

Pension Indicators

**Reliable statistics to improve
pension policy-making**

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The need for reliable and up-to-date data

- ❑ Valuable lessons to be learned from other countries
- ❑ More countries address pressures of population ageing and maturing of pension systems
- ❑ Rapid change and widespread pension reform
- ❑ Need for timely information about increasingly diverse retirement-income provision
- ❑ Move away from narrow focus on financial sustainability
- ❑ Greater emphasis on a 'results-based' policy-making
- ❑ Impact of policy changes needs to be identified, measured and assessed

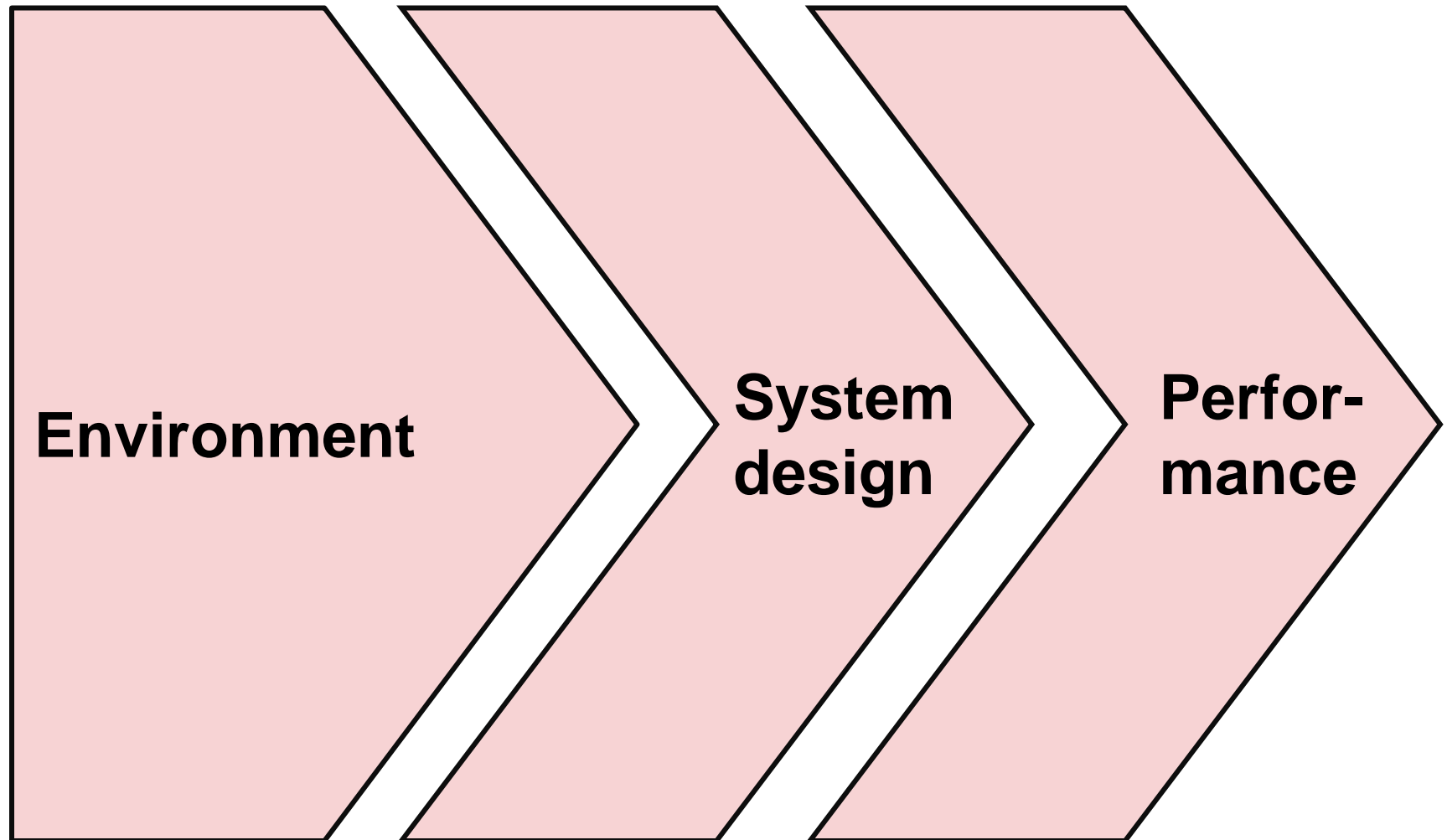
Data sources

- ❑ Primary sources: national
 - ❑ administrative: published or databases
 - ❑ household surveys
 - ❑ labour-force surveys
- ❑ Secondary sources: international organisations
 - ❑ World Bank
 - ❑ OECD (Organisation for Economic Co-operation and Development)
 - ❑ Regional development banks
 - ❑ ILO (International Labour Office/Organisation)
 - ❑ United Nations
 - ❑ ISSA (International Social Security Organisation)

Database: Constraints and challenges

- ❑ Capacity and resources on the national level
- ❑ Co-ordination between national agencies
- ❑ Missing or wrong information of individual records
- ❑ Corruption, evasion and abuse of systems
- ❑ Comparability in secondary sources
- ❑ Applicability of key concepts

Organising the indicators



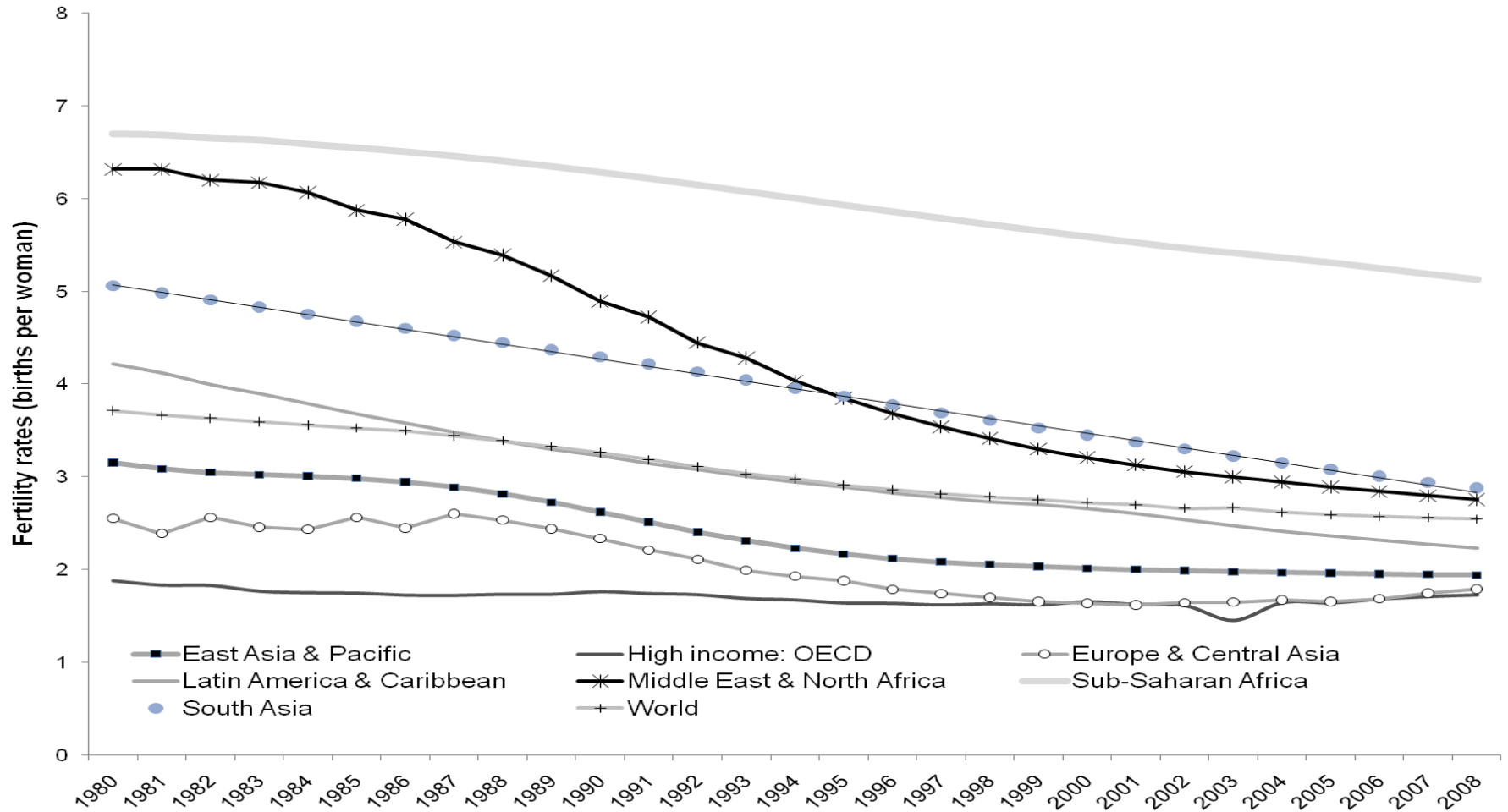
Environment Indicators

**Demographic, economic and
social context**

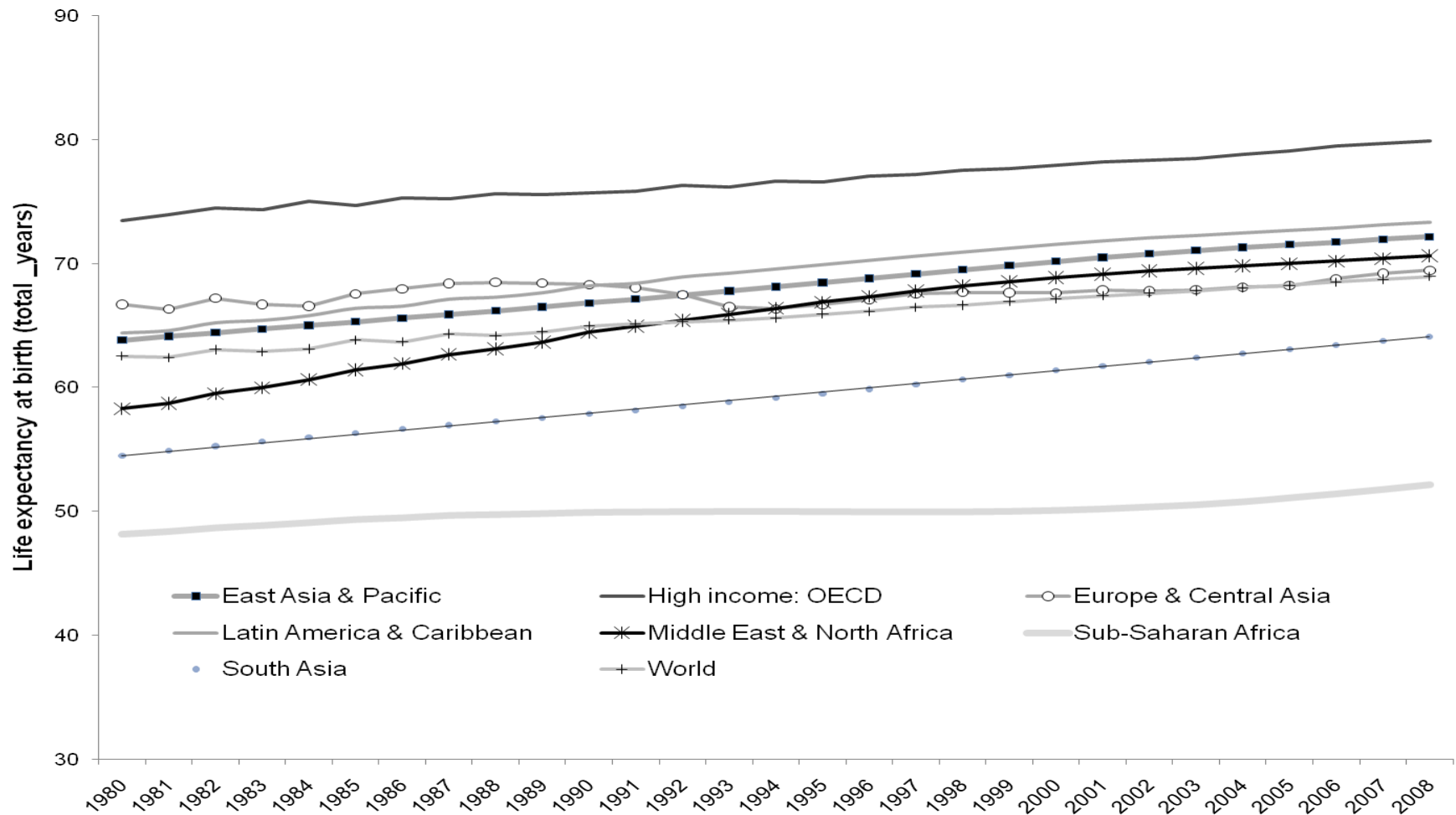
Demographic, economic and social context

- Well known phenomenon of population ageing
 - Lower fertility
 - Longer life expectancy
- Patterns of labour-force participation by age
- Public finances: a constraint on pension-reform options
- Financial-sector development: a constraint on the direction of pension reform?

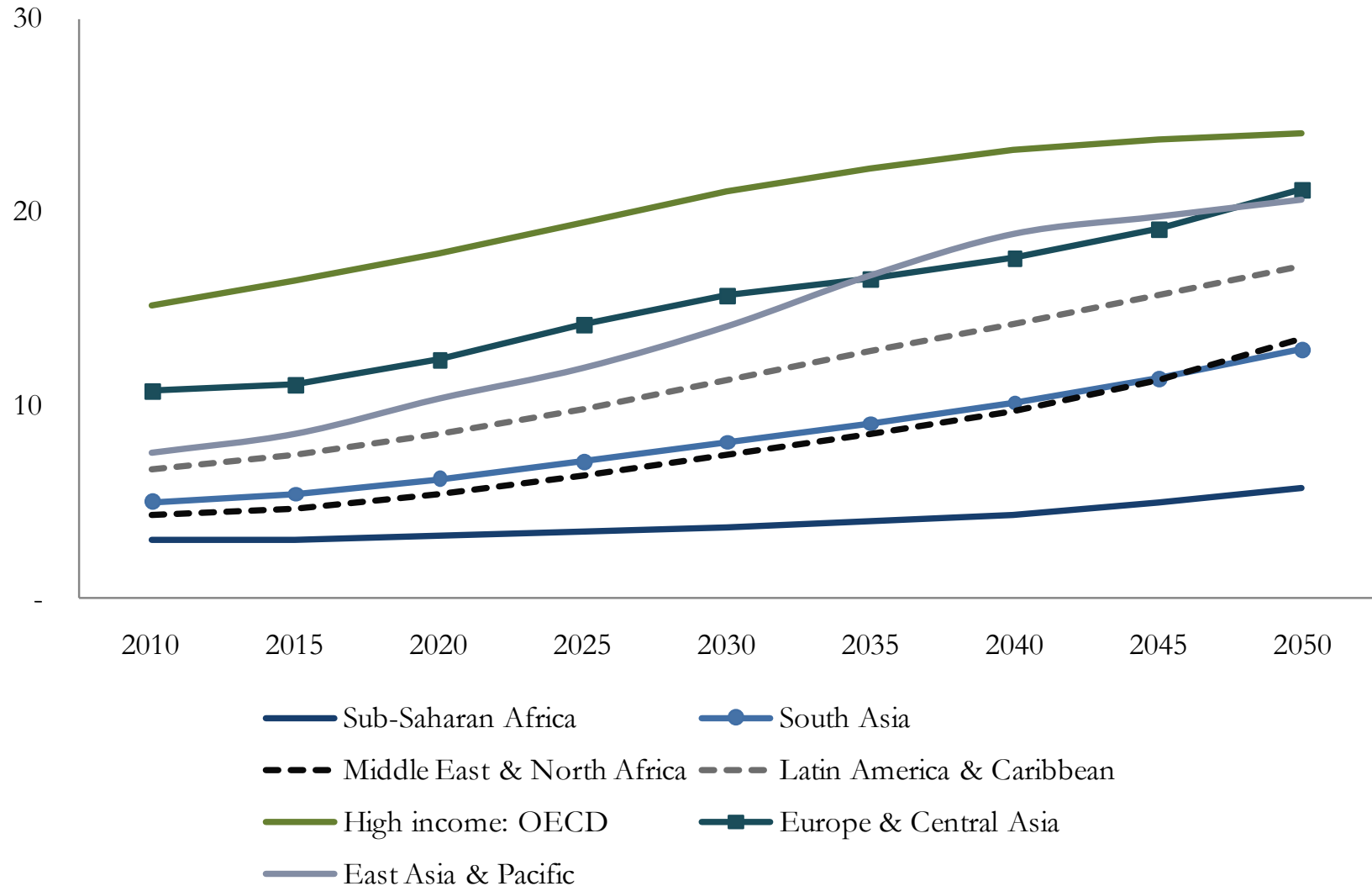
Demographic change: Fertility



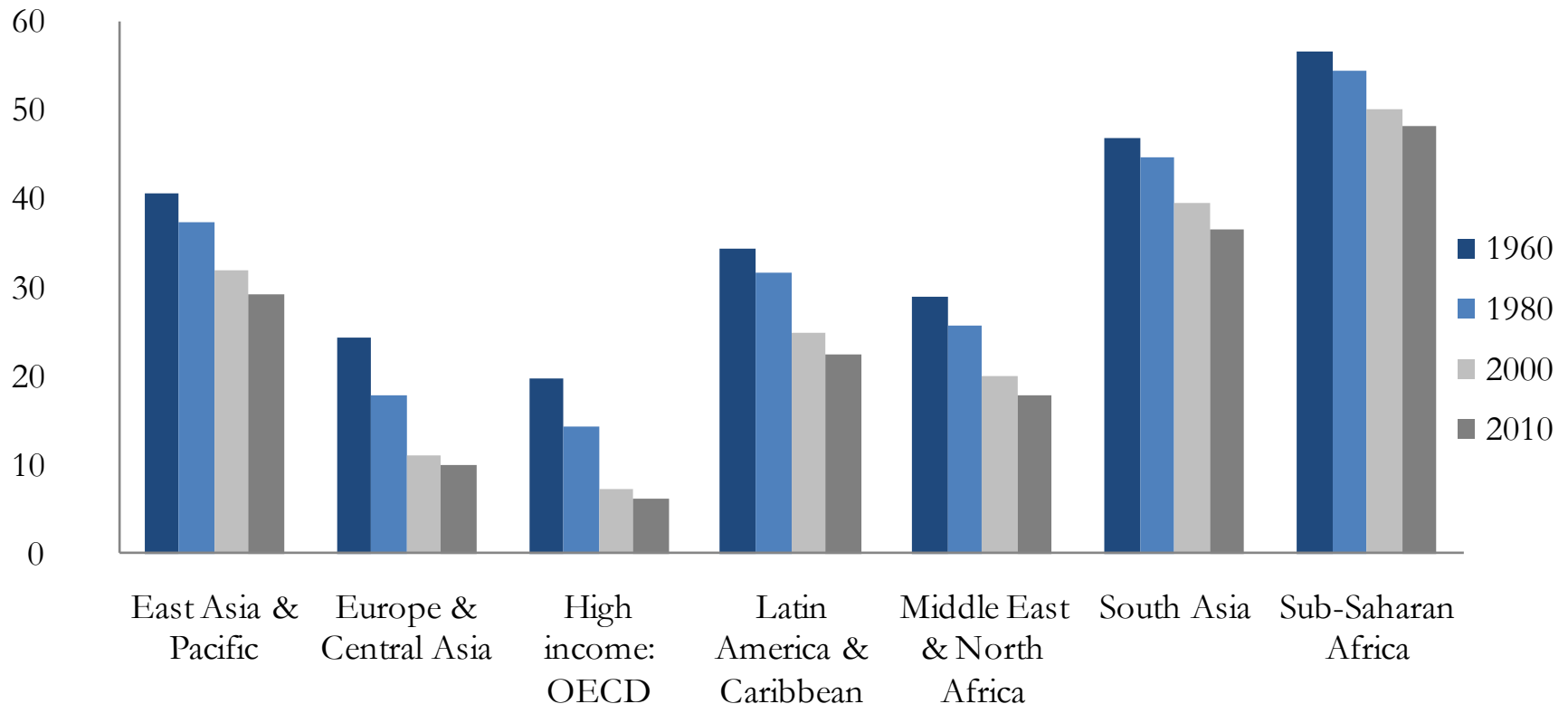
Demographic change: Life expectancy at birth



Demographic change: Population ageing, projections



Economic context: labour-market participation of over 65s



Source: ILO

Other environment indicators

- ❑ Fiscal situation: a constraint on reform choices?
 - ❑ budget deficit
 - ❑ government debt
- ❑ Financial-market development
 - ❑ to be developed using World Bank indicators
- ❑ Institutions
 - ❑ to be developed using World Bank governance indicators

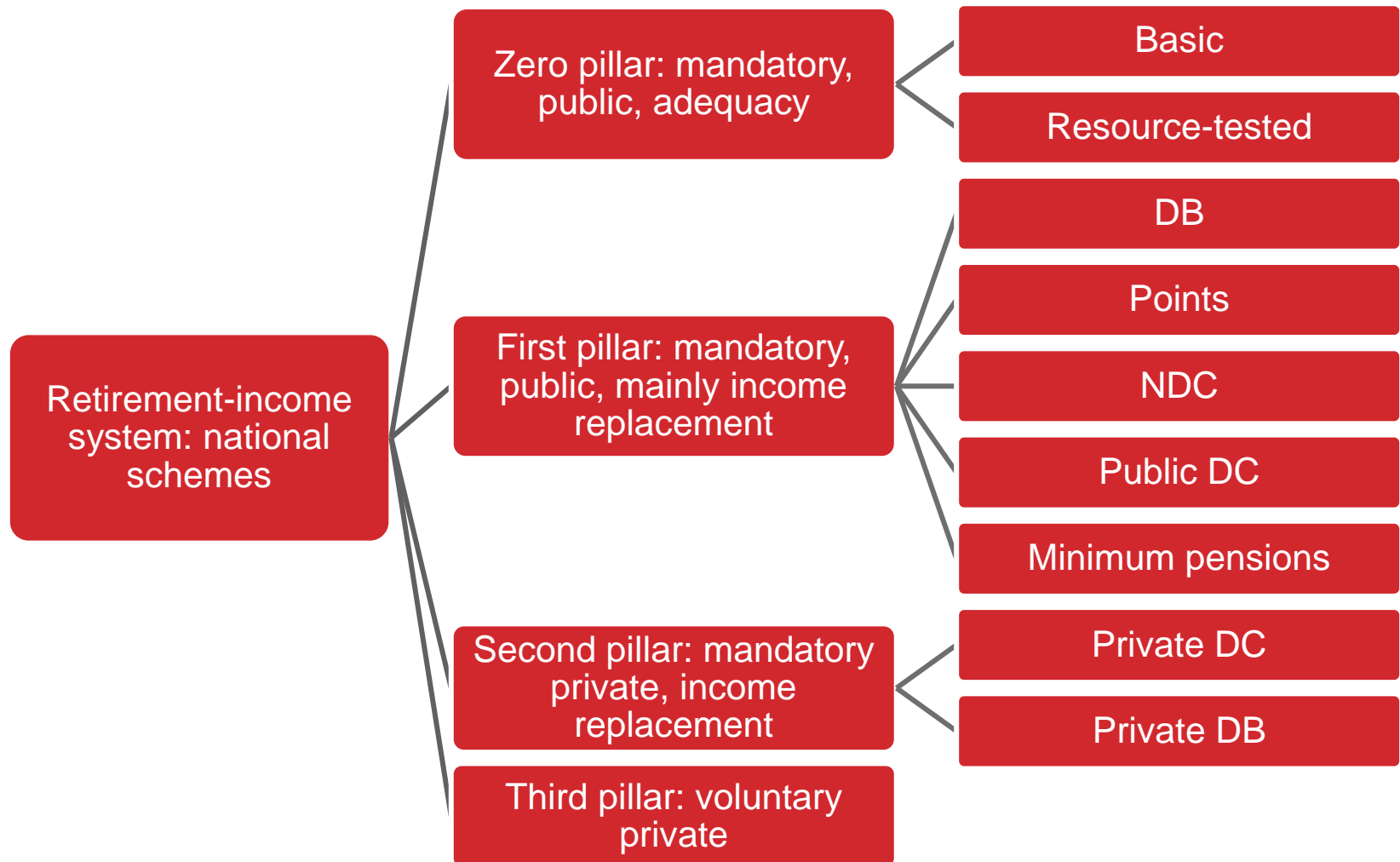
Kaufmann, D., A. Kraay, M. Mastruzzi (2009), 'Governance Matters VIII: Aggregate and Individual Governance Indicators, 1996-2008', Policy Research Working Paper no. 4978, World Bank, Washington, D.C.

Beck, T. and A. Demirgüç-Kunt (2009), 'Financial Institutions and Markets across Countries and over Time: Data and Analysis', World Bank, Washington, D.C.

Design Indicators

**Structure of the pension system,
key parameters and rules**

World-Bank multi-pillar framework: simplified version



Overall structure:

First and second pillars

- ❑ Zero pillar only: 5 countries (e.g., Botswana, Ireland, Namibia, New Zealand, South Africa)
- ❑ NDC: 10 countries (Azerbaijan, Egypt, Italy, Kyrgyz R., Latvia, Mongolia, Norway, Poland, Russia, Sweden)
- ❑ Private DC: 32 countries (Latin America, Eastern Europe/Central Asia, Australia, Denmark, Egypt, Ghana, Nigeria, Norway, Sweden)
- ❑ Public DC/provident funds: 25 countries (South Asia, Pacific, East Africa)
- ❑ DB schemes: 123 countries
- ❑ Points schemes: 10 countries (e.g., France, Germany, Senegal, Slovak R.)

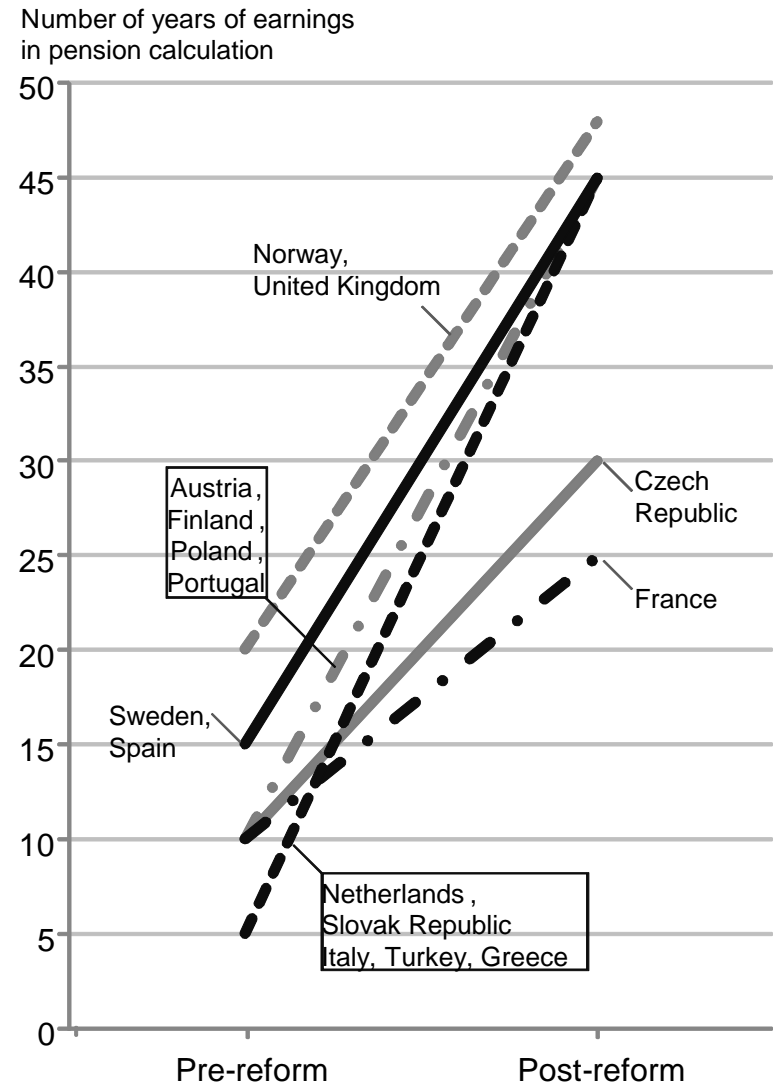
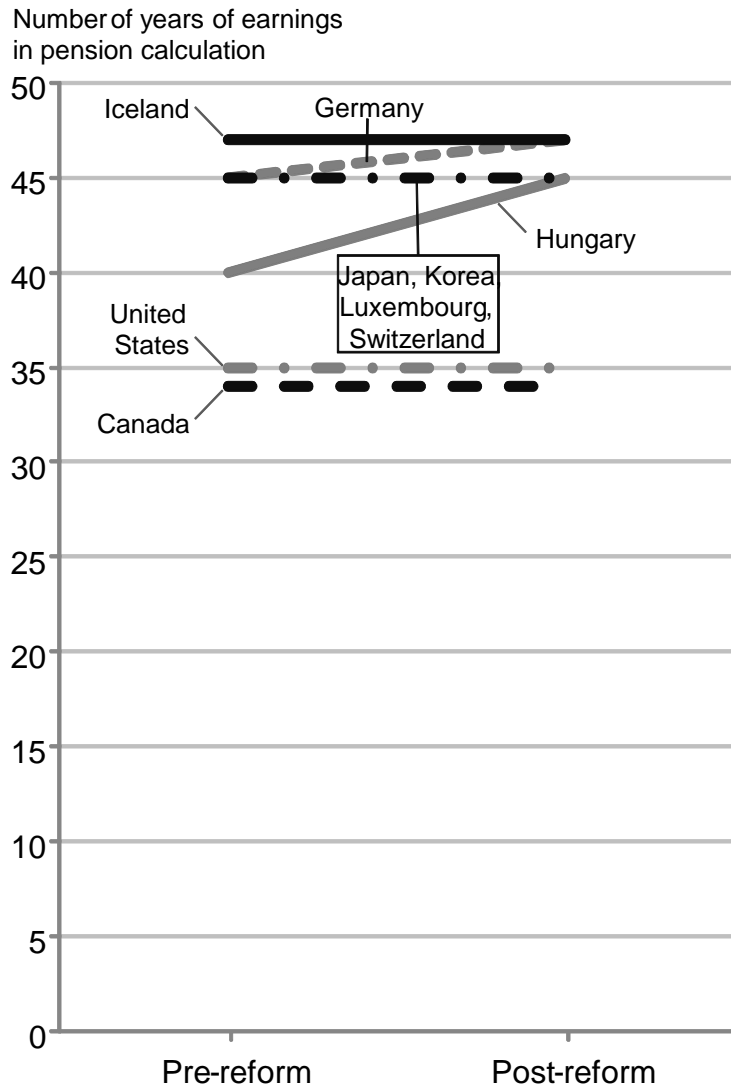
Parameters: accrual rate

	Regional average accrual rate
East Asia/Pacific	1.8%
Eastern Europe/Central Asia	1.7%
Latin America/Caribbean	1.2%
Middle East/North Africa	1.6%
South Asia	2.0%
Sub-Saharan Africa	1.6%
High-income OECD	1.6%
World	1.7%

Parameters: earnings measure

	Lifetime average earnings	Best/final earnings
East Asia/Pacific	3	3
Eastern Europe/ Central Asia	5	1
Latin America/Caribbean	-	17
Middle East/North Africa	-	10
South Asia	-	2
Sub-Saharan Africa	-	18
High-income OECD	16	3
World	24	54

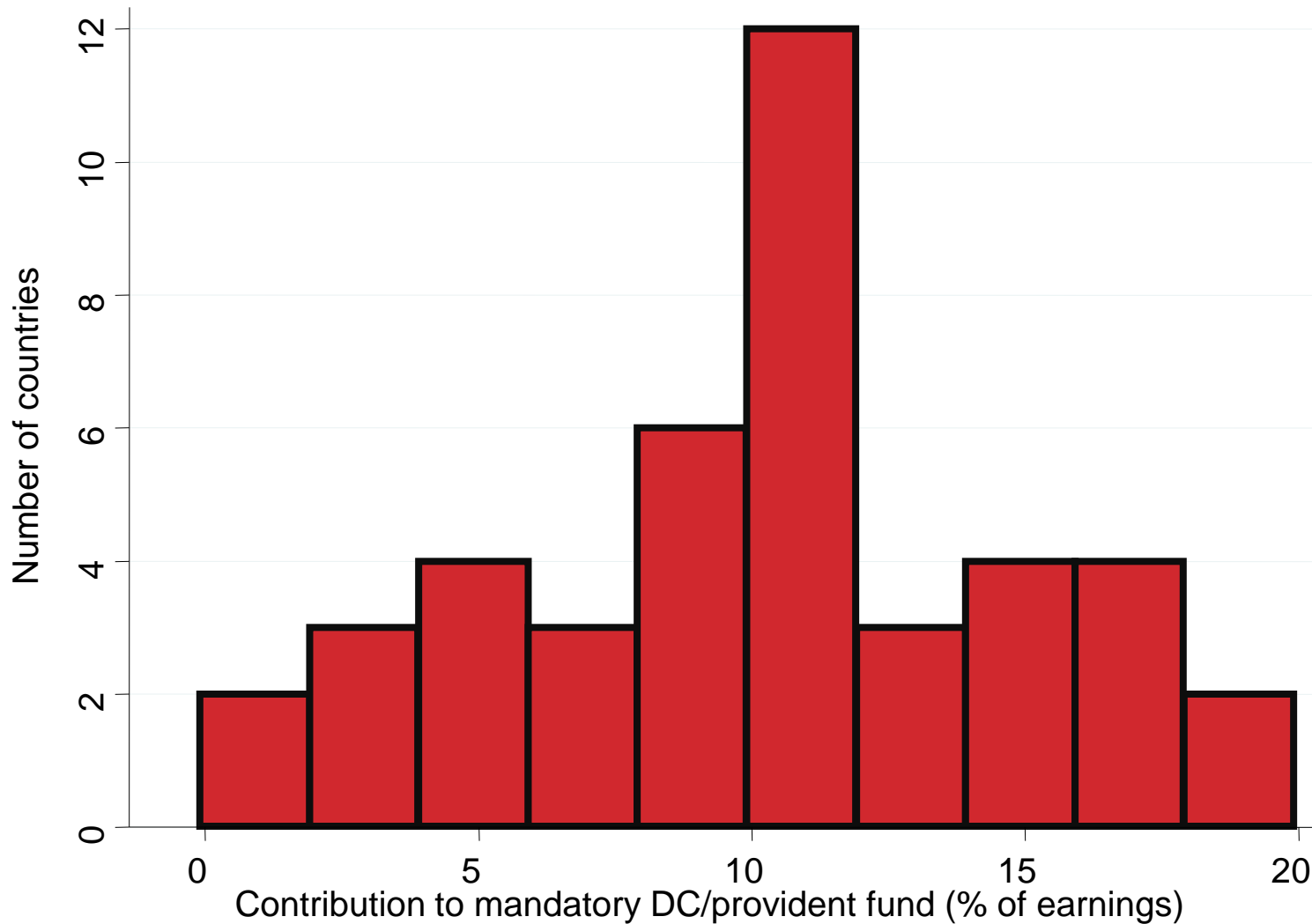
Parameters: earnings measure



Indexation

	Prices	Wages	Mixed	Ad hoc/ discretionary
East Asia Pacific	2	2		1
Eastern Europe Central Asia	10	1	10	3
Latin America Caribbean	6	2	1	15
Middle East North Africa	2	1		9
Sub-Saharan Africa	8	2		7
High-income OECD	11	2	4	2
World	39	10	15	37

Contribution rate: Defined-contribution schemes



Performance Indicators

**Assessing pension systems
against key objectives and
principles**

Six principles and objectives

- ❑ **Coverage** of the pension system, by both mandatory and voluntary schemes
- ❑ **Adequacy** of retirement benefits
- ❑ **Financial sustainability** and affordability of pensions to taxpayers and contributors
- ❑ **Economic efficiency**: minimising distortions on economic behaviour, such as labour supply and saving
- ❑ **Administrative efficiency**: keeping costs low (collecting contributions, paying benefits, managing investments)
- ❑ **Security** of benefits in the face of different risks and uncertainties

Coverage

How much of the labour force is covered by the pension system?

Coverage

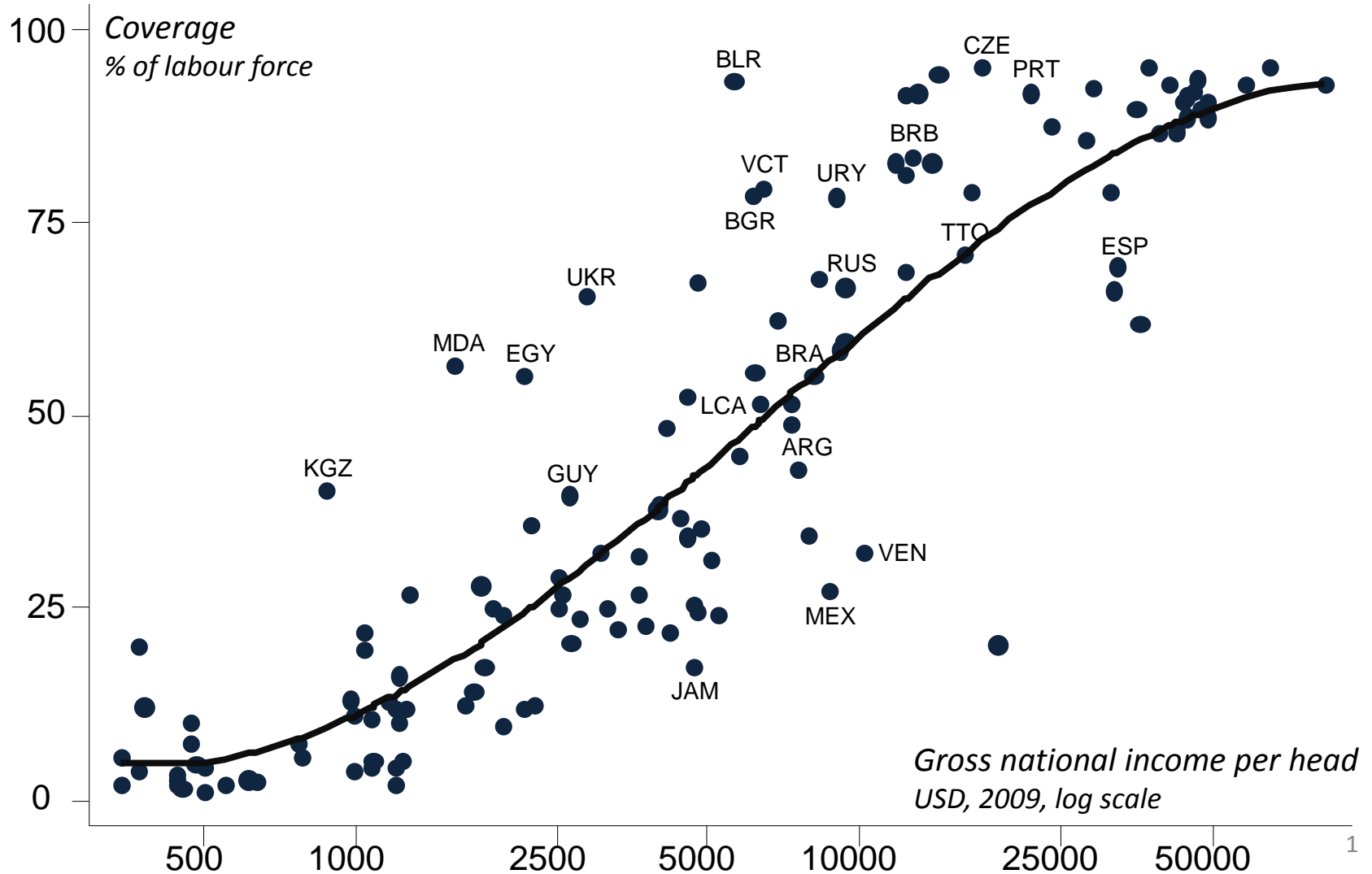
- ❑ Low coverage of formal pension systems may lead to widespread old-age poverty
- ❑ Retirement-income systems can affect people at all stages of their adult lives (as contributors or beneficiaries)
- ❑ Focus here in people of working age
- ❑ Measuring coverage: affiliates or members?
 - ❑ but risk of double-counting people in multiple schemes or with multiple accounts/records
 - ❑ also, dormant accounts/records of people no longer actively contributing
 - ❑ people registered for social security but not covered by pension component

Defining coverage:

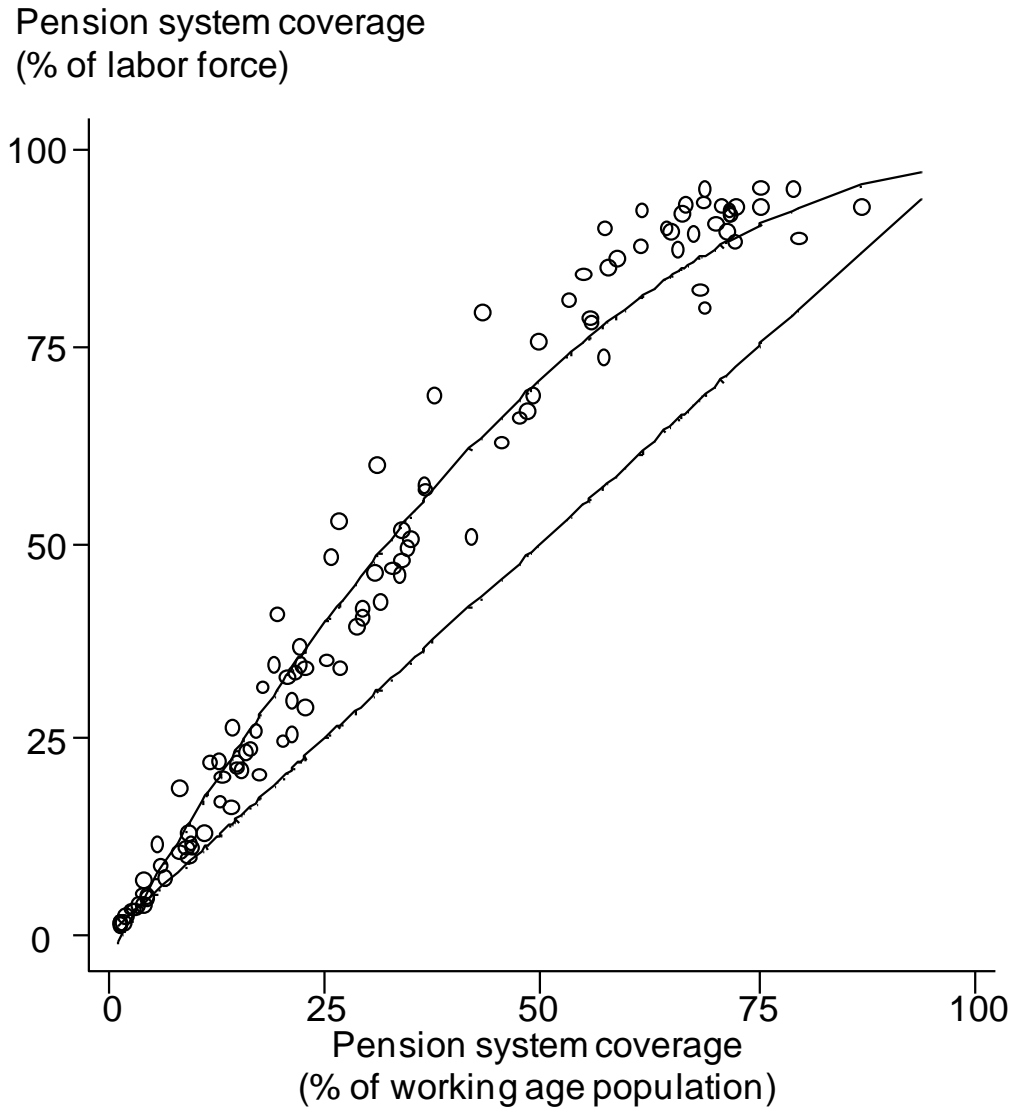
The active member concept

- ❑ Someone who contributed to or accrued rights in a formal pension scheme
- ❑ Concept clearest when pensions are contributory, but active members of non-contributory schemes are also 'covered'
- ❑ Also, people who receive credits for periods of unemployment, caring for children, full-time education, military service *etc.* can be covered
- ❑ Note: active member concept only applies to mandatory income-replacement pensions (first and second pillars) and rarely to zero pillar schemes (universal basic, means-tested)
- ❑ Comparators:
 - ❑ working-age population
 - ❑ labour force

Coverage and national income



Coverage: different measures



Adequacy

**Pension entitlements,
replacement rates and pension
wealth**

Three approaches to assessing adequacy

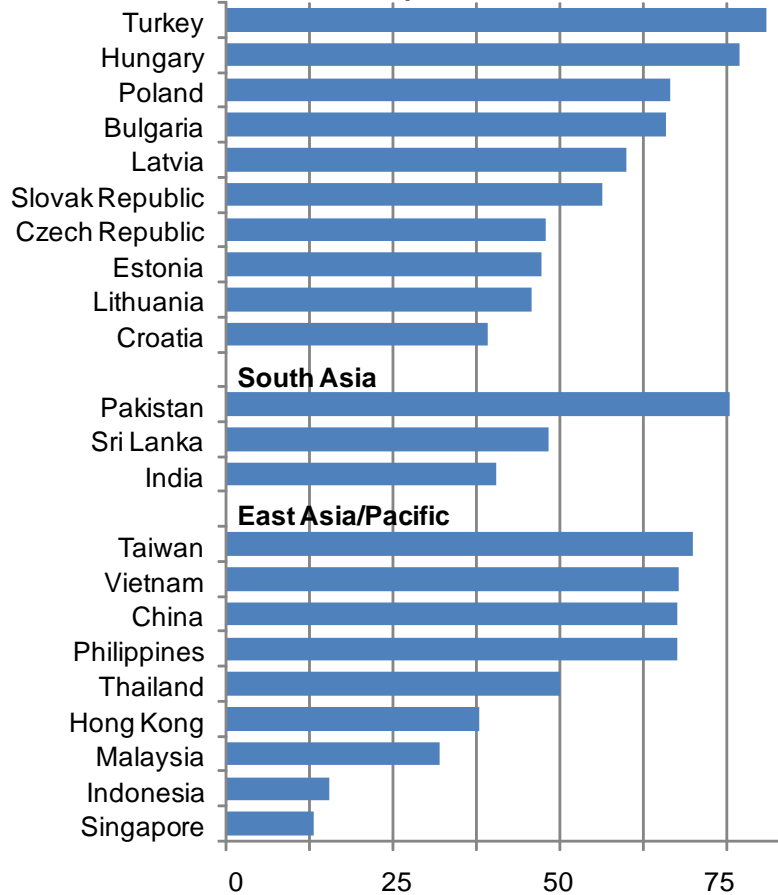
- ❑ Empirical information on pension entitlements of recent retirees
- ❑ Evidence from household survey data on income and poverty of older people
- ❑ Models of future pension entitlements of today's workers

Modelling pension entitlements

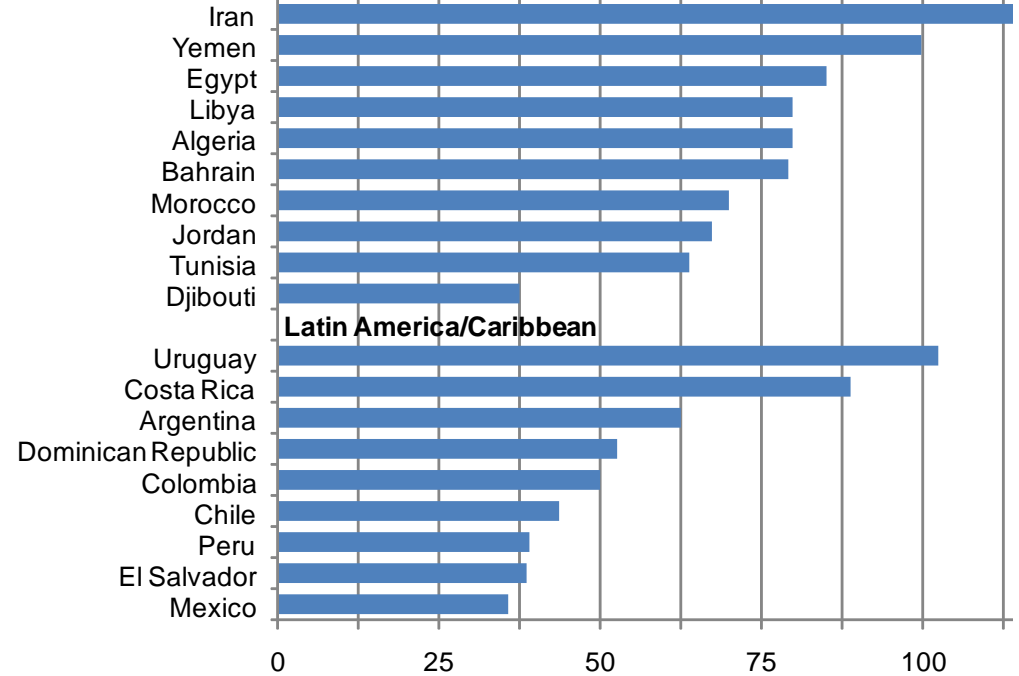
- ❑ Uses 'Apex' model (Analysis of Pension Entitlements across Countries)
- ❑ Results published in OECD *Pensions at a Glance* and World Bank *Pensions Panorama*
- ❑ Baseline assumptions:
 - ❑ worker entering the labour market today
 - ❑ full career from age 20 to national, normal pensionable age
 - ❑ standard assumptions of inflation, average-earnings growth, investment returns (for DC), discount rate
 - ❑ country-specific information on mortality rates
- ❑ Important to note this is an **indicator** not a **forecast**

Apex results from *Pensions Panorama* and *PaG Asia/Pacific*

Eastern Europe/Central Asia



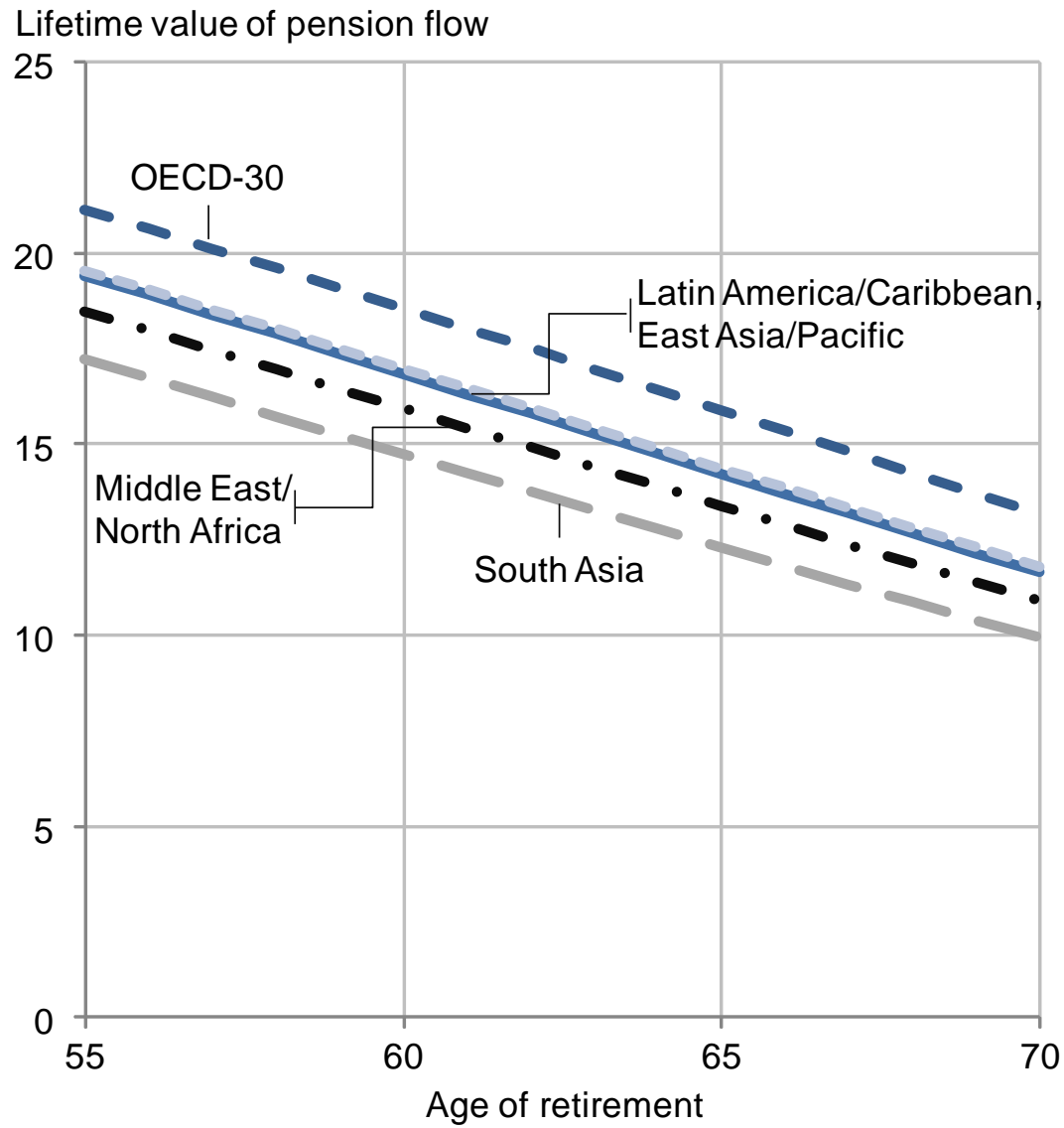
Middle East/North Africa



Extending the analysis

- ❑ **Net** replacement rates
- ❑ Pension wealth
 - ❑ present value ('stock') of the 'flow' of pension benefits
 - ❑ pension eligibility age
 - ❑ indexation of pensions in payment
 - ❑ national life expectancy

Pension wealth



Pension wealth: sample results

	Pension wealth (multiple of individual earnings)	
	Men	Women
China	16.4	20.1
India	6.2	6.6
Indonesia	2.6	2.6
Malaysia	6.4	6.4
Pakistan	10.7	12.5
Philippines	8.3	9.5
Thailand	8.7	10.2
Vietnam	15.1	16.9
Canada	6.6	7.7
France	8.8	10.2
Germany	7.2	8.5
Italy	10.0	10.7
Japan	5.7	6.4
United Kingdom	4.2	4.8
United States	5.9	6.8
OECD-30 average	9.3	10.8

Pension entitlements of current retirees

- ❑ **Current** rather than **expected** entitlements
- ❑ These depend on
 - ❑ past parameters and rules of the pensions system
 - ❑ past social and economic circumstances
- ❑ Average benefit levels: whose benefits?

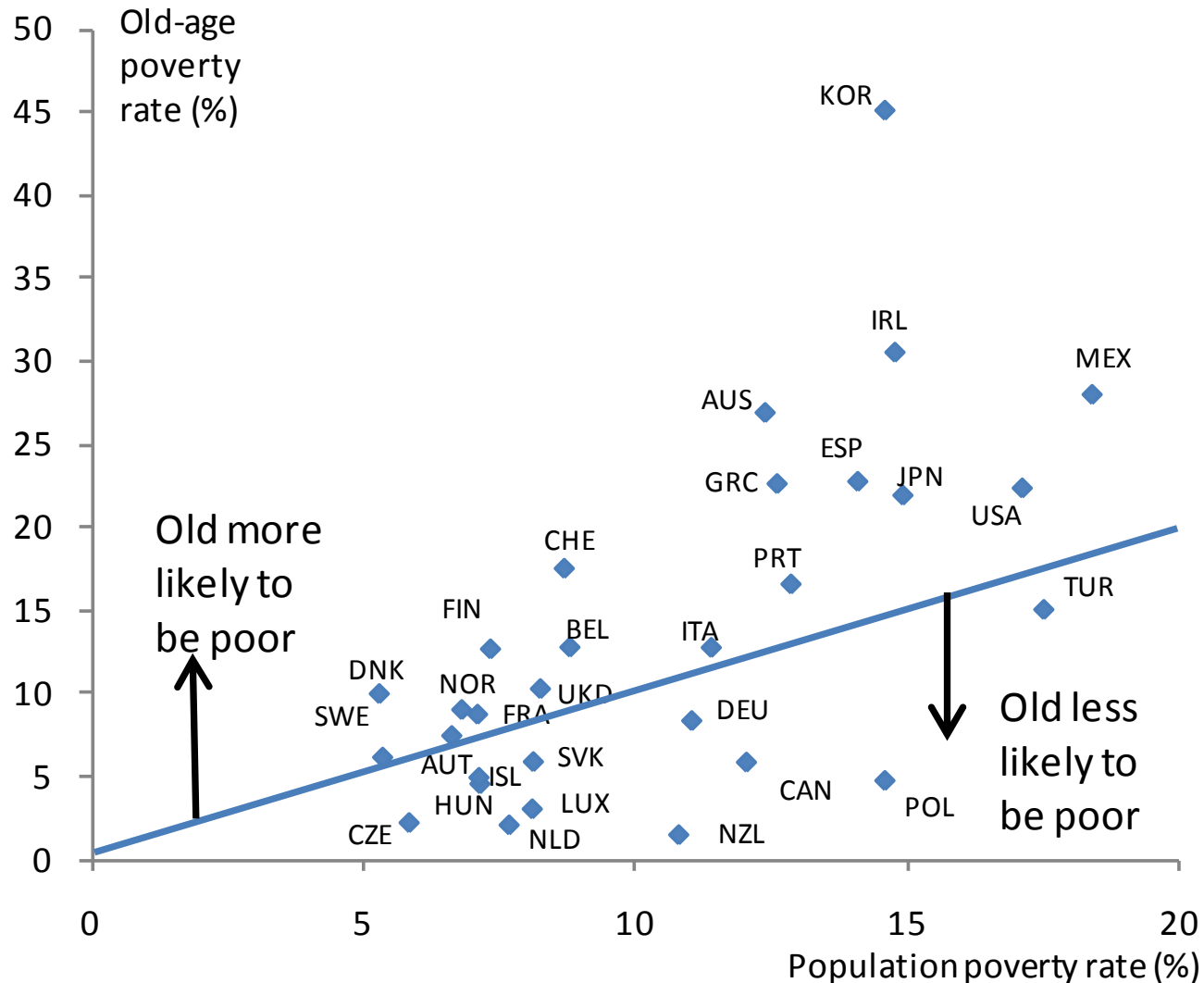
	Lithuania	Brazil
All beneficiaries	100	100
Old-age	128	131
Male old-age	145	144
New male old-age	170	154
Survivors	27	99
Disabled	122	–
Disabled below pension age	96	–
Civil servants	–	357
Farmers	–	75

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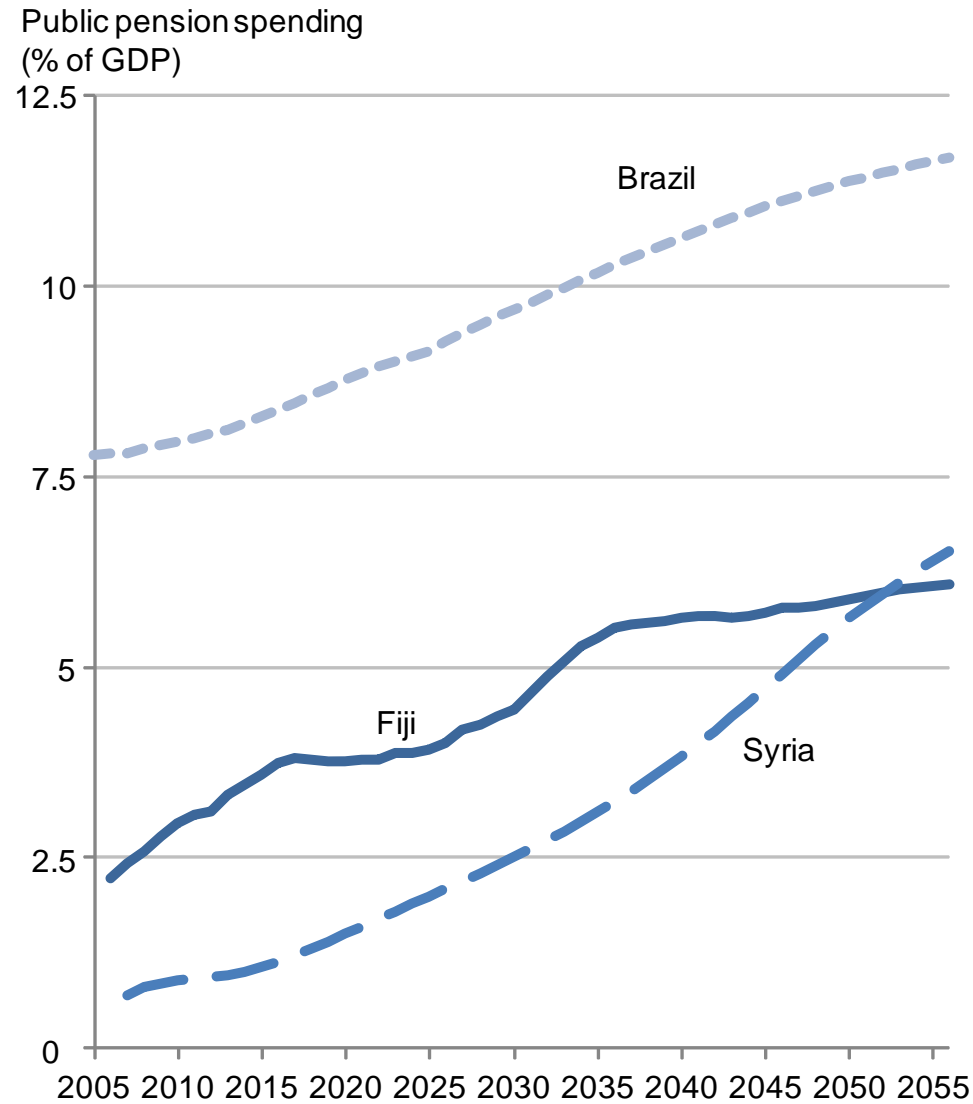
Old-age poverty: OECD countries



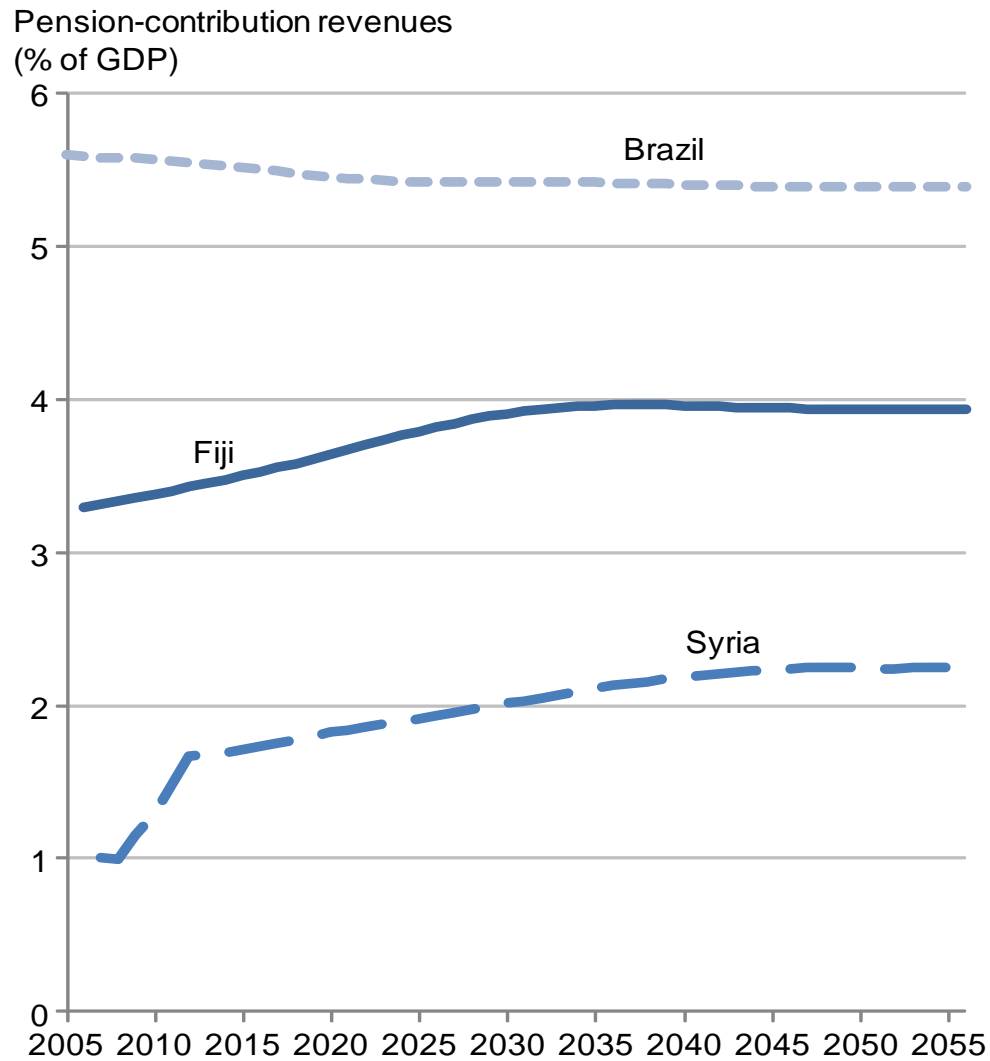
Financial sustainability

**Assessing the finances of pension
systems over the long term**

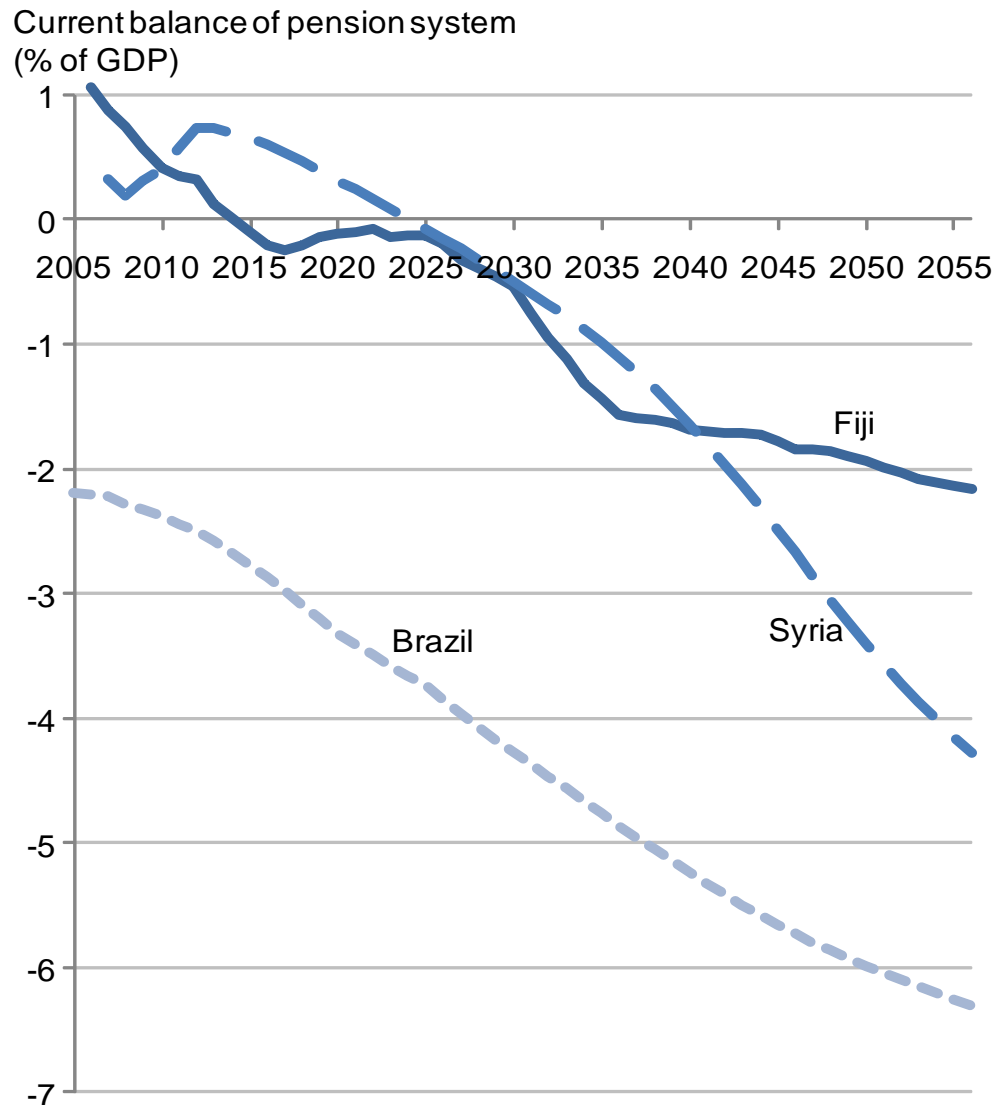
Expenditures



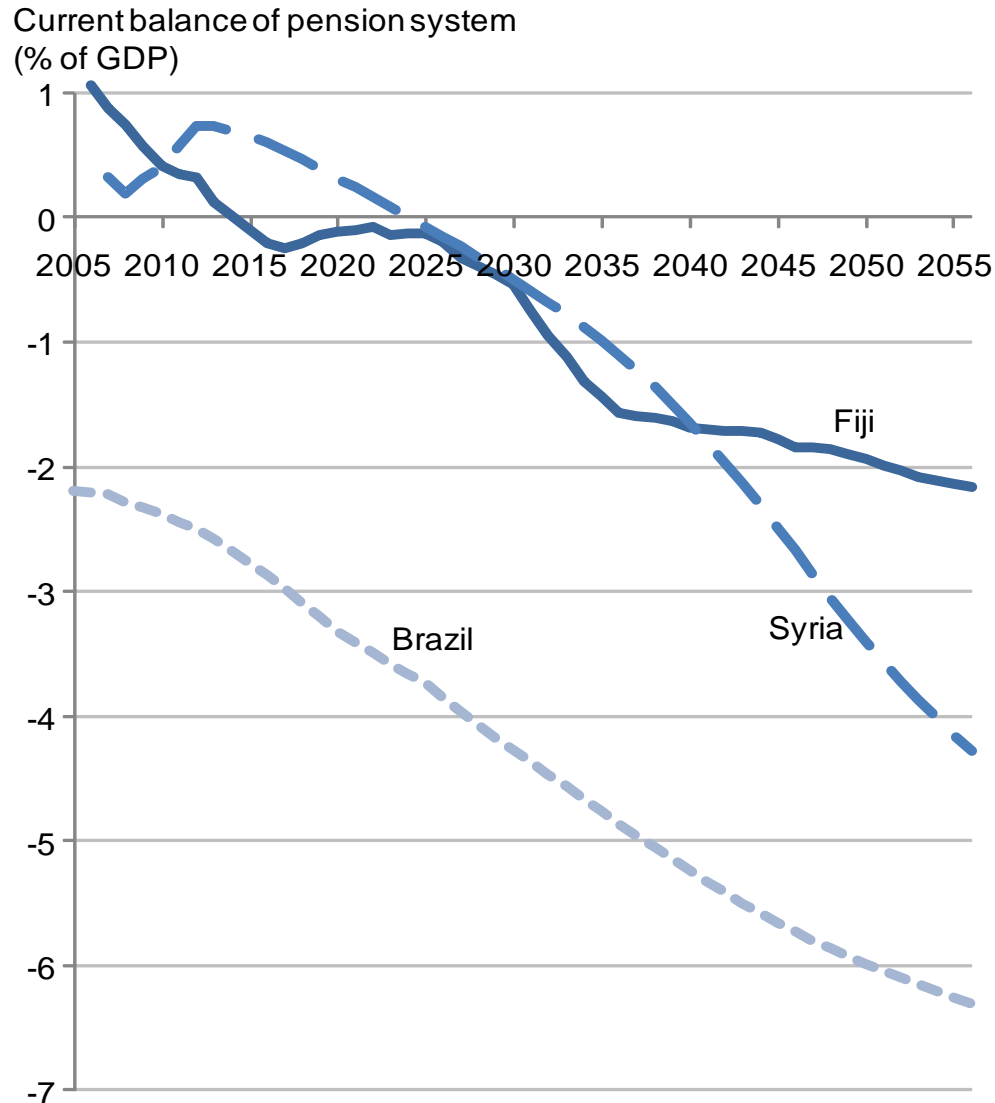
Contribution revenues



'Current balance': Expenditures minus revenues



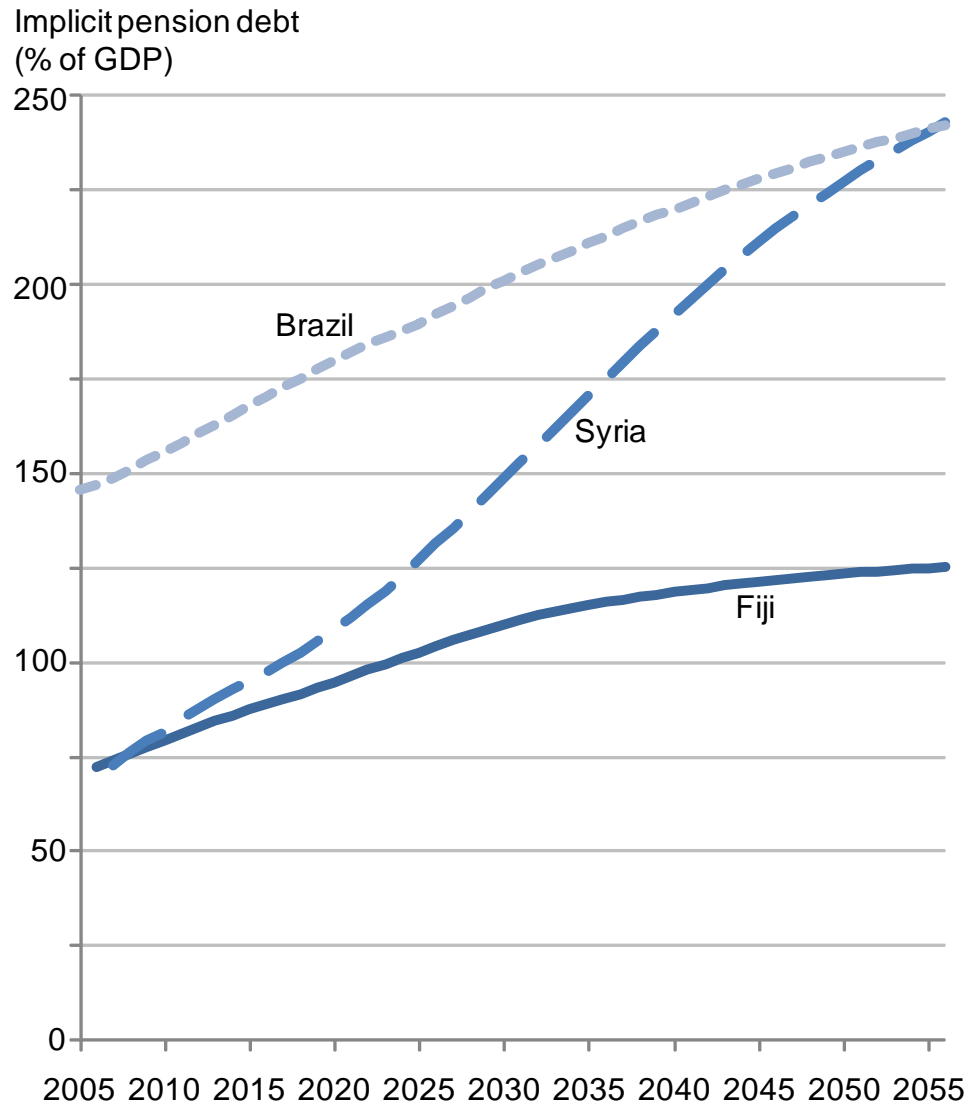
‘Current balance’: Expenditures minus revenues



'Stock' indicators

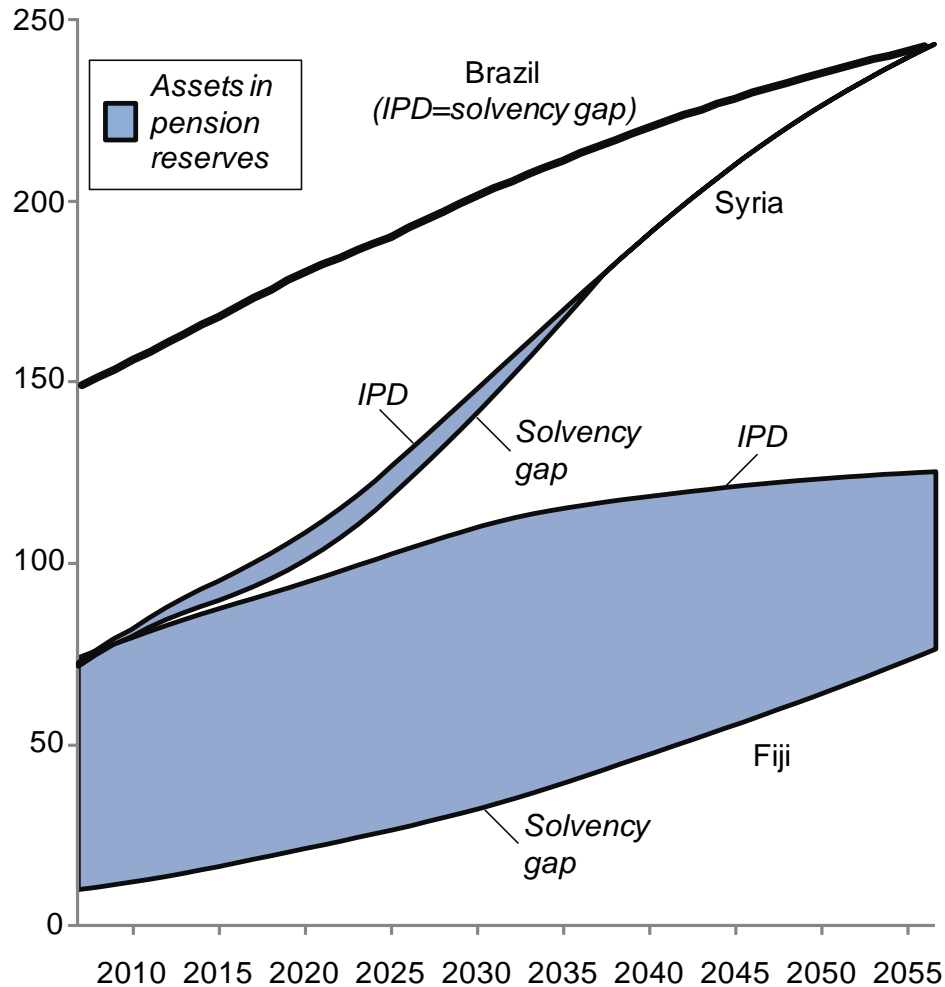
% of GDP	Brazil	Fiji	Syria
Present value pension spending (2007-2056)	489.7	233.3	152.2
Present value contributions (2007-2056)	271.9	189.0	97.7
Financing gap (2007-2056)	217.7	44.3	54.5
Implicit pension debt (2007)	148.6	73.9	72.5
Pension-reserve assets (2007)	0.0	63.8	1.1
Solvency gap (2007)	148.6	10.1	71.5
Implicit pension debt (2055)	241.0	124.9	240.4
Pension-reserve assets (2055)	0.0	50.5	0.0
Solvency gap (2055)	241.0	74.4	240.4

Implicit pension debt



Solvency gaps

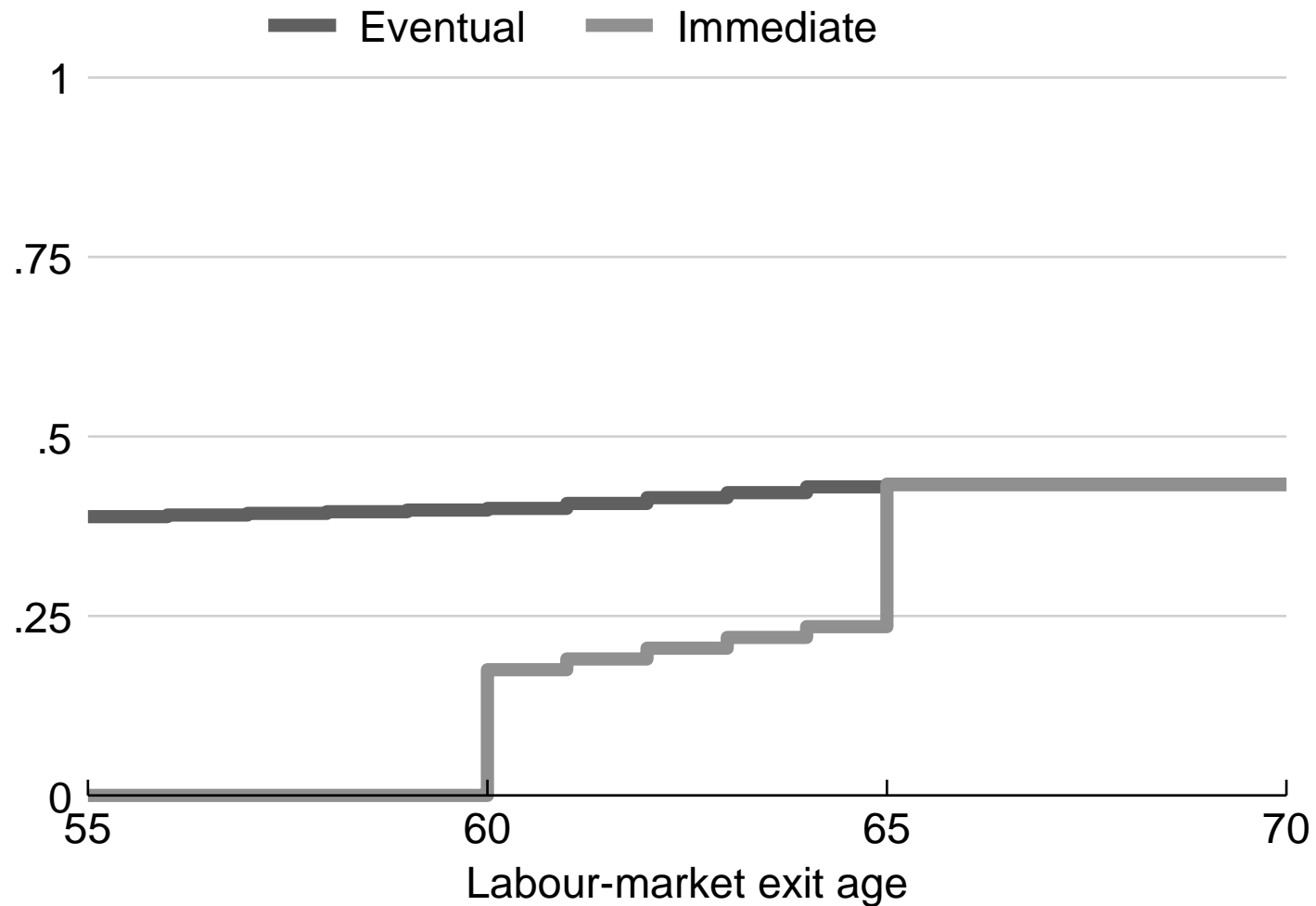
Implicit pension debt, assets in pension reserves and solvency gap (% of GDP)



Economic efficiency

**Minimising the pension system's
distortions of individual choices**

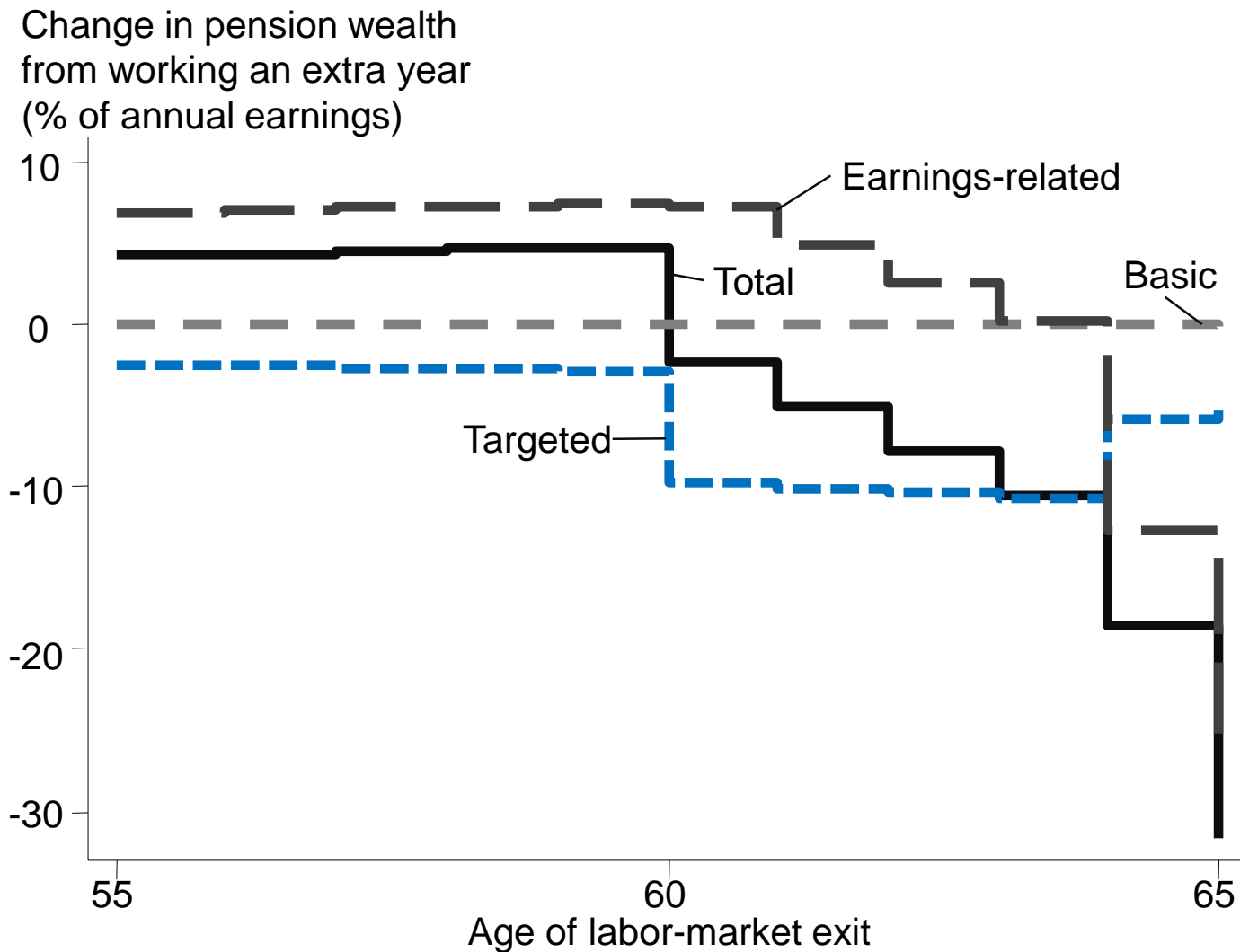
Retirement incentives: simple approach, Canada



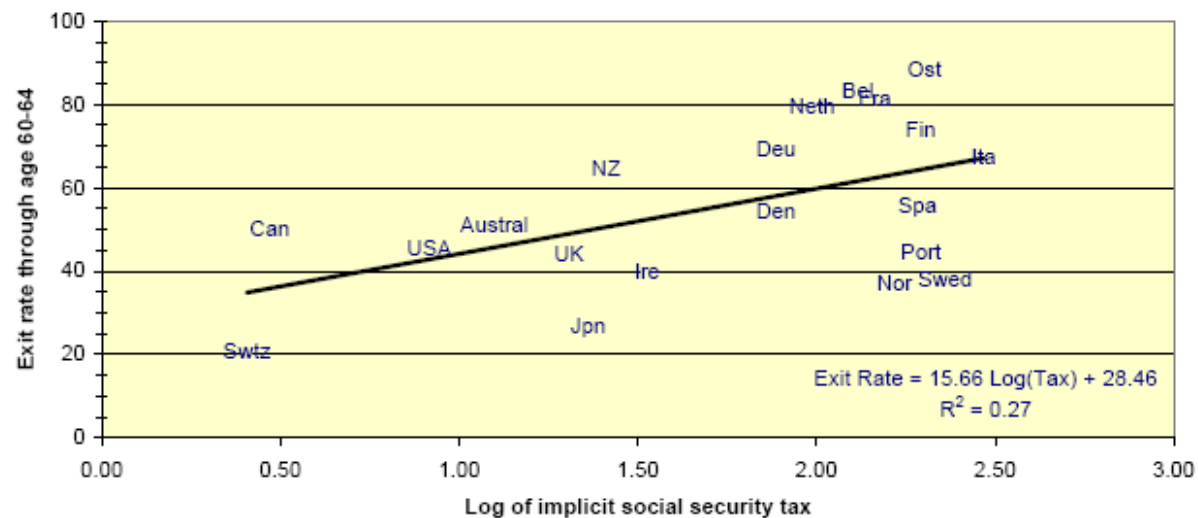
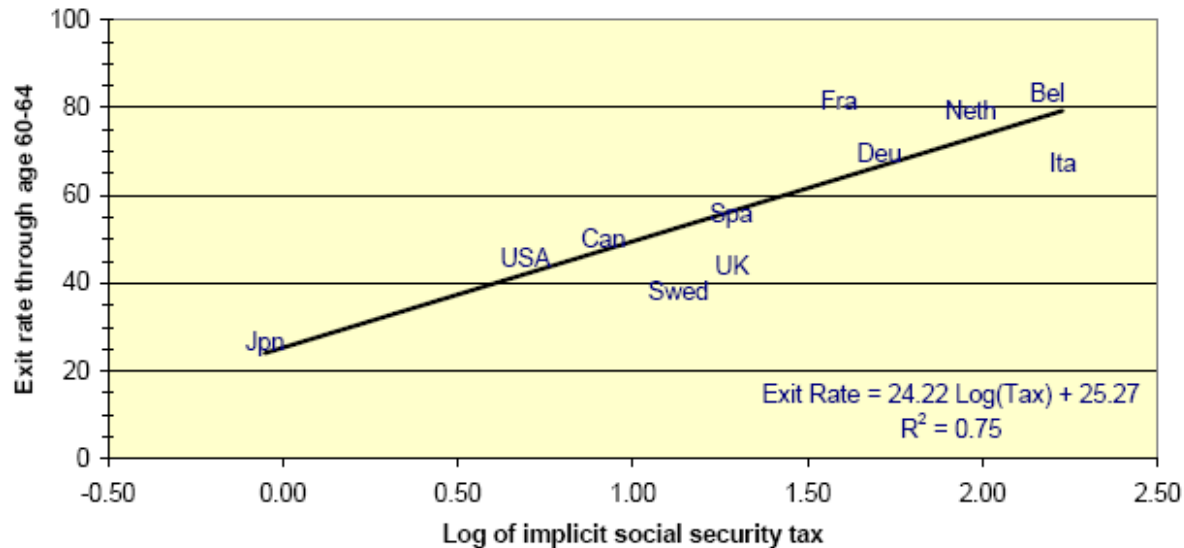
Retirement incentives: measurement

	<i>Defined benefit</i>	<i>Defined contribution</i>	<i>Points</i>	<i>Notional accounts</i>
Longer working period	<p>Extra year's entitlement</p> <p>Extra year towards qualifying conditions</p>	<p>Extra year's contributions</p> <p>—</p>	<p>Extra year's entitlement</p> <p>Extra year towards qualifying conditions</p>	<p>Extra year's entitlement</p> <p>Extra year towards qualifying conditions</p>
	<p>Valorisation of earlier years' earnings</p>	<p>Investment returns on accumulated balance</p>	<p>Uprating of pension-point value</p>	<p>Notional interest on accumulated notional capital</p>
	<p>Higher earnings replace earlier, perhaps lower, earnings in benefit formula</p>	<p>—</p>	<p>Higher earnings replace earlier, perhaps lower, earnings in benefit formula</p>	<p>—</p>
Shorter retirement duration	<p>Forgo a year's benefits</p> <p>"Actuarial" adjustment</p>	<p>Forgo a year's benefits</p> <p>Lower annuity factor</p>	<p>Forgo a year's benefits</p> <p>"Actuarial" adjustment</p>	<p>Forgo a year's benefits</p> <p>Lower annuity factor</p>
Delay in claiming	<p>Probability of dying</p> <p>Discounting</p>	<p>Probability of dying</p> <p>Discounting</p>	<p>Probability of dying</p> <p>Discounting</p>	<p>Probability of dying</p> <p>Discounting</p>

Retirement incentives: complete picture, Canada



Retirement incentives matter: Effect on behaviour



Administrative efficiency

**Assessing the cost of running
public pension systems**

Security

**Risk and uncertainty in
retirement-income systems**
