

# IOPS work on controlling investment risk in DC pension funds

Liviu Ionescu – CSSPP (Romania) / IOPS Secretariat

**2<sup>nd</sup> IOPS Regional Workshop on Pension Supervision for  
CEE, CIS, CAUCASIA and Central Asia Regions,  
10-11 May 2012  
Skopje , Macedonia**

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# Background

Because:

- DC plans transfer the risks to individual members,
- Investment risk – the most important risk borne by individual members of DC funds.
- In most DC plans no form of guarantee is given by the pension provider,

investment risk is a major focus for most supervisory authorities.

In DC systems, members should choose the pension fund with the investment policy which best suites their retirement needs. However, as Impavido et al (2009) state: *“There is ample evidence that, even in normal times, individuals generally lack the necessary skills to monitor portfolio management and, therefore tend to make an uneducated selection of portfolios during their lifecycle.”*

# Approaches on supervising investment risk

- The main focus of supervising authorities is on how pension funds are managing investment and other risks.
- ***Main approaches*** worldwide:
  - Transparency – aiming for informed participant choice and effective competition between pension plans and funds, resulting in good investment practice;
  - Encouraging plans to follow best practice in their management processes and risk management relating to investment through supervisory guidance;
  - Controlling the amount of risk in the fund by enforcing quantitative limits set by regulation, supervisory guidelines or fund rules regarding the composition of the fund portfolio; or
  - Controlling the members' exposure to risk by mandating and enforcing specified types of product design.

# IOPS work on supervising investment risk

IOPS work on supervising investment risk focuses on the following mechanisms:

- risk management systems (including investment strategy)
- quantitative limits
- product design (life-cycle funds)
- risk limits (VaR)
- guarantees
- income target rates

# Risk management systems

- In DC systems, the emphasis is on the processes rather than outcomes, that's why controlling investment risk will mean imposing a requirement for certain *risk management systems to be in place* within pensions funds.
- A focus on process can potentially cover investment efficiency as well as the riskiness of asset allocation.
- “*Prudent person principle*” – becoming a fundamental principle underlying the regulation and supervision of pension plan investments.
- *Appropriate investment strategy* – key point of investment risk management and should consider:
  - Asset allocation
  - Performance objectives
  - Characteristics of the liabilities and maturity of obligations
  - Liquidity needs
  - Risk tolerance, etc.

# Quantitative investment limits

- Quantitative investment limits should be combined with the prudent principle rule – the two are not mutually exclusive.
- In most countries there are limits on investment in the sponsoring employer and restrictions on the use that can be made of illiquid asset classes and derivatives.
- Eastern Europe and Latin America limits on the allocation to specified asset classes are more often still in place.
- Easy to supervise compliance with quantified limits when you have few pension plans, but more difficult for countries with hundreds of funds. In these countries reliance on the prudent person is more common.

# Product design

- Designing specific features of funds – a more sophisticated way of targeting quantitative investment limits.
- One approach is the multi-fund model (Latin America and Eastern Europe).

**Table 2: Equity investment limits by type of fund option in selected countries<sup>1</sup>**

	Option 1	Option 2	Option 3	Option 4	Option 5
Chile <sup>2</sup>	40%-80%	25%-60%	15%-40%	5%-20%	0-5%
Mexico	30%	25%	20%	15%	0%
Hungary	100%	40%	10%		
Slovak republic	80%	50%	0%		
Estonia	50%	25%	0%		

Source: OECD

Notes: (1) Selected countries have mandatory 'pure' DC systems (2) In Chile, equity investments in each fund option are subject to both a floor and a ceiling.

# Value at Risk

- Another way some supervisors are trying to control investment risk is by controlling risk exposure. This is the case of the Mexican supervisor CONSAR who uses VaR.
- VaR is defined as the maximum loss in a portfolio with a given probability or confidence interval (typically 5%) and over a given planning horizon.
- VaR can provide the fund manager and the supervisor with a summary measure of market risk to which each pension portfolio is exposed. This single number summarizes the portfolio's exposure to market risk as well as the probability of an adverse move.



# Value at Risk – Pros & Cons

- Pros: it provides a common measure of risk across different positions and risk factors and introduces an aspect of probability
- Cons:
  - ignores tail losses
  - short investment horizon
  - source of significant instability in the market, amplifying pro-cyclicality

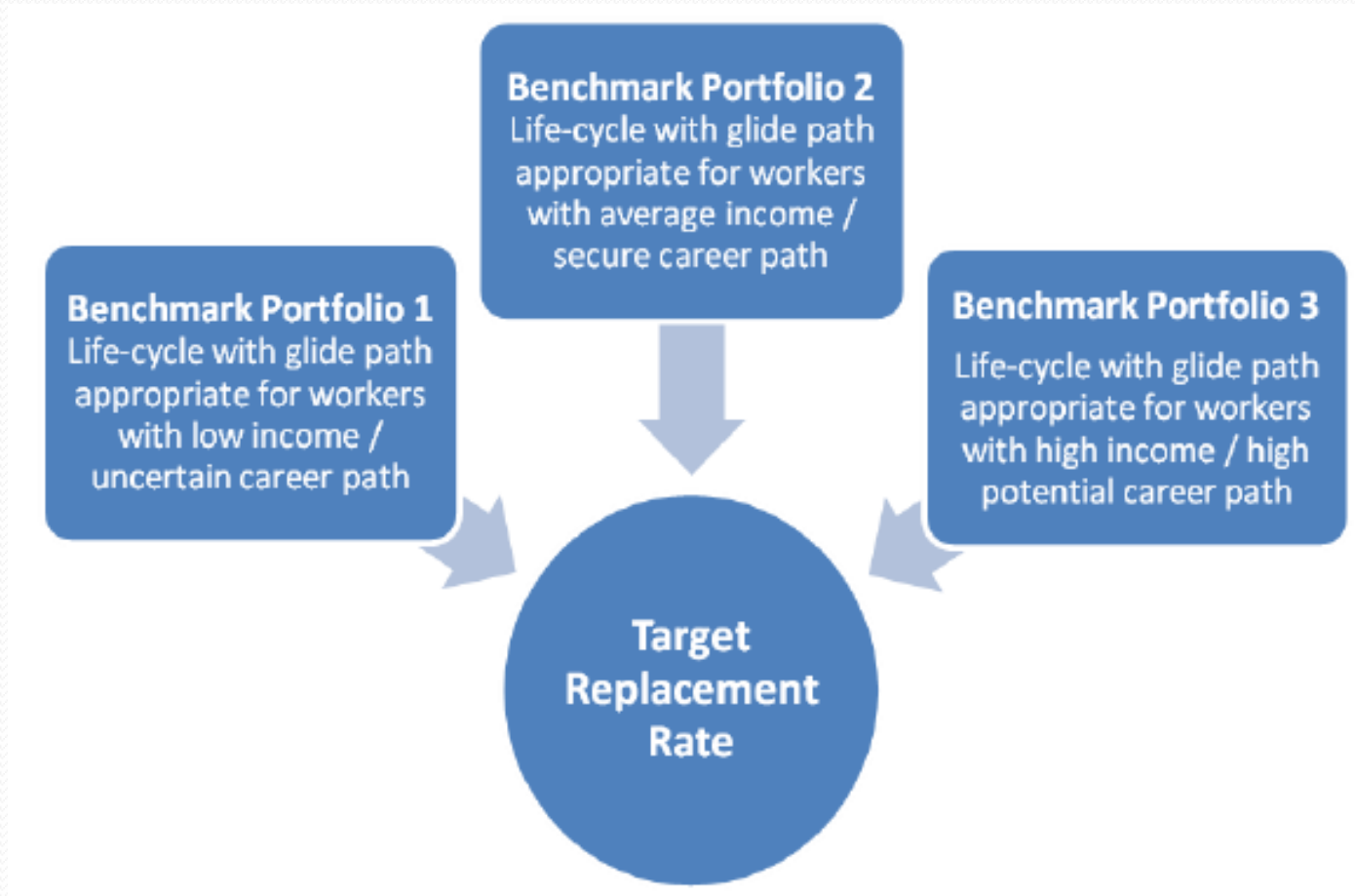
# Guarantees

- Another way of controlling investment risk – by requiring a guaranteed return on the fund.
- Romania (all mandatory funds) and Slovakia (conservative funds) – absolute guarantees of the capital invested;
- Germany – capital guarantee (no negative returns);
- Switzerland – mandated absolute rate of return guarantee;
- Chile – if the pension generated by the individual account is too low relative to the industry, a government subsidy is provided to make up a basic pension level (for the 60% of the population with lower incomes);
- Poland – the mandatory minimum rate of return for open pension funds is equal to either 50% of the weighted average rate of return of all open pension funds or that weighted average rate of return minus 4%, whichever is lower;
- Minimum absolute return requirements are relatively rare in voluntary DC systems. For example, Belgium allows different levels of guarantee, whilst Italy requires a guarantee in the default fund. Many schemes in Denmark have a de facto requirement for a guarantee due to union involvement.

# Target-based Risk-measures

- Measurements of risk should move away from short-term investment returns, seen as not appropriate measures for a pension fund which has a long-term investment horizon.
- Academic research suggests that government policy set long-term investment targets, such as replacement rates.
- There are some opinions among researchers stating that DC pension systems should be structured „from back to front“, i.e. from desired outcomes to required inputs (via „dynamic programming“), with the goal of delivering an adequate, targeted, pension with a high degree of probability.
- DC funds should in effect be made more like DB – but with a targeted rather than a guaranteed benefit.
- This type of mechanism is still theory, no supervising authority is doing this in practice.

# Target-based Risk-measures



# Conclusions

- There are various ways of controlling investment risk in DC pension plans.
- Risk management systems need to be in place within the pension funds.
- Prudent person rule should be used in combination with quantitative investment limits.
- Other ways of controlling investment risk: product design, VaR, guarantees, target-based risk measures.
- Below: Mechanisms used for controlling investment risk in selected countries

# Conclusions

Country	Information Provision/ Transparency	Promote Good Practice	Quantitative Limits	Product Design	Guaranteed Returns	Control risk levels
<b>Mandatory</b>						
<i>Chile</i>	✓	✓	✓	✓	* 51	
<i>Mexico</i>	✓	✓	✓	✓	✓	✓
<i>E. Europe</i>	✓		✓	Common		
<i>Switzerland</i>			✓		✓	
<i>Australia</i>	✓	✓				
<i>Nigeria</i>	✓	✓	✓			
<b>Voluntary</b>						
<i>USA</i>		✓		✓		
<i>Denmark</i>			✓			✓
<i>Ireland</i>	✓		PRSA			
<i>Israel</i>			✓			
<i>Kenya</i>		✓	✓			
<i>South Africa</i>		✓	✓			
<i>Italy</i>	✓	✓	✓	✓	✓	
<i>UK</i>	✓	✓				