

Risk sharing in hybrid DB systems

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Introduction

- Diversity of pension systems worldwide
 - Public pay-as-you go (PAYG) schemes
 - Corporate defined-benefit (DB) schemes
 - Individual defined-contribution (DC) schemes
 - Dutch stand – alone hybrid DB-DC schemes
- Main policy questions
 - Optimal contribution and asset allocation
 - Collective versus individual decision making
 - Collective versus individual risk taking
 - Impact of costs of pension provision
 - Decumulation of pension wealth

Plan for the presentation

1. Briefly summarize the academic knowledge on the main policy questions
2. List the main advantages and disadvantages of traditional DB and traditional DC plans
3. Explain the current Dutch stand-alone hybrid plans
4. Advantages and disadvantages of such plans
5. Elaborate on the current policy discussions in the Netherlands

Academic knowledge on main policy questions



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Optimal contribution and asset allocation rules

- Dominant model is life cycle model assuming more or less risk-free human capital and fixed retirement date
 - Consumption is then to be smoothed over the life cycle, i.e. substantial contribution at young age
 - The young are to take substantially more investment risk than the elderly (as in life cycle funds)
- If the second pillar scheme is the dominant pension provision quite substantial contribution rates are required
- Conclusions to be reconsidered in case of substantial human capital risk (e.g. unemployment), liquidity constraints, flexible retirement dates
- *See Giovanna Nicodano's presentation tomorrow*

Collective versus individual decision making

- Main advantage of individual decision making is that individual information can be incorporated: tailor-made solutions
- Main disadvantage of individual decision making is that individuals are not adequately trained to take such decisions and prefer to avoid them
- Strong recent evidence that adequate defaults (e.g. collective determined) have a lot of impact on adequate decision making and combine the advantages and disadvantages of collective / individual decision making
 - Automatic enrollment, savings percentage, asset allocation, annuity choice,

Collective versus individual risk taking

- Pension provision is inevitable related to risk taking:
 - Equity market risk
 - Interest rate risk
 - Inflation risk
 - Longevity risk
- Many risks can be shared through international financial markets
- Other risks can only be shared through collective agreements;
 - Longevity risk (for now)
 - Inflation risk (largely)
- Through collective arrangement risks can also be shared with subsequent generations

Impact of costs of pension provision

- Because of the very long run character of pension products annual cost levels are extremely important
- Assuming an average duration of a pension contribution of 30 years a 50bp (100 bp) decrease in annual costs improves pension income by 15% (30%)
- By their very nature choice options and options for competition will increase the cost level of pension products substantially

Decumulation of pension wealth

- Strong case in favor of decumulation as pension income until death: insurance against longevity risk
- Counter arguments:
 - Irreversibility of annuities and liquidity needs
 - Inadequate annuity menu's
 - Bequest motives
- Whenever guarantees (in annuities, but also in investment products) are provided it seems crucial to state them in real terms rather than nominal ones

Welfare loss of sub-optimal contracts

Measure of welfare loss:

- Annual change in consumption in reference contract that generates same welfare level as contract considered
- Reference contract: First best contract without intergenerational solidarity
- No use of equity exposure at all -8.5%
- Risk aversion level of 3 imposed -5.0%
- Implementation cost of 0.3% -1.2%
- Implementation cost of 1.0% -4.0%
- Fixed asset allocation -5.3%
- Fixed contribution rate -6.6%

Intergenerational solidarity

- Additional risk sharing is possible if trade is possible with non-overlapping generations
- This can not be contracted on financial markets; buffers (and deficits) of collective pension schemes aim to achieve this
- Welfare gain of 6.2% due to intergenerational risk sharing in optimal (age dependent) contracts if agent participates fully in investment risk 15 years before entry to labor market
- Note that in this argument political risk is ignored !

Advantages and disadvantages of traditional plans



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PAYG systems e.g. in the large continental European countries

- Large PAYG systems are not sustainable in current form
 - Vulnerable to lower fertility and increase in life expectancy
 - After crisis government deficits already severely increased
- More funding
 - Less investment in human capital calls for more investment in financial capital
 - Better diversification of financial, political and demographic risks
- How more funding?
 - Focus PAYG on poverty alleviation in old age
 - Lower benefits for middle- and higher incomes
 - Higher age at which benefits become available
 - Gradual reforms to protect currently old
 - Incomplete indexation or gradually higher retirement age³

Corporate defined-benefit plans

- Guarantees (DB) become more expensive
 - Aging and maturing of pension schemes
 - Pension risks dominate core activities
 - Accounting (IFRS) enhances market discipline
- More flexible labor markets and complete capital markets
 - Back-loading (aimed at bonding) harms portability and exposes workers to credit risk
 - Diversify risks in capital and labor markets
 - Mandatory pension contract is identical for all
- Incomplete risk-sharing contracts
 - Who owns the surplus?
 - Governance problems: conflicts of interests

Individual DC plans as alternative ?

- Imperfect individual decision making
 - Financial illiteracy and complex decisions
 - Procrastination and lack of will power
 - Marketing costs: products are sold rather than bought
- Imperfect governance
 - Agency issues: lack of discipline
 - Lack of bargaining power buyers
 - Inadequate product design
 - Excessive choice
 - High expenses
 - Imperfect risk management (e.g. conversion risk)
- Imperfect markets
 - Lack of financial instruments to trade macro risks
 - Longevity, standard-of-living risk, inflation
 - Large transaction costs for some asset classes
 - Incomplete annuity markets: selection

The Dutch stand-alone hybrid plans



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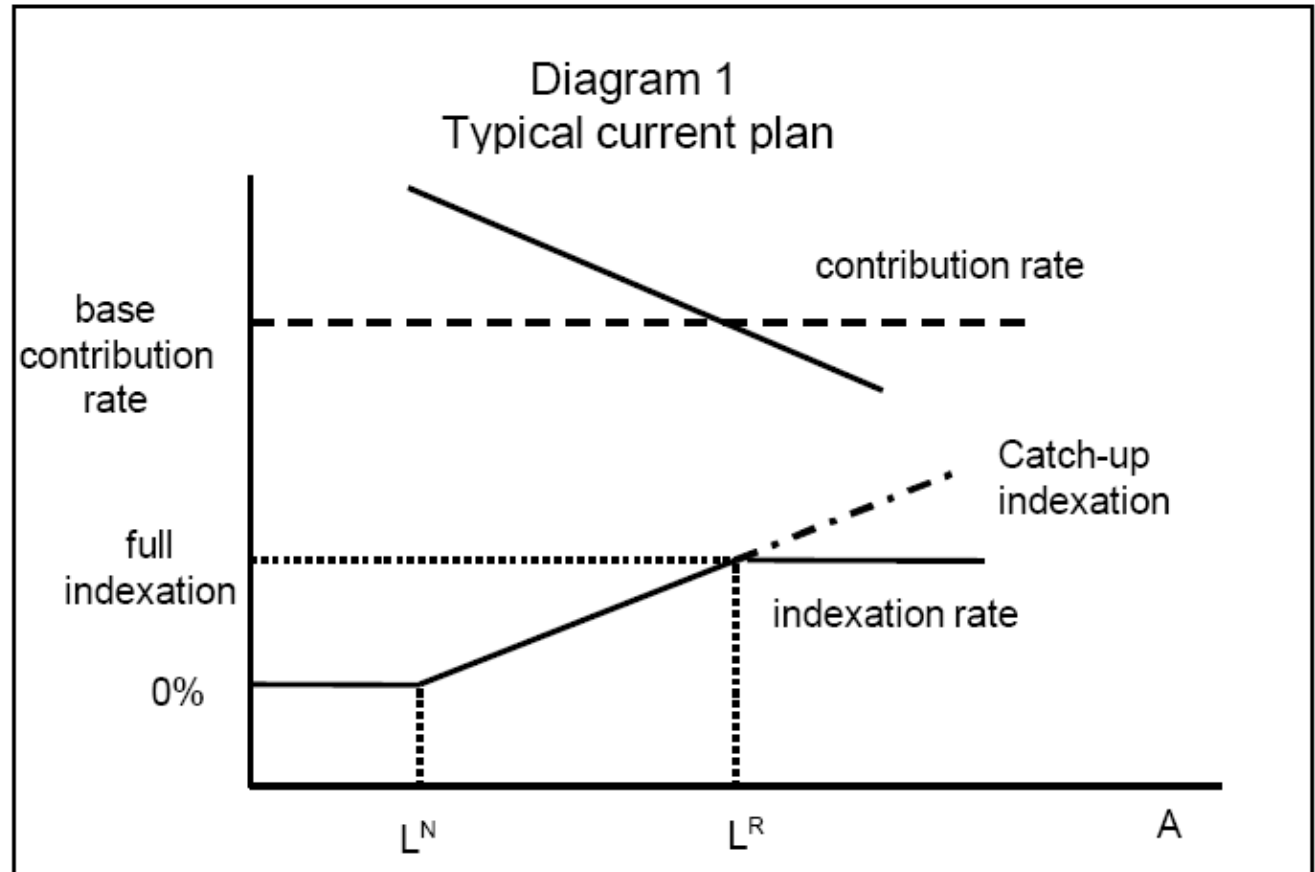
An alternative for traditional DB and DC: stand-alone funds

- Collective mandatory plan to
 - reduce marketing costs
 - protect against behavioral biases
 - set adequate defaults
 - implement more advanced strategies
 - share non-traded risks (e.g. long term conversion risks)
- No risk taking by sponsor;
- Strict solvency rules: schemes are to be fully funded
- Risks shared by all participants: conditional indexation
- Average pay to avoid value transfer to steep careers
- Avoid implicit taxes: premium based on market value of new pension rights
- Portability assured

Conditional indexation and recovery contributions

- The pension promise in the Netherlands consist of two parts:
 - A guaranteed (nominal) pension income as of retirement
 - Compensation of inflation (“indexation”) whenever the value of the assets is adequate relative to the value of the liabilities
 - Implicit life cycle element due to horizon for inflation erosion
- Cost effective (actuarially fair) contribution rates are charged for new entitlements, however
 - Recovery premiums (intergenerational risk sharing) in case of inadequate funding (to small solvency buffers)
 - Contribution reduction only if all indexation ambitions (including those from earlier years) have been realized

Policy ladder



Strengths Dutch sector funds

- Stand-alone funds
 - No credit risk sponsor: diversify risks
 - Clear ownership of assets: members rather than firms
- Delegation of complex choices to cooperatives run in the interests of members
 - Trust: Non profits and involvement employers
- Delegation to professionals who can discipline for-profits suppliers
 - Low expenses: competition at wholesale level
- Advanced risk management
 - Integrate accumulation and decumulation
- Completion of financial markets
 - Generations trade risks that are not yet traded on markets (longevity, standard-of-living)
 - Pooling of longevity risks avoids selection

Current policy discussions



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Further innovations Dutch sector funds

- More complete risk-sharing contracts
- More emphasis on purchasing power of entitlements
- More advanced risk sharing among generations
- More flexibility to absorb risks
- Link retirement age and longevity

More complete contracts

- Clarify ownership 'buffers'= indexation reserve
 - What happens if (nominal) funding rate falls below 105% or above 140%?
- Policy ladder is guideline and does not have legal status
 - Political risks: discretionary power board

More emphasis on purchasing power

- More symmetry between “hard” and “soft” entitlements
 - Because of long run nature of pensions inflation compensation is crucial
 - Currently the nominal guarantees are dominant though
 - Matching nominal guarantees makes entitlements vulnerable to inflation risk
 - Conflict of interest between groups of participants:
 - De – risk (reduce e.g. equity exposure)
 - Skip indexation (or even cut benefits)
 - Charge recovery contributions
 - Adjust supervisory framework to achieve better balance “hard” and “soft” obligations.

More advanced risk sharing

Workers with ample human capital and long recovery horizon should take more advantage of risk premia

- Introduce life cycle framework in investments and contributions and entitlements
 - Less guarantees at young age
 - Introduce options for risky and save entitlements: age-dependent relative shares in these two funds

Flexibility to absorb risks

- Young exploit long recovery horizon: flexible premium
 - Integrate pensions with financial planning
 - More tailor-made defaults
 - Integrate individual and collective products
 - ✓ Disability and unemployment insurance
 - ✓ Housing and health care
 - Digital infrastructure to exchange information
- Flexible labor market: work effort as buffer
 - One year more work provides 8% more income during rest of life
 - More flexible labor market for elderly
 - Flexibility to move between jobs
 - Portability pension rights and human capital imply better diversification in competitive environment

Link retirement age and longevity

- **First pillar:**
 - Age at which full entitlements are obtained likely to be linked to life expectancy. Will increase from 65 to at least 67 in next 20 years
 - Flexibility will be introduced, i.e. actuarially fair adjustment to starting age are allowed (between 65 and 70)
- **Second pillar**
 - A similar link to longevity in fiscal incentives for second pillar pensions is under discussion
 - Actuarially fair choice of the starting date is already achieved

Conclusions



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Conclusions

Convergence

- Currently there is a striking convergence in the development of pension systems world wide in terms of
 - Risk taking by participants
 - Risk taking by sponsors
 - Freedom of choice / defaults
 - Transparency
 - Attention for cost considerations
 - Life cycle implications

Stand alone funds

- Stand alone funds are an attractive alternative for traditional DB and DC funds

Core references:

- Bovenberg, Lans; Ralph Koijen, Theo Nijman, and Coen Teulings (2007), 'Saving and investing over the life cycle and the role of collective pension funds,' Netspar Panel Paper nr.1
- Bovenberg, Lans and Theo Nijman (2009), "Dutch stand-alone collective pension schemes: the best of both worlds?", Int. Tax Public Finance, 16, p. 443- 467