



▶ **Top 10 actuaries  
for social security**  
The 39<sup>th</sup> ASSA Board

*Simon Brimblecombe  
Services Unit, ILO Bangkok*

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1. Actuarial valuations are powerful tools
2. You need to properly resource the actuarial work
3. Garbage In Garbage Out
4. The actuarial model is only a tool
5. Strengthening the link from the actuarial valuation to policy and financing decisions
6. A Financing policy is essential
7. No 'solving' the demographic challenges with DC / individual accounts but...
8. ..Investment Governance is important
9. Social security investment in countries with limited capital markets is possible
10. RASU

# 1: The actuarial valuation is a powerful tool



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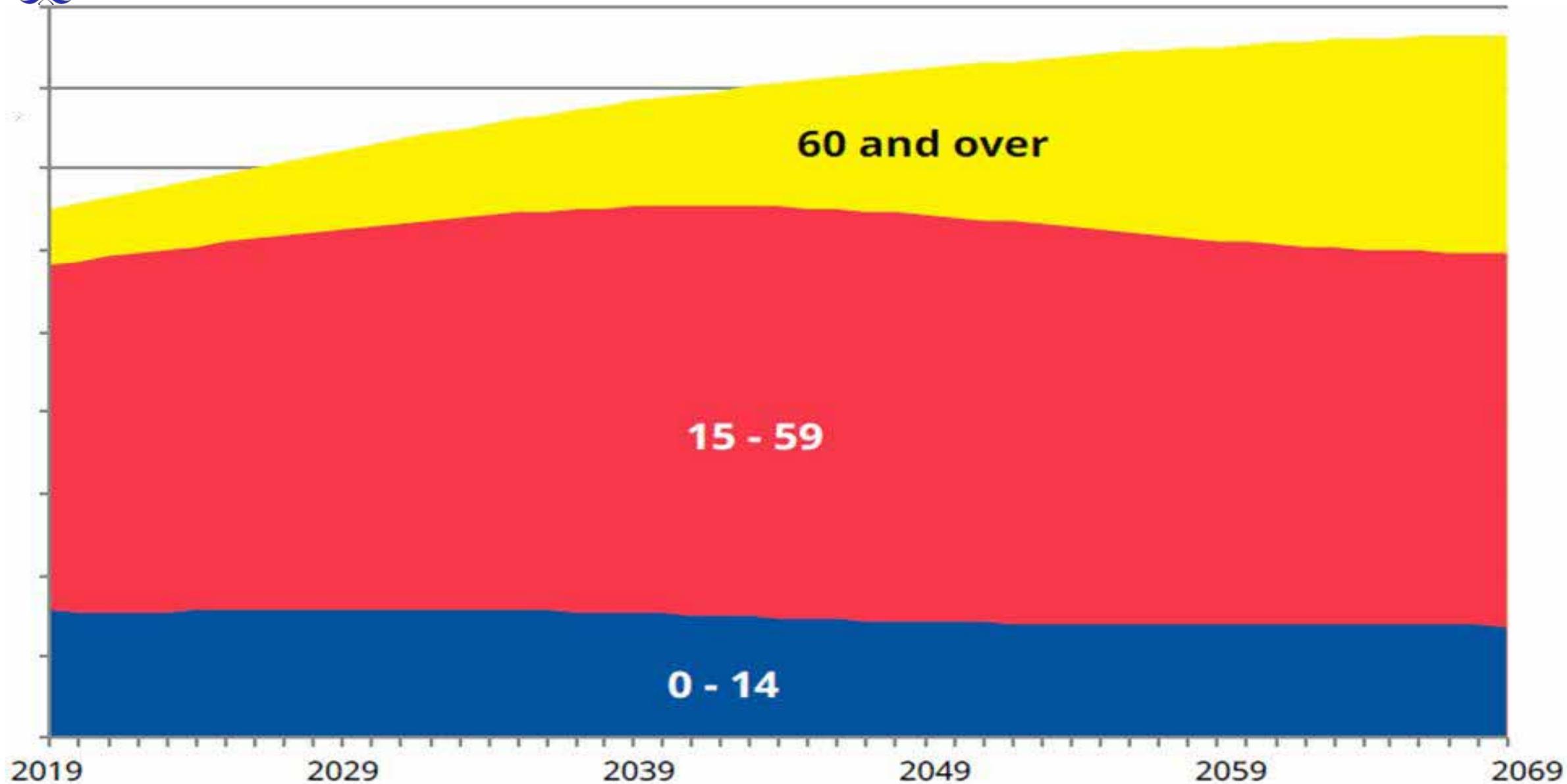
## To assess

- Financial sustainability of a system
- Coverage
- Benefit adequacy
- Financing and funding situation
- Equity and distribution of outcomes

## To understand

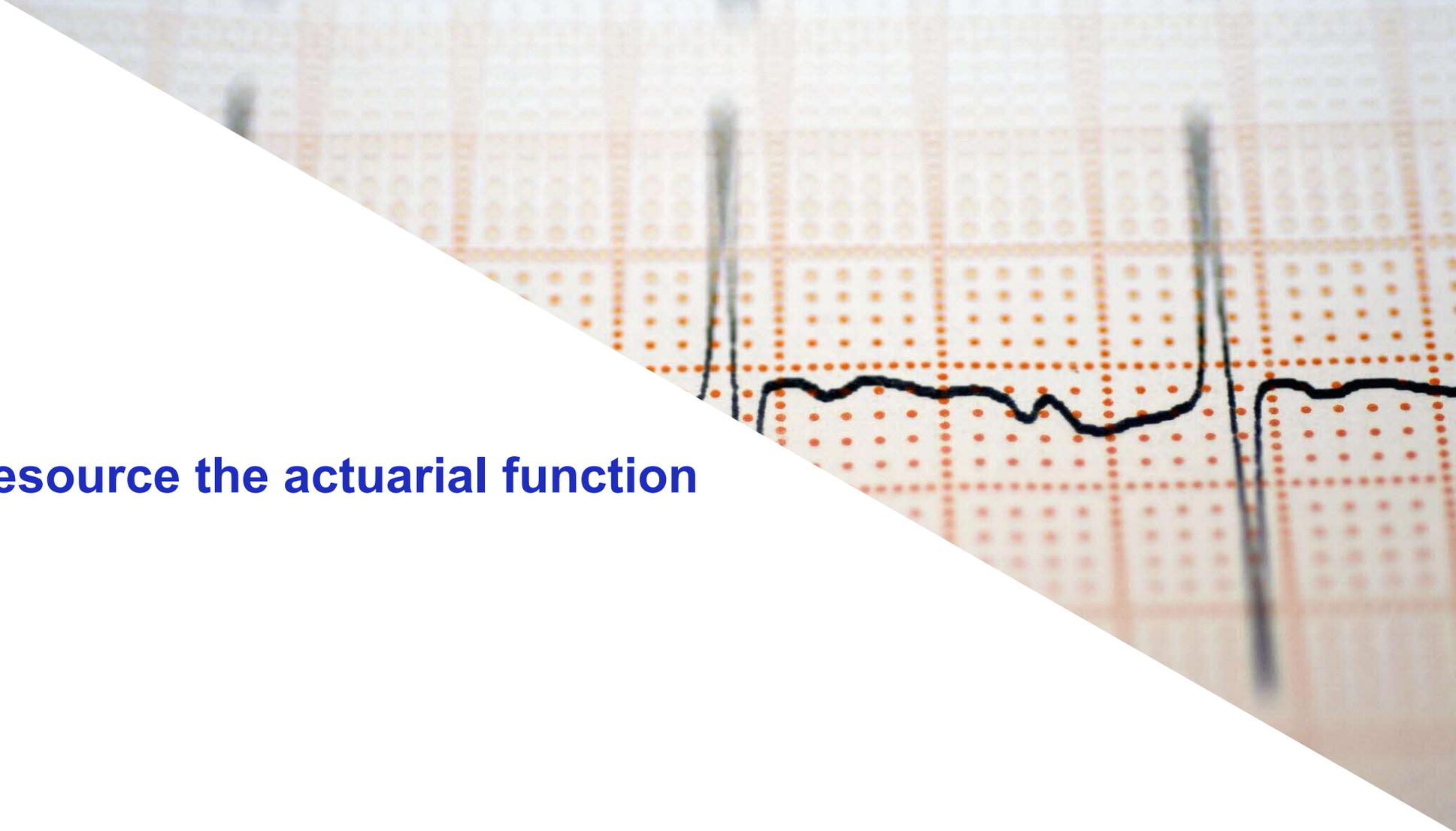
- Present and future financial development of a scheme
- Causes of present or possible future deficits
- Adequacy of benefit levels and system fairness
- Factors influencing the cost of a scheme and its sustainability

# Demographic projections





## 2: You need to resource the actuarial function



## ▶ The actuarial valuation requires qualified actuaries !

The valuation needs to follow minimum professional requirements (eg reconciliation and peer review) and an **Actuarial Opinion** signed by two qualified actuaries

*Qualified* means an actuary having completed professional examinations, met experience requirements and be undertaking continuing professional development

*“The social security institution seeks to develop the internal actuarial expertise to perform actuarial work for a social security scheme” – ILO ISSA Actuarial Guidelines*

All ILO actuarial projects provide a **legacy** of training resources and developing the actuarial function and the staff who work within it

# Steps of an Actuarial Valuation

1. Terms of reference and objectives
2. Define and mobilise required resources
3. Data collection and management (include Scheme design)
4. Past experience and data analysis
5. Setting assumptions
6. Valuation model and methodology
7. Actuarial (cash flow and demographic) projections
8. Reconciliation and review
9. Sensitivity tests and assessing reform options
10. Compliance with ILO Conventions
11. Valuation report including Actuarial Opinion plus presentation of results and recommendations

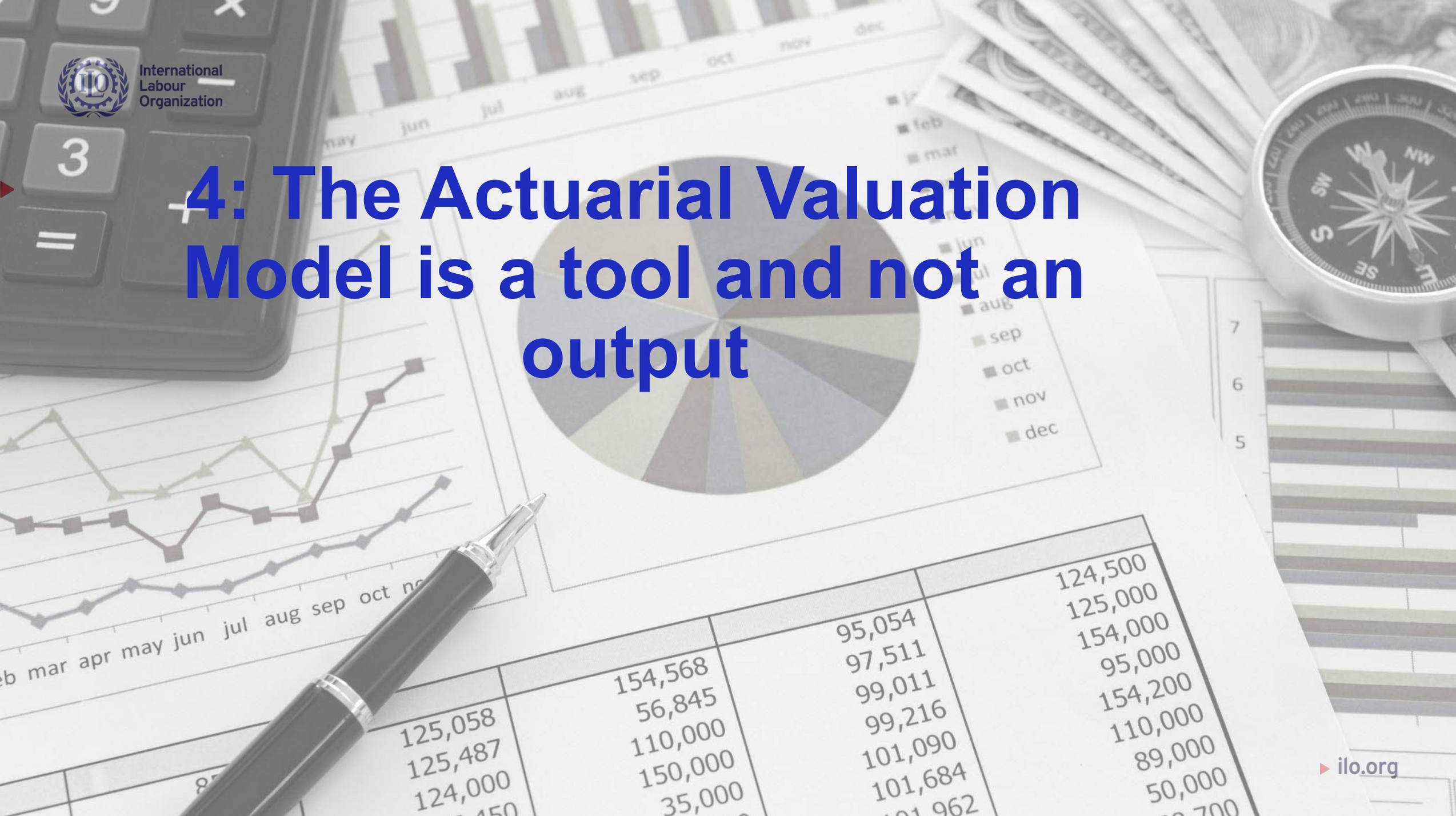
3: Simple but true...

GARBAGE IN,  
GARBAGE OUT.

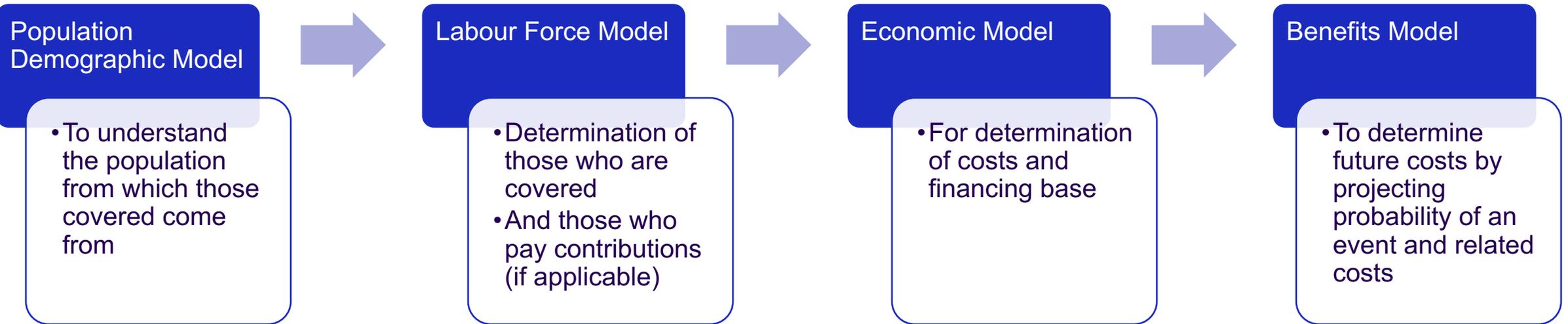
## ► Why is good data so important

- So the results are **accurate** and can be used for policy and financial decisions
- Appropriate **assumptions** are selected
- **Actuarial Opinion** can be signed off
- Analysing trends in the scheme to assess whether it is **meeting objectives**:
  - **Coverage analysed** by type of worker (eg by earnings, contributory service etc)
  - **Adequacy of benefits** by group / age / sex / earnings etc
  - **Other indicators** (eg claims rates, processing times, types of employment injury, medical inflation, compliance etc )

# 4: The Actuarial Valuation Model is a tool and not an output



# Structure of the Actuarial Model

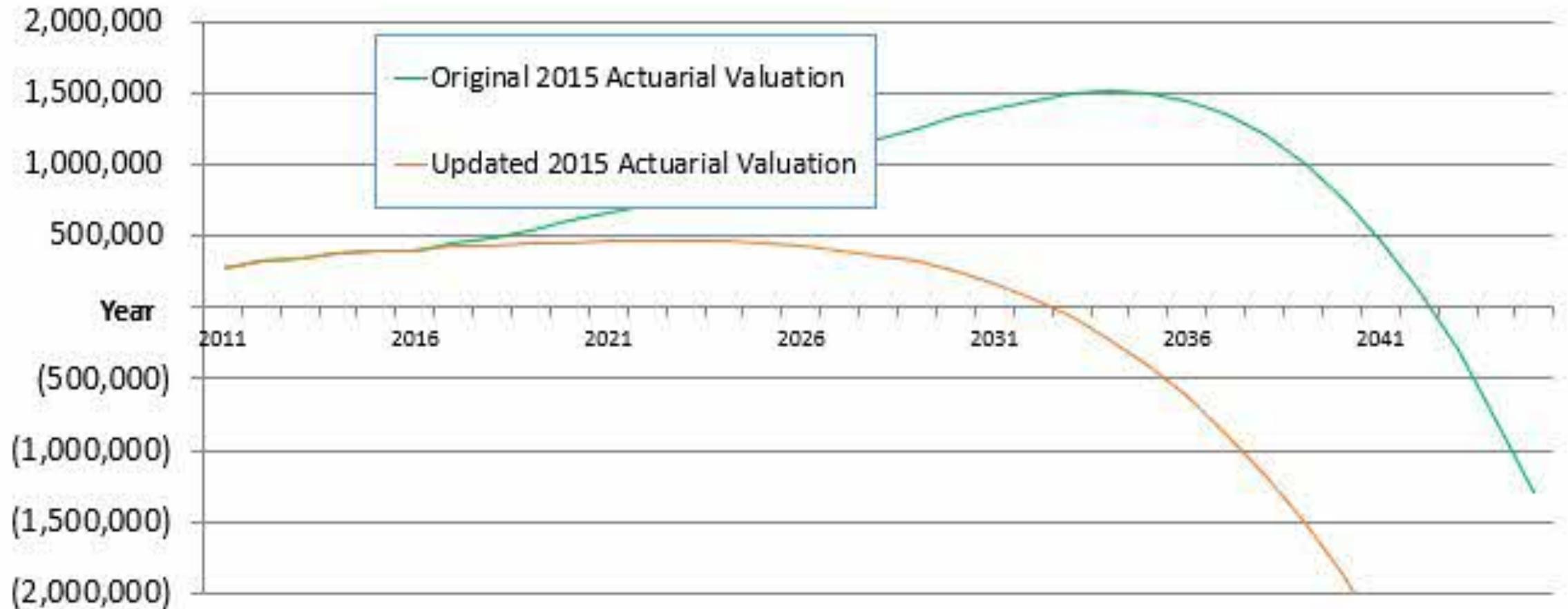


# 5: Linking the actuarial valuation to policy and financing decisions

- Canada and United Kingdom – direct link to reforms



# Increase in the pension amount: impact on reserves



# Retirement Age changes and sustainability

| Scenario        | Retirement Age                    | Year Fund runs out |
|-----------------|-----------------------------------|--------------------|
| <b>Baseline</b> | <b>Current Retirement Age</b>     | <b>2042</b>        |
| A               | Retirement age 12 years earlier   | 2020               |
| B               | Retirement age 7 years earlier    | 2027               |
| C               | Retirement age 5 years earlier    | 2031               |
| D               | Retirement age of 2 years earlier | 2039               |
| E               | Retirement age of 3 years later   | 2047               |
| F               | Retirement age of 5 years later   | 2050               |

## Case Study: Actuarial valuation

**First valuation - Good Governance, regulatory, ILO/IAA/ISSA requirements and for policy and financial decision making**

**But Data – raised more questions than answers at the start**

**We highlighted that claims data looked strange and what that meant plus other recommendations (improving reporting)**

**This will lead to better management and possibly improved benefit payment procedures**

**We also checked whether benefits met ILO Conventions – they didn't and we recommended improving and costed it**

**Other recommendations – eg experience rated contributions highlighted by international experience and costed**



**Using valuation results  
to influence policy**

# 6: Financing policy is essential

*A Financing Policy is needed because benefits will be paid out in the future & this needs to be planned*

- For example, Retirement schemes are committing to payments for the next 80 years

*Financing Policy – impacts sustainability, adequacy and equity*

- Should be documented, reviewed and approved
- Considered together with provision and reform

*From Financing Policy to Investment Policy:*

1. Actuarial Valuation → cashflow projections of benefit and expenses
2. Pay as you go rates and contribution options
3. Who pays and when is the money paid ?
4. If we pay in advance\*, how do we 'invest' the money?

► **\*We should pay (some of the cost) in advance – why ?**

Build up reserves  
because uncertainty  
and variability in  
respect of future  
commitments

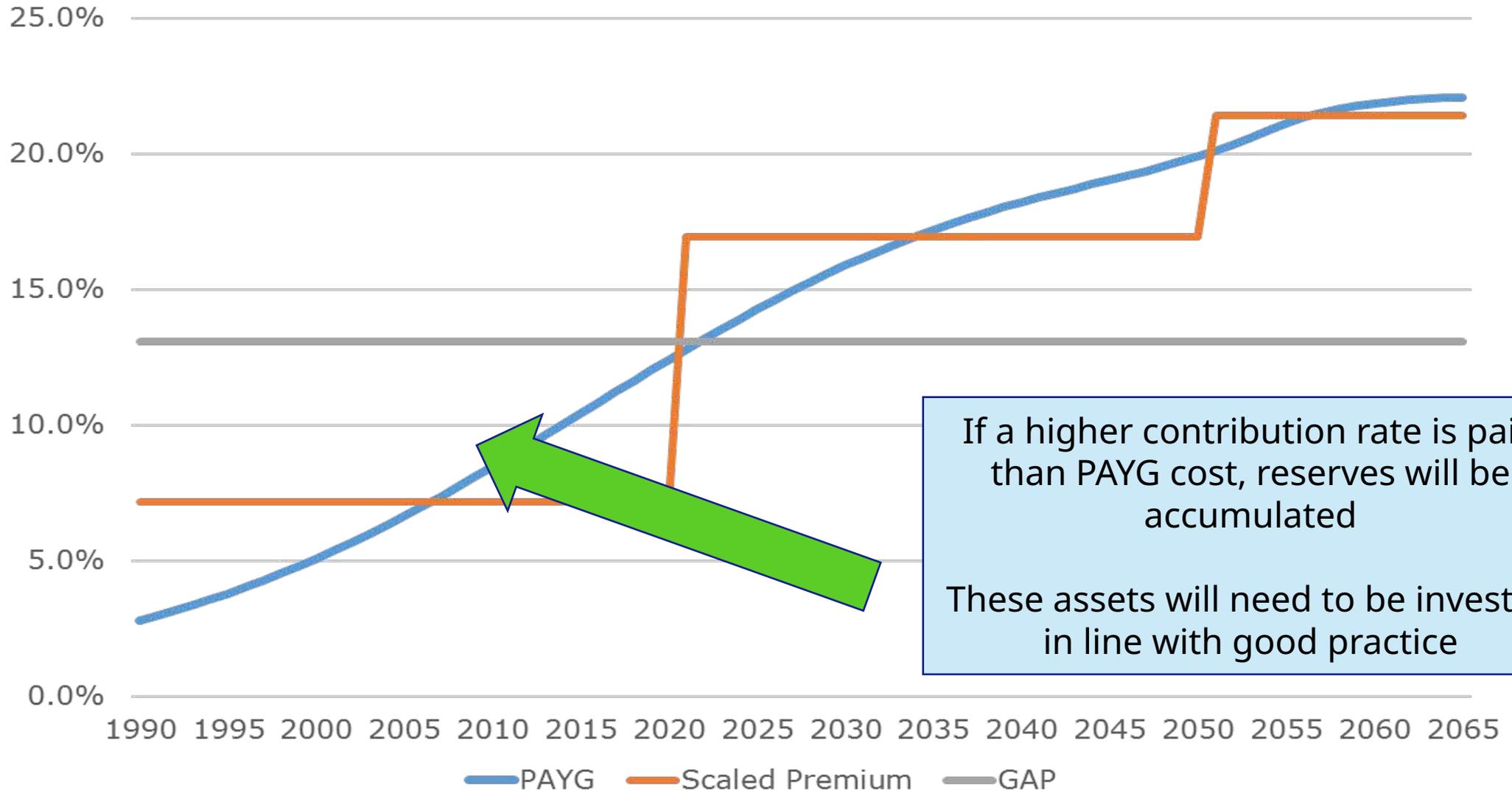
Intergenerational  
fairness

Support other  
objectives such as  
risk diversification,  
developing capital  
markets, and ESG

The social security  
institution is more  
efficient in investing  
than individuals

Source of capital (eg  
for infrastructure)

But investment  
return not a game  
changer for  
sustainability



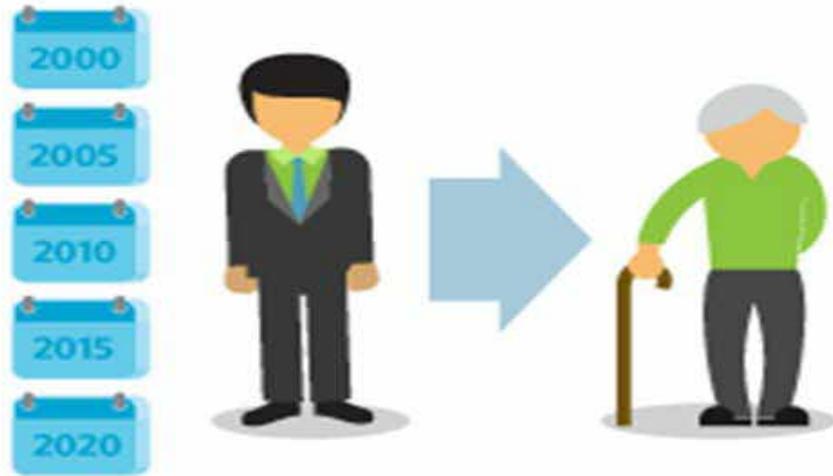
If a higher contribution rate is paid than PAYG cost, reserves will be accumulated

These assets will need to be invested in line with good practice

► **7: Individual accounts, defined contribution, better investment returns do **not** solve financial sustainability challenges for retirement schemes**



## Ageing particularly rapid in this region



**20 YEARS:**

Time needed for Viet Nam  
to make the transition  
from aging to aged

Japan: **26 YEARS**

Thailand: **22 YEARS**



**2:**

Potential support ratio of the working-age  
population to the retired population  
in the PRC by 2040

The current ratio **stands at 6.**

## ► Range of parametric reforms required: case study

### Key measures:

- Significantly reduce the **Qualifying period** for an old age pension.
- Increase the pension **accrual** rate
- Increase the **minimum pension** ( as % of minimum wage)
- **Indexation** of schemes parameters (earnings' ceiling and minimum pension)
- Introduction of minimum **survivors' benefits**.
- Adopting a **financing policy** to establish a legal obligation to increase contribution rates in the future based on specific cost indicators set out in actuarial valuations.

| Scenario           | PAYG rate |       | GAP<br>(100 years) | Year of<br>reserve<br>exhaustion |
|--------------------|-----------|-------|--------------------|----------------------------------|
|                    | 2050      | 2100  |                    |                                  |
| Base scenario      | 2.3%      | 28.2% | 10.8%              | 2069                             |
| Parametric reforms | 4.6%      | 18.9% | 14.1%              | 2120                             |

The **General Average Premium ('GAP')** is the constant contribution rate that is required to meet the expenses of a scheme over the projection period.

The **Pay-as-you-go cost rate ('PAYG')** is the ratio of total expenditure of a scheme to total insurable earnings for a given year.

## 8: But investment governance is still important

**Demonstrates that the social security institution is professional and transparent**

**Everyone is an expert in investment - are you responsibly investing member funds ?**

**Strengthen sustainability**

**Important driver of good practice in a country with undeveloped institutional investors**

## ► What are the investment objectives for your social security scheme?

- Are they documented ? Consistent with the Funding Policy ?
- Are they reasonable, realistic, and implementable?
- Are returns measurable and comparable?
- What are the Measures of risk ?
- Does Investment Policy take into account liabilities ?
- How many objectives should a scheme have and at what level of detail are they most useful?

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▶ Mission, beliefs and (risk/return/other) objectives of the SSI defined and signed off

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Summary of constraints – liability profiles from the actuarial valuation and other restrictions

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Data collection on asset classes (risk and return plus other characteristics)

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Setting assumptions with approval from the SSI

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Collection and analysis of relevant international experience

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Analysis of different SAA options based on a standard risk & return methodology

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Recommendations based on the above steps

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Implementation procedures including transition (depends on governance capacity)

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Ongoing measurement, review and re-assessment

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# 9: Investment in limited capital markets – what is the approach ?



|         |         |         |         |
|---------|---------|---------|---------|
| 125,058 | 154,568 | 95,054  | 124,500 |
| 125,487 | 56,845  | 97,511  | 125,000 |
| 124,000 | 110,000 | 99,011  | 154,000 |
| 150     | 150,000 | 99,216  | 95,000  |
|         | 35,000  | 101,090 | 154,200 |
|         |         | 101,684 | 110,000 |
|         |         | 101,962 | 89,000  |
|         |         |         | 50,000  |
|         |         |         | 700     |

## Environmental

**Climate change,  
pollution and  
biodiversity**

For example -  
avoiding coal  
miners; investing in  
renewable energy

## Social

**Supporting well  
being of workforce,  
communities and  
society**

For example -  
avoiding use of child  
labour; investing in  
companies who  
support charities

## Governance

**Ethical and  
transparent  
management**

For example -  
responsible pay,  
ownership etc



International  
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Organization

*Social security reserve funds act as the driver of good governance in such projects*

*What is the return on investment ? What are the risks ?*

*Effective risk management function and good investment governance needed*



Infrastructure investment



# Investment management needs to be based on effective investment governance structures and processes



# ILO Regional Actuarial Services Unit (RASU)



**The ILO Actuarial Services Facility in Bangkok**  
Providing actuarial support for countries  
and institutions in the Asia and Pacific region



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Organization



## At a glance

The ILO has been providing actuarial services to develop and strengthen its member states' social security systems since the 1940s. Its actuarial work is highly respected in member States for its quality and independence.

The new ILO actuarial services facility in Bangkok continues this tradition and combines it with extensive regional knowledge, greater reactivity and practicality for countries and institutions in the region and access to excellence in local and international resources.

The facility partners with institutions to deliver actuarial services and build up local expertise to contribute towards the development of actuarial capacity within institutions.



## Why actuarial valuations are so important

Carrying out actuarial valuations and analysis are essential in ensuring that the objectives of social security systems are met. Actuarial input ensures that appropriate policies are put in place to support adequacy of benefits, strengthen sustainability and support fairness.

But actuarial valuation projects and work should be properly managed and cleared by a qualified actuary\*. Work needs to comply with national actuarial standards of practice or the International Actuarial Association's actuarial standards of practice (ISAP-2) and reflect the ILO-ISSA Guidelines on actuarial work for social security.

The ILO regional actuarial services facility in Bangkok provides services and support to countries in the Asia-Pacific region to ensure actuarial work carried out meets these standards. In addition, we recognise that many social security institutions have excellent resources and we can work with them to support long term capacity and knowledge building within the institution.



\* as defined in national actuarial standards of practice or ISAP-2.



International  
Labour  
Organization

## The Regional Actuarial Services Unit

Report on activities from 1 January to 31 December 2021



### Highlights:

- Actuarial valuations, policy, extension, pension reform, communication, HR and investment work in Thailand
- E-coaching and 'Train the Trainers' in China
- Finalising actuarial valuation and policy work related to a new Unemployment Insurance scheme in Indonesia
- Employment injury actuarial valuation and training and investment capacity building in Malaysia
- Shock responsive social security assessment in Myanmar
- Actuarial valuation work & capacity building in Vietnam
- Training and preparation of actuarial valuation of three schemes in Cambodia
- New actuarial valuation of three schemes in Nepal

### Overview

The ILO Regional Actuarial Services Unit (RASU) was set up on 1 July 2019 in Bangkok, Thailand.

The Unit provides actuarial and investment technical support for social security institutions in the region. This work includes actuarial valuations, policy analysis, training, capacity building of actuarial and investment governance resources and investment technical support. The work feeds into analysis and decisions on costing and design of new schemes, shock resistant measures for social security,

*The RASU partners with institutions to deliver actuarial services, provide technical advice and build up local capacities and resources*

## Why ?

- Increasing demand for actuarial and investment work -> ILO uniquely positioned to do this
- Supports evidenced based policy and financing decision making -> strengthening social security
- An effective way for social security institutions to influence policy, reform and financial debate -> evidence based policy
- Strengthens actuarial capacity, expertise and resources within institutions -> leaving a legacy within social security institutions

