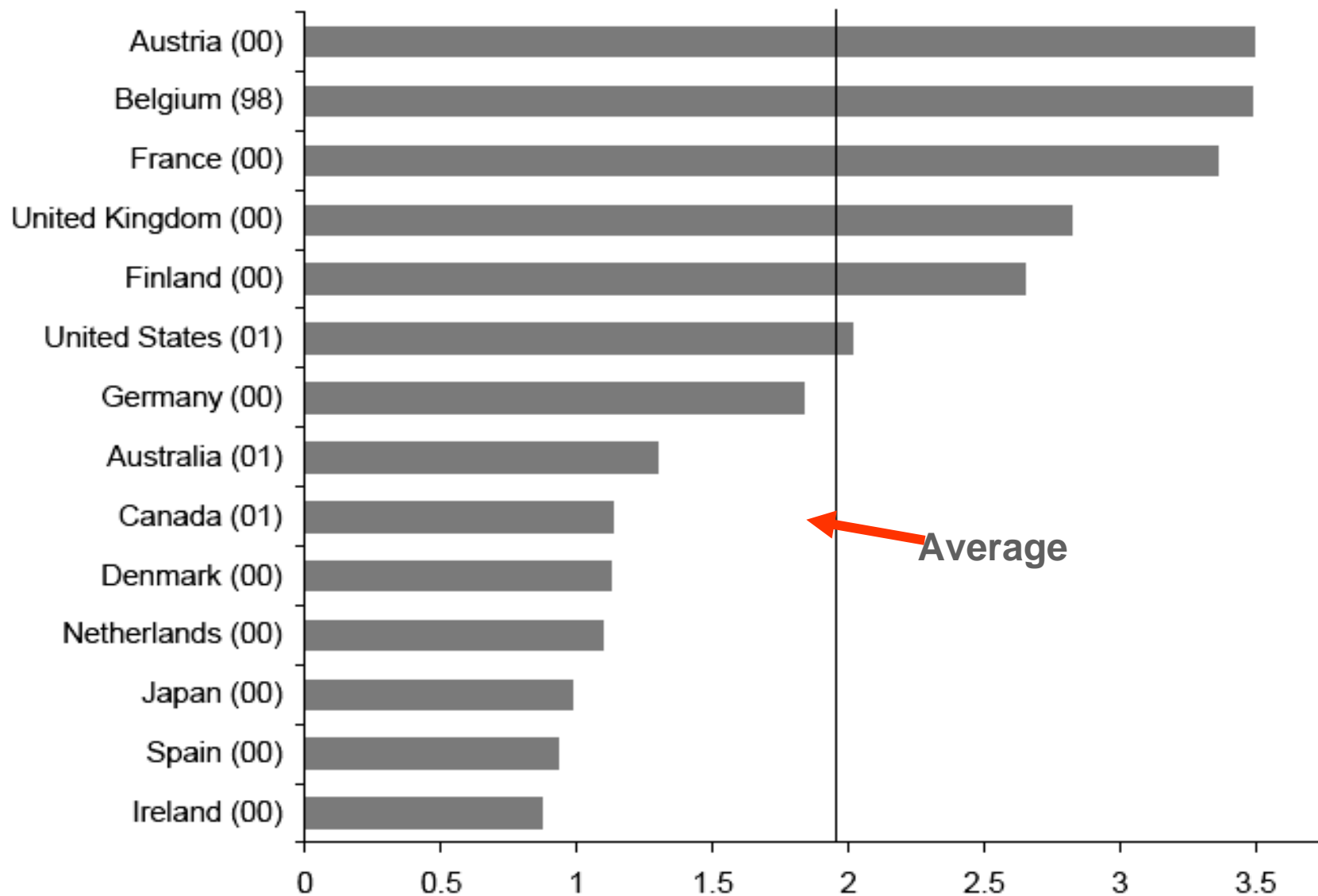
**Table 5: Central government employment, 1980s and 1990s
(per cent of total population)**

| | early 1980s | early 1990s |
|--------------------------|-------------|-------------|
| Africa | 1.8 | 1.1 |
| Asia | 2.6 | 1.1 |
| Latin America | 2.4 | 1.5 |
| All developing countries | 2.2 | 1.2 |
| OECD | 2.9 | 1.9 |

Source: Heller and Tait (1983) and Schiavo-Campo, de Tommaso and Mukherjee (1997*b*)



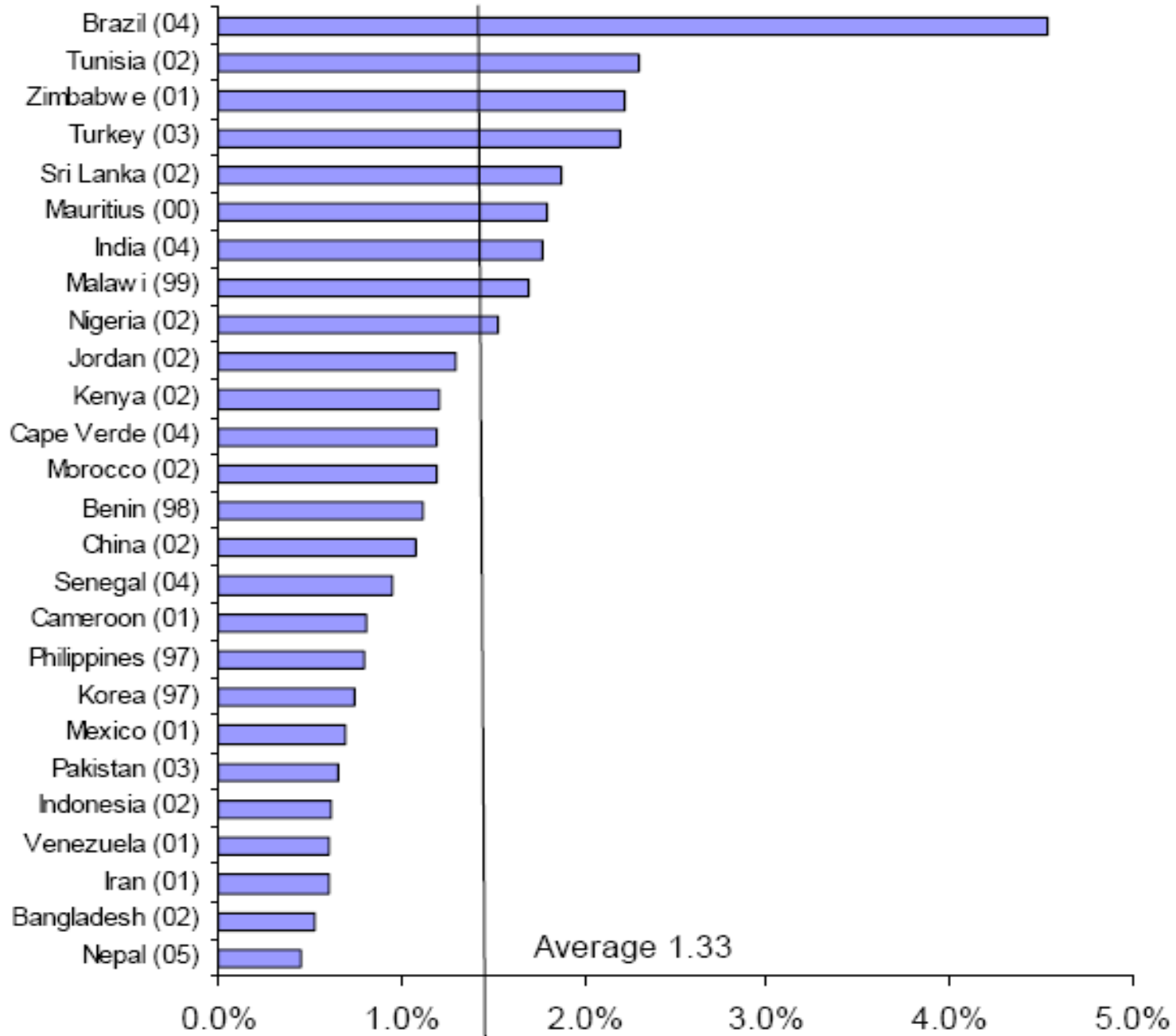
Figure 3: Expenditure on pensions of civil servants, high-income, OECD countries (per cent of GDP)



Source: OECD Social Expenditures Database



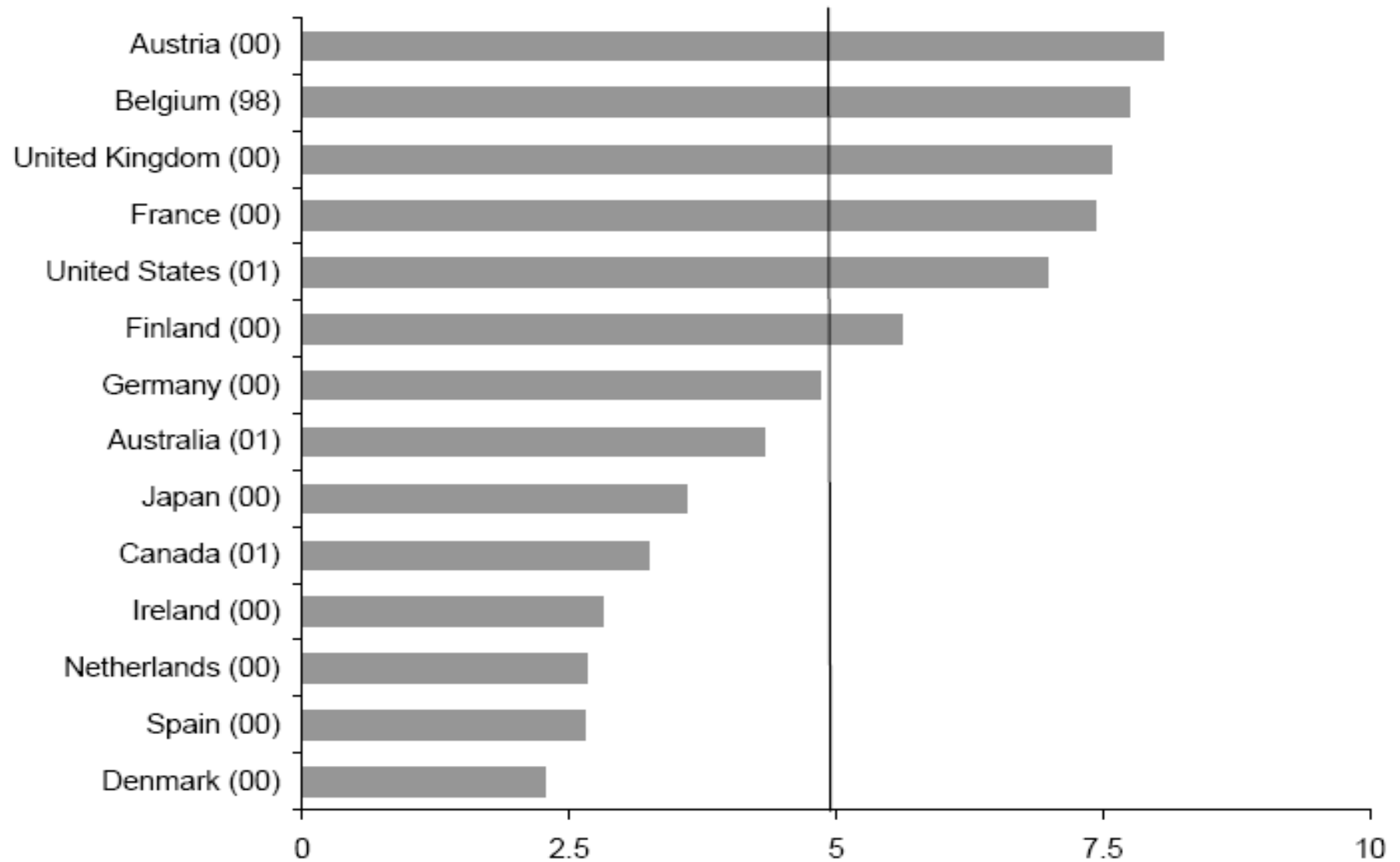
Figure 4: Expenditure on civil-service pensions, non-OECD countries
(per cent of GDP)



| Sector | Central or Federal Administration | Regional Administration (Regions, Provinces, States, Landless, Cantons) | Local administration |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Defence | Canada Czech Republic France Finland Greece Hungary Italy Luxembourg Netherlands Mexico Spain Sweden United States | | |
| Education | France Hungary Italy Korea Netherlands Luxembourg Sweden | Australia Canada Germany Ireland Japan Spain United States | Canada Czech Republic Finland Greece Hungary Korea Mexico United States |
| Health | France Hungary Spain United States | Australia Canada France Germany Ireland Japan Spain United States | Czech Republic Finland France Germany Greece Hungary Mexico United States |
| Police | Czech Republic Finland France Hungary Italy Korea Luxembourg Netherlands Spain Sweden | Ireland Japan | France Greece |
| Social | Hungary Spain Sweden | Australia France Germany Ireland Japan United States | Finland France Germany Greece United States |

Distribution of Sectoral Functions by Levels of Government for Selected Countries

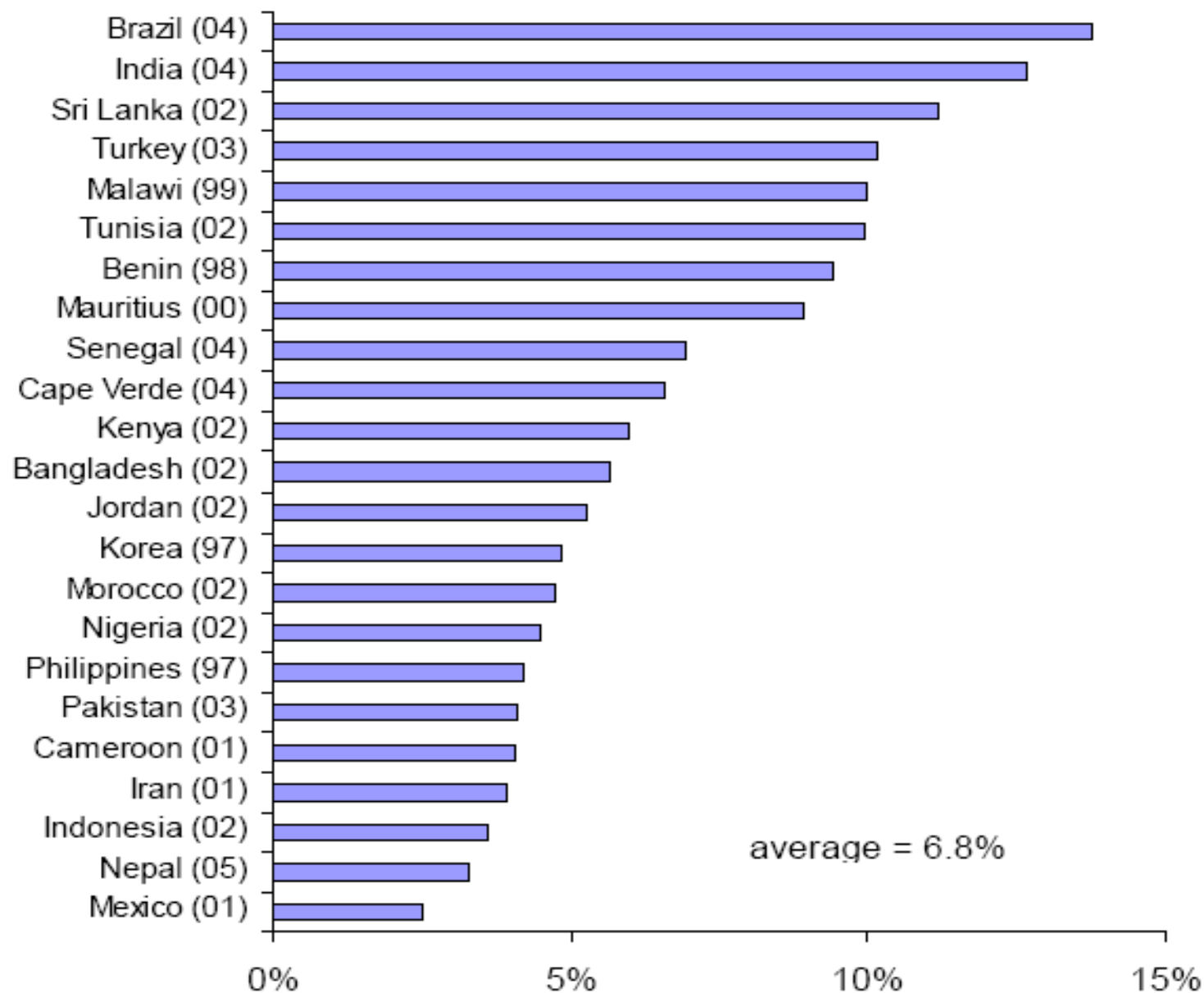
**Figure 5: Expenditure on civil-service pensions, OECD countries
(per cent of government revenues)**



Source: OECD Social Expenditures database; OECD Revenue Statistics



**Figure 6: Expenditure on civil-service pensions, non-OECD countries
(per cent of government revenues)**



Accounting and reporting on a fully funded basis

- ◆ **The expression “fully funded” has two different meanings:**
 - **it can qualify an actuarial costing method**
 - **it can qualify a financing method****but these are two distinct realities.**
- ◆ **The costing method used for reporting and the financing method to meet benefit obligations as they fall due, are distinct policy decisions.**



Transparency in reporting

- ◆ **To properly manage pension obligations and correctly allocate costs, the Government must account for the pension costs in accordance with sound accounting principles**
- ◆ **Comparing Paygo payments to retirees with salaries of current civil servants is misrepresenting the value of the pension that is earned by active participants in the year**
- ◆ **To match cost with services rendered in the year, the value of the pension earned by current employees need be measured as the normal cost for the year under a sound actuarial funding method, independently from the financing path that is followed for pension payable to retired employees**



Normal cost and liabilities

- ◆ In the long term normal cost under a funded method lower than the pay go cost because the returns assumed to be earned on the assets cover part of the benefit payments.
- ◆ Under each funded actuarial cost method, to the normal annual cost for current benefits correspond a liability for accrued pension benefits.
- ◆ If there are no assets, this unfunded liability is recorded as the Government pension obligation and should be managed as part of the overall government debt.



Interest on the debt

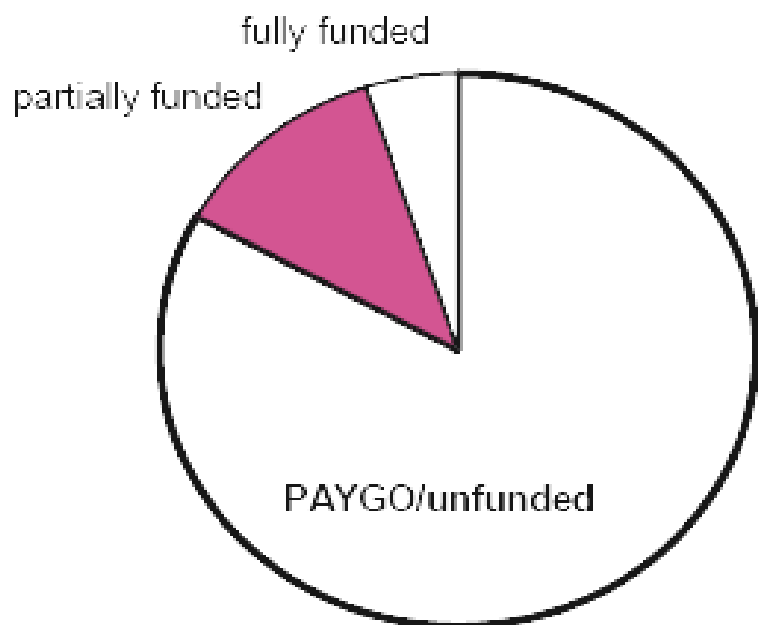
- ◆ **The liabilities being the discounted value of future payments, each year they increase by the discount rate, an increase that in a funded situation should be matched by the return on invested assets.**
- ◆ **If the assets are virtual, an assumed return, that is the cost of servicing the pension debt, must be capitalized. This cost is part of the overall cost of servicing the Government debt and is a Treasury obligation, not a pension cost.**
- ◆ **The pension obligations forms an integral part of the Government debt which should managed globally in the best interest of the country, taking into account the overall fiscal and monetary policy, opportunity costs and other priorities.**



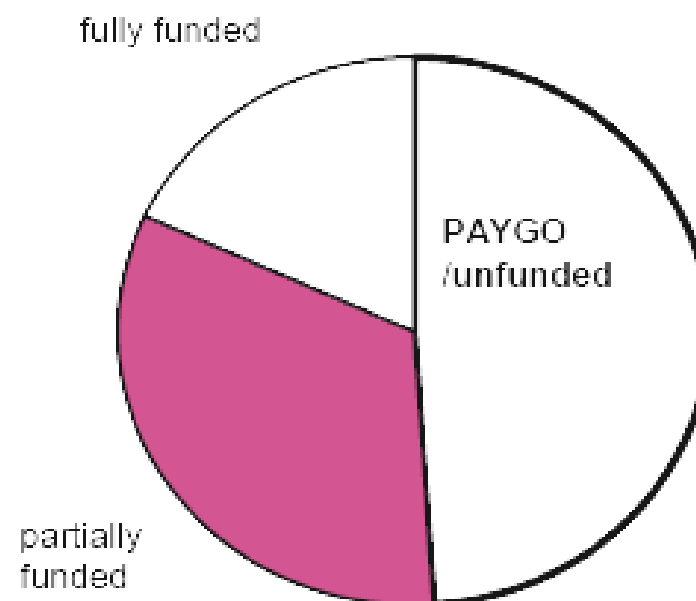
Financing of Civil Servants vs. National Schemes

Policies reflect different sets of circumstances

Civil servant schemes



National schemes



Comparing financing methods

- ◆ **Real funding is investing in marketable securities freely traded in the open capital market and generating returns that need not be financed by future taxes.**
- ◆ **Virtual funding can be just an entry for the pension debt in the liability side of the balance sheet or the virtual asset matching the pension obligation can be made more explicit by converting it into IOUs or Government bonds**
- ◆ **Financing through advance funding need to take into account the overall fiscal context, the opportunity cost of money, the availability of investments, the prudential framework and the overall financial condition**



Funding versus pay-go

- ◆ USA issues non-marketable bonds to cover part of the pension debt.
- ◆ UK appropriates the funds directly from the Consolidated Fund. Malaysia, Canada and Australia follow the UK approach.
- ◆ All of these variations in virtual funding can be considered equivalent to pay go. This equivalence is well explained in a very authoritative Report of the United States General Accounting Office to the Congress dated February 1996:
“Differences exist in the funding of federal government defined benefit plans. ...The agency trust funds, with one exception, invest in special issue Treasury securities, which are non-marketable. The Treasury must obtain the necessary money through tax receipts or borrowing to pay plan benefits to annuitants when those benefits are due. This financing approach enables the federal government to defer obtaining the money until it is needed to pay the benefits.”



Aging of population = fertility x longevity

| Year | Fertility | Longevity |
|------|-----------|-----------|
| 1965 | 7,2 | 47,4 |
| 1985 | 6,6 | 64,4 |
| 2005 | 3,7 | 73,0 |
| 2025 | 2,4 | 76,8 |
| 2045 | 1,9 | 79,4 |

- ◆ Population reproduction rate is about 2,1
- ◆ Increase in longevity as measured by life expectancy at birth from 20 year before to 20 year after 2005:

$$76,8 - 64,4 = 12,4 \text{ yrs} = 148,8 \text{ mths}$$
$$148,8 / 40 = 3,7 \text{ mths/year}$$

- ◆ Impact greater on years lived after 55, 60 or 65:

United Nations data as compiled by G. M. Psaras, Muhanna Actuarial Services for GCC States September 2006



Table 1: Retirement age and service criteria for civil-service versus national pension schemes, 2004

| | <i>Civil-service scheme</i> | | | <i>National scheme</i> | |
|-----------------------------------|-----------------------------|---------------|-------------------------|------------------------|---------------|
| | <i>Minimum</i> | <i>Normal</i> | <i>Years of service</i> | <i>Minimum</i> | <i>Normal</i> |
| High-income OECD countries | | | | | |
| Australia | | 55-60 | | 55 | 65 |
| Austria | | 60 | | 56.5/61.5 | 60/65 |
| Belgium | | 60 | | 60 | 65 |
| Canada | 55 | 65 | 25 | 60 | 65 |
| Denmark | 60 | 67 | | | 67 |
| Finland | 60 | 63-65 | | 60 | 65 |
| France | | 60 | | 56 | 60 |
| Germany | 62/63 | 65 | | 63 | 65 |
| Greece | | 60 | | 57 | 65 |
| Iceland | 60 | 65 | | | 67 |
| Ireland | | | | 65 | 66 |
| Japan | | 65 | 25 | 55 | 65 |
| Luxembourg | 57 | | | | 65 |
| Netherlands | 61 | 65 | | 60 | 65 |
| Norway | 62 | 67 | | 62 | 67 |
| Portugal | | 60 | 36 | 55 | 65 |
| Spain | | 60 | 30 | 60 | 65 |
| Sweden | 60 | 65 | | 61 | 65 |
| Switzerland | 60 | 62 | | 63 | 64/65 |
| United Kingdom | 50 | 60 | | | 65 |
| United States | | | | 62 | 67 |



Table 1: Retirement age and service criteria for civil-service versus national pension schemes, 2004

| | <i>Civil-service scheme</i> | | | <i>National scheme</i> | |
|--------------------------|-----------------------------|---------------|-------------------------|------------------------|---------------|
| | <i>Minimum</i> | <i>Normal</i> | <i>Years of service</i> | <i>Minimum</i> | <i>Normal</i> |
| South Asia | | | | | |
| Bhutan | | 60 | | | no scheme |
| Nepal | 50 | 58 | 20 | | no scheme |
| India | | 60 | | | 58 |
| Maldives | | none | | | no scheme |
| Pakistan | | 60 | | | |
| Sri Lanka | | 60 | | | 55 |
| East Asia/Pacific | | | | | |
| China | 50/55 | 55/60 | 30 | | 55/60 |
| Indonesia | 50 | 56 | 20 | | |
| Korea | | 60 | | | 65 |
| Malaysia | 50 | 55 | 10 | | |
| Philippines | 60 | 65 | 15 | | |
| Thailand | | 50 | 10 | | 55 |



The swing to DC

- ◆ **Civil service programs used to be mostly Defined Benefits paid out as monthly life pensions**
- ◆ **Fiscal concerns have led to the introduction of DC formulas prospectively either for all Civil servants or only for new employees, or to combine DB and DC to modify the risk sharing**
- ◆ **Under DC formula, the benefit can be paid as a lump sum or a payout method providing sustainable financial security throughout retirement may be mandated**
- ◆ **Risks associated with DC formulas are mitigated when longevity insurance is provided in basic programs**



Civil Servants partially or totally covered by DC programs

| | Year started | DB plus DC | DC only |
|-------------------------|--------------|------------|---------|
| AFRICA | | | |
| Botswana | 2001 | | X |
| LATIN AMERICA | | | |
| Argentina | 1994 | X | |
| Bolivia | 1997 | | X |
| Costa Rica | 2000 | X | |
| Chile | 1981 | | X |
| Dominican Republic | 1998 | | X |
| El Salvador | 1999 | | X |
| Nicaragua | 1997 | X | |
| Panama | 1997 | X | |
| Peru | 2003 | | X |
| Uruguay | 1995 | X | |
| HIGH INCOME OECD | | | |
| Denmark | 1993 | X | |
| Netherlands | 1986 | X | |
| Sweden | 2000 | X | |
| Switzerland | 1985 | X | |
| United Kingdom* | 1988 | X | |
| United States* | 1986 | X | |


Source : Palacios and Whitehouse, May 2006

11th Regional Conference – May 2007, Amman, Jordan



Civil Servants partially or totally covered by DC programs

Continued



| | Year started | DB plus DC | DC only |
|----------------------------|--------------|------------|---------|
| Bulgaria | 2002 | X | |
| Croatia | 2002 | X | |
| Estonia | 2002 | X | |
| Hungary | 1998 | X | |
| Latvia | 2001 | X | |
| Lithuania | 2002 | X | |
| Macedonia | 2003 | X | |
| Poland | 1999 | X | |
| Russia | 2004 | X | |
| Slovakia | 2005 | X | |
| ASIA PACIFIC REGION | | | |
| Australia | 2006 | | X |
| Bhutan | 2001 | X | |
| Hong Kong | 2001 | | X |
| India | 2004 | | X |
| Kazakhstan | 1998 | | X |
| Thailand | 1997 | X | |

Source : Palacios and Whitehouse, May 2006



The pendulum effect

- ◆ There is no perfect solutions, only trade-offs!
- ◆ The pendulum is still moving towards DC but as experience emerge it becomes clearer that such programs are not risk free for the employers or for the economy
- ◆ DC risks are longer term; public employers, given their expectation of indefinite duration, are more exposed to risks arising from high expenses, misunderstanding, volatility, longevity, leakage, market shortfalls, annuitization, etc...
- ◆ A Pension Research Council paper* entitled “The Case for Public Sector Defined benefits Plans” explains as follows the different trend in the public sector:
 - “ One reason is that public employers have the ongoing responsibility of attracting and retaining a large workforce whose diversity is unmatched in private industry”
- ◆ Academic research also points out that due to the Law of combination, the volatility of the individual benefits generated by DCs has large scale perverse effects on Population dynamics (*North American Actuarial Journal, Vol 11, #1, January 2007*)
- ◆ Conclusion: in the DB/DC debate, the jury is still out!

* <http://prc.wharton.upenn.edu/prc/prc.html>

11th Regional Conference – May 2007, Amman, Jordan



The wider picture

- ◆ Ageing is hitting harder in the public sector; the challenge of attracting and retaining capacity is a growing concern
- ◆ Pensions are only one component of wider reforms that are moving away from the historical view of the distinctive nature of public employment
- ◆ Cost is important but key issues are now
 - Convergence and harmonisation with private sector pension and employment conditions
 - Greater flexibility and mobility within the public sector and careers combining public and private employment
 - Retaining skills by promoting a higher retirement age and atypical work patterns
 - Making public sector employment more attractive

