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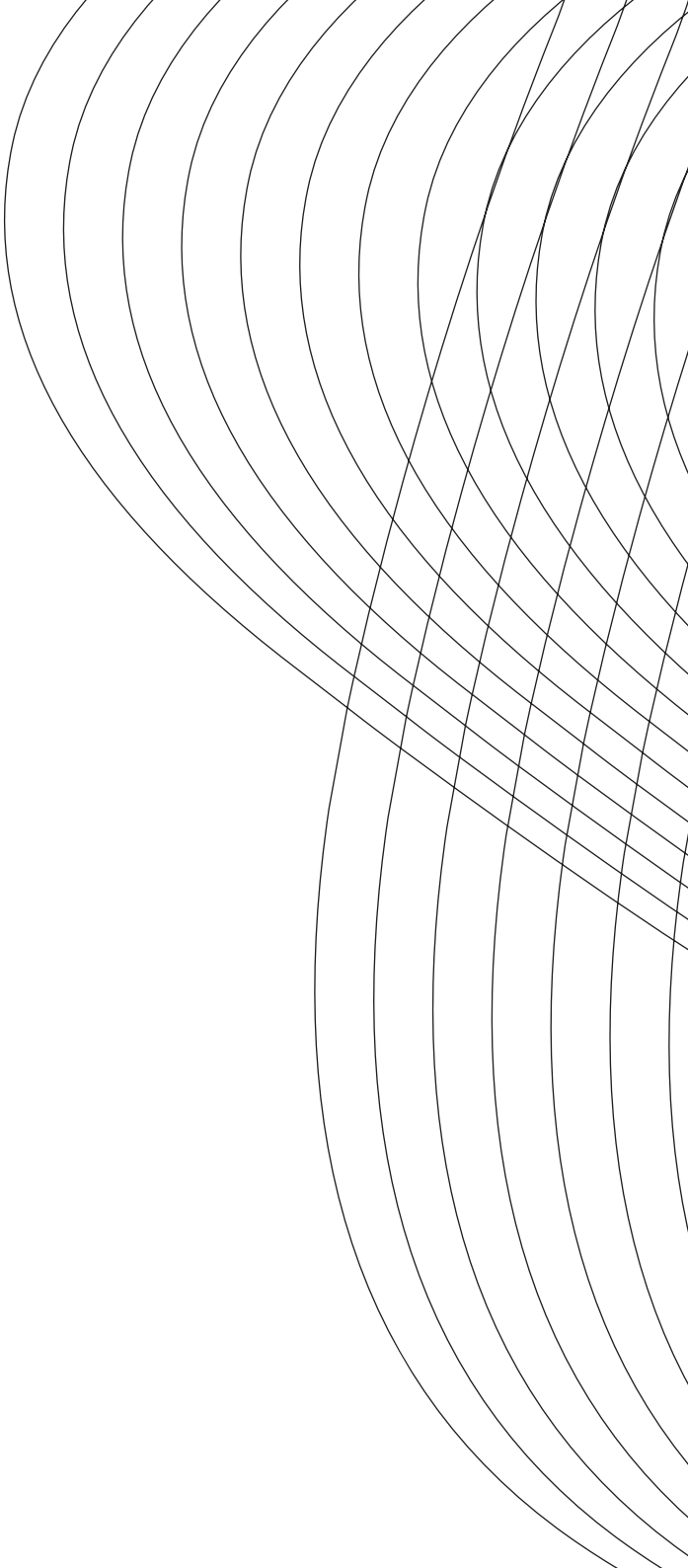
European supervision of pension funds: purpose, scope and design



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PREFACE

Netspar stimulates debate and fundamental research in the field of pensions, aging and retirement. The aging of the population is front-page news, as many baby boomers are now moving into retirement. More generally, people live longer and in better health while at the same time families choose to have fewer children. Although the aging of the population often gets negative attention, with bleak pictures painted of the doubling of the ratio of the number of people aged 65 and older to the number of the working population during the next decades, it must, at the same time, be a boon to society that so many people are living longer and healthier lives. Can the falling number of working young afford to pay the pensions for a growing number of pensioners? Do people have to work a longer working week and postpone retirement? Or should the pensions be cut or the premiums paid by the working population be raised to afford social security for a growing group of pensioners? Should people be encouraged to take more responsibility for their own pension? What is the changing role of employers associations and trade unions in the organization of pensions? Can and are people prepared to undertake investment for their own pension, or are they happy to leave this to the pension funds? Who takes responsibility for the pension funds? How can a transparent and level playing field for pension funds and insurance companies be ensured? How should an acceptable trade-off be struck between social goals such as solidarity between young and old, or rich and poor, and individual freedom? But most important of all: how can the benefits of

living longer and healthier be harnessed for a happier and more prosperous society?

The Netspar Panel Papers aim to meet the demand for understanding the ever-expanding academic literature on the consequences of aging populations. They also aim to help give a better scientific underpinning of policy advice. They attempt to provide a survey of the latest and most relevant research, try to explain this in a non-technical manner and outline the implications for policy questions faced by Netspar's partners. Let there be no mistake. In many ways, formulating such a position paper is a tougher task than writing an academic paper or an op-ed piece. The authors have benefitted from the comments of the Editorial Board on various drafts and also from the discussions during the presentation of their paper at a Netspar Panel Meeting.

I hope the result helps reaching Netspar's aim to stimulate social innovation in addressing the challenges and opportunities raised by aging in an efficient and equitable manner and in an international setting.

Roel Beetsma
Chairman of the Netspar Editorial Board

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EUROPEAN SUPERVISION OF PENSION FUNDS: PURPOSE, SCOPE AND DESIGN

1 Introduction

This paper offers recommendations for pension fund regulation at a European level.[1] The importance of adequate old age provisioning and regulation is self-evident in the current era. The leitmotiv is the upcoming demographic upheaval. Forward looking, the ageing process will challenge the financing of pension benefits, reaching a climax twenty years from now when 'babyboom' generations will have retired. As pay-as-you-go pension systems might become unsustainable, many countries need to rely more on pre-funding pension commitments. As a consequence, accumulated pension savings rise relative to economic production, and volatility in asset and liability values will have an increasing impact on domestic income and expenditure. In this context, the need for well thought-out regulatory and supervisory policies rises markedly across Europe.

Furthermore, the European Pensions (IORP) Directive (European Commission, 2003) aims to stimulate the development of an internal market for occupational pensions. Mobility of corporations, employees, and pension funds is expected to surge in the next decades. Improved European supervision may serve as a catalyst for an orderly growth of the internal market. Finally, uniform regulatory frameworks have been introduced in

1 We use the term pension funds throughout this paper to identify institutions for occupational retirement provision (IORPs).

other parts of the financial sector as well, in particular the global Basle III accord for banks and the European Solvency II regime for insurance companies. These frameworks promote a level playing field across sectors and countries.

1.1 Supervision of financial institutions

All citizens must have confidence in their financial claims, such as savings, insurance policies, and pension benefits. To attain this, the financial sector is subject to regulation and supervision, aimed at promoting the fulfillment of the promised security of financial claims, and the stability and integrity of the financial system. Disturbances in the financial system can have major negative consequences for individual savers, policyholders, and pension fund beneficiaries and for the economy as a whole.

Banks, insurance companies, and pension funds typically offer financial contracts with variable maturities and work with risk-sharing arrangements across stakeholders. Prudential bank supervision is directed at specific characteristics of banks. Banks are vulnerable to bank runs and consequently inherently unstable. Insurance contracts and pension benefits are less easy to unwind or to withdraw. However, one of the key arguments for promoting supervision in general is the *representation hypothesis* (Dewatripont and Tirole, 1994). This hypothesis asserts that individual depositors, policyholders, and beneficiaries cannot sufficiently monitor the well-being of financial institutions. They generally lack the necessary expertise to monitor a financial institution and act without coordination. Therefore a public regulator is needed to fulfill this role.[2]

2 Note that the existence of a deposit guarantee scheme for banks reduces the need for individuals to monitor banks and as such reinforces the representation hypothesis.

1.2 Purpose, scope and design of European pension supervision

European pension supervision may differ from supervision of other financial institutions as pension schemes may differ from other financial contracts. Occupational pension schemes are bargained between (representatives of) employers and employees. Given the specific characteristics of pension schemes we put forward that the purpose of pension fund supervision is to make sure that reasonable policyholders' expectations are being fulfilled by the pension fund.

Currently, supervision differs considerably across Member States, and pension arrangements vary widely as well. Revising the IORP Directive to improve supervision of this diversity will prove to be a challenge. The scope of a European supervisory regime can be considered as a very important element of such a regime. The scope of such regime could be an important cornerstone of what could be considered as the key objective of European pension fund supervision: to ensure that the contribution policy, investment policy, sponsor commitments and funding position of a pension fund are in line with the benefits and risks communicated to all the stakeholders in this pension fund. This key objective will ensure the main aims of public policy in the field of pensions as recognized by the European Commission: an adequate retirement income for European citizens and the sustainability of public finances. The current scope of the IORP Directive could be considered as not adequate, because not all occupational pension schemes in EU Member States are covered, whereas other institutions are admitted. Adjustments of the scope might therefore be considered.

Finally, the design of a good European supervision framework is a very challenging task. How can the key principle for supervision be implemented in practice? We discuss two important aspects in

this paper. First is communication concerning the nature of the claims and benefits, and the uncertainty surrounding this. Second is assessing the viability of claims and benefits of all stakeholders.

This paper is structured as follows. In chapter 2, we discuss the specific characteristics of pension schemes, the goal of supervision and a three pillar structure for pension supervision. In chapter 3, we describe that we see ample reason to revise the scope of the current IORP Directive. In chapter 4, we make suggestions on the design of European pension supervision and on the lessons learned from risk-based supervision of pension funds in the Netherlands. Chapter 5 summarizes the recommendations in this paper that can be used as input for a revised IORP Directive.

2 Specific characteristics of pension schemes and the purpose of European pension supervision

Occupational pension schemes are bargained between employers and employees as a condition of employment. This gives pensions a unique character. In this chapter we analyze the specific characteristics of pension schemes, the purpose of European pension supervision and the three pillars of pension supervision: definition and valuation of pension liabilities, risk assessment and disclosure. The key message in this chapter is that

Pension schemes differ from other financial contracts and therefore require a tailor made supervisory regime.

2.1 Specific characteristics of pension schemes

European pension fund supervision is the main theme of this paper. Pension fund supervision may differ from supervision of other financial institutions as pension schemes may differ from other financial contracts. Therefore we start our endeavor with a review of specific characteristics of pension schemes, mentioning four themes where pensions may differ from other financial arrangements.

2.1.1 Institutional design and residual claimants

Pension schemes offer the beneficiaries both bond and equity features simultaneously. In a bank or a commercial insurance enterprise, residual risks are allocated to the shareholders. In a pension fund the sponsor(s) or the beneficiaries are typically the residual claimants. Pension funds usually have a trust as legal form and as such do not issue equity capital. This means that the beneficiaries are not only liability holders but in effect also the

'shareholders' of the fund. However, since participation is often mandatory and the pension scheme linked to the labor contract, the 'shares' are not traded and not negotiable.

2.1.2 Different means of funding

Pension schemes can be financed in different ways[3]. Under a pay-as-you-go system, the pension benefits are financed through current contributions paid by the sponsor and the active generation. In a book reserve system, the employer promises its employees that it will pay them a certain amount upon their retirement. Funding results in a claim on the sponsor's assets. In a pre-funded system, contributions are collected in a special purpose vehicle, and invested in assets, which are used to finance the future benefits. Note, however, that the differences in funding are not always clear-cut. In the case where a funding deficit is fully mended by raising contributions, this in fact represents a pay-as-you-go element in a funded system, the burden being shouldered by the scheme's active and future members. Where a sponsor is liable for any funding deficits, this strongly resembles a book reserve system.

2.1.3 Possibilities for risk sharing

Pension schemes offer possibilities for risk sharing by pooling individual pensions into a collective arrangement. In this way, there is intra- and intergenerational risk sharing. In the intragenerational situation, individual longevity risk can be almost entirely eliminated by diversification. Intergenerational risk-sharing can also offer benefits. With collective risk pooling, the elderly use the young as a safety net if need be, while the

3 Also see paragraph 3.1.4.

young benefit from the wealth of the elderly. As such, a pension fund realizes diversification benefits between the financial capital of the elderly and the human capital of the young (see, for example, Gollier, 2008 and Cui, de Jong and Ponds, 2011). The case for intergenerational risk sharing is not straightforward, however. In an ageing society it is increasingly difficult to maintain a balanced risk sharing arrangement as the elderly outnumber the young. Furthermore, Benzoni et al. (2007) suggest that the possibilities for diversification are small as in the long run, labor income and capital income are highly integrated.

2.1.4 More flexibility, control options

– 2.1.4.1 More flexibility

Pension schemes offer more flexibility. Contrary to banks and insurance companies, pension funds typically have more mechanisms to manage their financial position. This can, for example, be in the form of indexation and/or a contribution policy which is explicitly linked to a pension fund's financial position. Furthermore, as a measure of last resort, pension funds can often reduce pensions and accrued benefits. These control options are described in more detail in section 2.1.4.2.

– 2.1.4.2 Control options

Control options play a key role in continuity analysis. Based on Merton and Bodie (1992) and CEIOPS (2008), we identify various control options for pension funds to secure the balance between liabilities and available funds dynamically:

- Having the stakeholders install a 'buffer' or 'regulatory own funds'. These are additional assets in excess of the liabilities. A

pension fund may also issue subordinated debt or other forms of near-equity.
- Adjusting the level of future contributions or accepting one-off donations by the sponsor to the pension fund.
- Contractual reductions of benefits, for example in a DC scheme.
- Purchasing third party guarantees for the pension liabilities. This approach applies to defined benefit liabilities where the inherent risks are diversifiable or where risks can be hedged in the capital market.
- Adopting a dynamic hedging strategy or contingent immunization strategy where risks are reduced if the risk-bearing capacity of the pension fund deteriorates.
- Reducing accrued benefits as a *measure of last resort*. This generally relates to a situation where there is no or limited further recourse to a sponsor for additional payments.

Continuity analysis is a very strong tool for identifying early imbalances between available assets, control mechanisms and liabilities.

Considering these control options one could argue that the risks for pension funds differ from the risks for other financial institutions and that this calls for different rules ("unique risks, unique rules").

2.2 The purpose of European pension supervision

Given this specific characteristics of pension schemes we argue that the key objective of pension fund supervision is

To make sure that reasonable policyholders expectations are being fulfilled by the pension fund.

Policyholders expectations are derived from the ex ante communicated certainty by the pension fund. The instrument to achieve this objective is to ensure that the contribution policy, investment policy, sponsor commitments and funding position of the pension fund are in line with the benefits and risks communicated to all the stakeholders in the pension fund.

We offer several arguments for this statement. *First*, regulatory oversight is a substitute for market discipline. Without regulation, pension fund trustees may be tempted to pursue short-term objectives, for example by shifting the burden of funding shortfalls to younger generations or, in extreme cases, to society at large. From a historical perspective, pension funds are not subject to market discipline. Therefore other disciplinary mechanisms should be put in place. Pension funds do not issue equity capital and, by consequence, the regular accounting and control mechanisms found in public capital markets are inoperative in the pension sector. Also, most pension funds do not have to compete for new business in a commercial environment. (Do note, however, that European pension funds are increasingly exposed to competition.[4])

Second, 'a promise is a promise' is a major principle underlying occupational pension arrangements. Pension scheme members must have the assurance that their interests will not be harmed by ill-considered decisions taken by pension fund trustees. This is a matter of trust as there is a prolonged period of time between the first contribution to the pension fund and the last benefit.

4 Bovenberg and Van Ewijk (2011) argue that the EU should be very careful in imposing unlimited competition and individual choice in the market for pensions. Pensions are complicated 'trust' products that are not well understood by financially illiterate consumers. The resulting governance and agency issues may call for various restrictions on free competition and individual choice.

This is all the more important because participation in a pension scheme is linked to the employment contract. The exit costs of leaving the scheme are thus high. One has to change jobs in order to leave the plan. And, once retired, one does not even have that option anymore.

Third, regulation ensures that it is economically efficient for young workers to enter a pension fund. If entrants have to pay disproportionately more than required for the accrual of their own benefits, this precondition no longer holds. This is a subtle equilibrium that may easily be disturbed and, hence, needs to be carefully protected through supervision.

2.3 Three pillars of pension regulation

Now we have identified the peculiarities of pension schemes and the purpose of supervision, we continue in this section with a three pillar structure of pension regulation: definition and valuation of pension liabilities, risk assessment and disclosure requirements.[5]

2.3.1 Definition and valuation of pension liabilities

Arbitrage-free valuation of liabilities is necessary to ensure a fair distribution of assets across beneficiaries. Traditionally, pension schemes are classified into defined benefit (DB) or defined contribution (DC) schemes. Valuation of pure DB liabilities is straightforward: the expected benefit payments are discounted using the risk-free rate. Since the investment risk is entirely borne by the beneficiaries, valuation of DC liabilities equals the value of the pension fund assets.

5 The mapping is slightly different from the typical three-pillar approach in Basle III and Solvency II, which consists of (i) minimum capital requirements, (ii) supervisory review process and (iii) disclosure requirements.

Since recently, the European pension universe is characterized by the evolution of hybrid pension schemes that combine elements of traditional DB and DC schemes. A hybrid scheme is characterized by a significant part of the promise being 'soft'. We identify two types of soft promises, the first one being *discretionary benefits*. A key element in the definition of discretionary benefits is that the granting is based on a discretionary decision of the pension fund trustees. The trustees can under no circumstances be forced to award the benefit. Valuation of discretionary benefits would require a model for the subjective trustee decision process.

The second type of soft claims are *conditional benefits*. Here the benefit is also variable, but the process of granting is linked one-on-one to an objectively observable benchmark. No discretionary decision by the trustees is involved. This applies, for example, when there is a mathematical relationship between the level of indexation and the funding ratio. Valuation of contingent liabilities is possible by means of valuation models for derivatives that replicate the contingency. Recently, the valuation of contingent pension liabilities has received a lot of attention in the literature (see chapter 4).

Note that it may also be possible to lower benefits. We define contractual reductions as regular measures that can be taken to reduce benefits. These are part of the pension commitment and can be used as a regular tool by the trustees to manage the funding level. For example, in a defined contribution scheme, benefits will be automatically lowered if the pension fund has experienced negative investment returns. This differs materially from a reduction in benefits as a measure of last resort. In case of a severe funding shortfall, reducing existing pensions and

benefits may be the only option left for the pension fund to continue its operations.

2.3.2 Risk assessment

Managing the balance between liabilities, available funds, and control options requires proper risk assessment. After all, this balance may be easily disturbed by the risks that pension funds are exposed to. The risk assessment needs to be designed to cover both long-term and short-term developments. A continuity analysis (see chapter 4) may be aimed at a long-term risk assessment, whereas the funding requirement and solvency test (see below) may be aimed at a short-term risk assessment.

– 2.3.2.1 Full funding requirement and solvency test

In section 2.1.2 we have described three different ways to finance pensions: pay-as-you-go, book reserves and pre-funding. In the last case we can distinguish between pension funds that depend to a large extent on sponsor support (sponsor-backed IORPs) and pension funds that are self-supporting (own-fund IORPs).[6] A logical starting point for the latter case is that these pension funds are fully funded.

The funding requirement is based on the assumption that an own-fund pension fund has very few control options and should therefore *ex ante* always be in a position to distribute the pension benefits to the beneficiaries in cash. As such, the full funding requirement is a disciplinary rule to ensure that assets and liabilities are balanced for self-supporting pension funds.

In addition, a solvency test can be employed to evaluate the risks inherent in the assets and liabilities over a short horizon,

6 In practice we observe that many pension funds combine elements of these two extremes.

Box 1: Solvency regulation in the Netherlands
The solvency test for own-fund IORPs in the Netherlands is based on the well-known Value-at-Risk (VaR) risk measure, with a one-year horizon and a confidence level of 97.5%. Interestingly, a comfort level of 97.5% is significantly lower than the 99.5% confidence level in the 'Solvency II' framework for insurers. Pension funds may also offer similar contracts and are then exposed to the same risks as other financial institutions. However, the difference may be explained by the additional control options that pension funds possess to influence the funding ratio in the long run. As a rule-of-thumb, this greater flexibility should reflect the difference in confidence levels. Furthermore, pension benefits may have a lower intrinsic security as benefits stretch out over a very long horizon. Different risks call for different rules.

typically a one-year period. Pension funds are required to retain the balance in case of adverse events on the financial markets or in the realization of longevity risk. Typical adverse events include a sharp decline in interest rates, a large fall in stock prices, and a sharp decrease in expected mortality rates.

2.3.3 Disclosure requirements
The balance between assets, liabilities, and control mechanisms should also be reflected in disclosure requirements. Transparency and comparability of pension funds can help to ensure that beneficiaries receive clear information. This is relevant for optimal life cycle saving and investing and the transfers of accrued benefits, which are increasingly important owing to the higher levels of labor mobility and sponsor discontinuity. The

information should clearly state that the expected pension is as from a certain age. Furthermore, it should be absolutely clear what risks are connected. Likewise, the pension result in a "bad weather" scenario is an important part of the disclosure. That will make it clear in advance what financial implications there are if such a scenario unravels. Then and only then will beneficiaries be able to understand what their overall personal financial picture looks like, the uncertainties associated with it, and how they can reduce those uncertainties.

3 The scope of the future IORP Directive

In the current European supervisory regime on pensions the scope is regulated by the IORP Directive. The IORP Directive only deals with occupational retirement provisions, contrary to state pension benefits (1st pillar) and private pension benefits (mainly accrued via insurance companies or UCITS, Undertakings for Collective Investment Trusts, 3rd pillar).

Occupational retirement provisions can in general[7] be operated in several ways: on a funded or unfunded basis, delivered through different financing vehicles or arrangements[8] (as described in paragraph 2.1.2) and subject to different legal regimes in the Member States of the EU.

3.1 Current European regime for pension supervision

Figure 1 summarizes the current regulatory framework for supervision of pensions, insurance companies and UCITS-type investment funds. It covers not only the IORP Directive, but also other regimes such as the Solvency II Directive and the UCITS IV Directive.

3.2 IORP scope not adequate

The current scope of the IORP Directive[9] does not cover all occupational pension schemes, as has also been stipulated by the European Commission (2011) in its Call for Advice, and may therefore be considered as too narrow. As a result this scope is in our view not adequate, because it does not meet the goal of equal

7 Not limited to occupational pensions as regulated in the IORP Directive, because this directive only applies to funded 2nd pillar pensions which are separated in an external vehicle.

8 For example in the case of book reserves, which are not separated in another vehicle, but are included in the balance sheet of the employer.

9 Articles 2-6, IORP Directive.

Solvency II Directive	IORP Directive	UCITS IV Directive	No Regulation*
Insurance companies, 2nd pillar Insurance companies, 3rd pillar	IORP's, 2nd pillar	Retail investment funds, 3rd pillar	– 1st pillar pensions – 2nd pillar pensions: Pay-as-you-go-schemes Book reserves Small pension institutions "Occupational" pension schemes of new Member States

* "No regulation" meaning that there is no European regulation with regard to the provision of pensions. Notwithstanding that other forms of supervision can be applicable, for example via the State budget or local social law.

Figure 1: Current European regime (in 1st, 2nd and 3rd pillar)

protection of members and beneficiaries of occupational pension schemes in the EU. As a consequence, the objective to make sure that reasonable policyholders expectations are being fulfilled by a pension fund (in our view key objective of pension fund supervision, as described in paragraph 2.2) cannot fully be realized.

In the first place the scope of the IORP Directive is currently limited to occupational pension schemes that are funded and managed in entities separate from the sponsoring company. This leads to an unsatisfactory situation in which some schemes are covered, while other (from the perspective of the member or beneficiary similar) schemes are not covered, without good reasons for such a different treatment. This is especially the case for book reserves and pay-as-you-go systems (Article 2, (c) and (e), IORP Directive).

In the second place the IORP Directive currently provides for an option for Member States not to apply this directive to small pension institutions, which could lead to a breach of the goal of equal protection of occupational pension benefits.

In the third place, the scope should be adjusted to include new pensions schemes/institutions as a result of the admission of new Member States since the IORP Directive became effective in 2003. The characteristics of these new pension schemes/institutions are to a large extent comparable with those of pension schemes/institutions (in the "old" Member States), but do not fully fit within the framework of the IORP Directive. As a result, they currently do not fall under the scope.

The scope of the IORP Directive could also be viewed as being too broad, since it does not only regulate institutions for occupational pensions provision, but also insurance type institutions which manage essentially different contracts. Furthermore, retail investment funds with UCITS-characteristics can fall under the IORP Directive[10], as the definition of occupational pensions is not well-defined. As a result the scope of this directive currently enables regulatory arbitrage between and within financial sectors.

3.3 Leaving scope unchanged versus adjustments of scope

Considering the above inconsistencies of the current IORP scope, it could be discussed whether this scope should remain unchanged or should be adjusted. In this respect one should consider that an adequate scope should be able to cover all types of in the EU existing occupational pension schemes, whether or not funded, whether or not delivered trough different financing vehicles or arrangements or not, and whether to be characterized as a DB-, a DC- or a hybrid scheme (combining elements of traditional DB- and DC-schemes, see also section 2.3.1). As such, the European occupational pension universe is highly diversified in several aspects. This diversification has recently even increased as a result

10 Note that UCITS-funds itself are explicitly exempted in the IORP Directive, Article 2, 2 (b).

of the evolution in several Member States of hybrid schemes. This trend might continue in the upcoming years, which would give rise to the necessity of a European supervisory framework which is able to cope with this, and which therefore needs an adequate scope.

Leaving the scope as it is today is in our view not advisable for the following reasons. Firstly, the narrow scope does not stimulate (entities managing) pension schemes which are currently out of scope of IORP Directive to organize a similar level of safety and quality of pension services. It could even function as a pretext for communicating high levels of benefits while deliberately not meeting the adequacy criteria of IORP Directive. And the current exemptions could in theory allow Member States to circumvent the IORP Directive by assigning the label pay-as-you-go to their defined benefit schemes (DB)[11]. A narrow scope thus leaves the possibility of regulatory arbitrage and an unlevel playing field for those managing pensions. It could seriously hinder safety and transparency for (future) pensioners and the functioning of the internal market.

Secondly, not changing the scope would lead to an undesirable gap in the prudential regulation and supervision of provision of all types of occupational pensions and hamper the goal of equal protection of beneficiaries of occupational pension schemes (see paragraph 2.2). As a consequence the question would arise how the European supervision of pension funds and pension systems that do not fall under the scope of the IORP should then be regulated to assure similar protection to all European employees and pensioners.

11 Such circumvention would not be a too difficult case to make, because pension funds may shift funding shortages to future generations.

Furthermore, not altering the narrow scope of the IORP Directive would continue this directive effectively only being relevant for a limited number of countries. There would be a reason for doubt as to whether the IORP Directive then has an adequate European justification from an internal market perspective.

Considering these disadvantages of leaving the scope unchanged, it seems preferable to adjust the scope of the IORP. This would lead to equal protection of the pension rights for many European citizens and avoid regulatory arbitrage.

3.4 Adjustments of the scope

Adjustments of the scope of the IORP Directive can contribute to the goal of equal protection[12] *of occupational pension benefits in the EU and will decrease the possibilities of regulatory arbitrage. Such adjustments may be realized by reconsidering existing exemptions and options in the current IORP Directive plus modifying the IORP scope to include all occupational pension institutions operating collective pension schemes in which all biometric and investment risks are economically borne by the employer and/or plan members and beneficiaries.*

These adjustments of the scope of the IORP Directive can be realized by means of the following measures.

3.4.1 Book reserves and pay-as-you-go-schemes

Firstly, the current exemptions in the IORP Directive for book-reserve schemes (occupational pension schemes which are financed through provisions on the balance sheet of the sponsor/company) and pay-as-you-go schemes could be abolished.

12 See paragraph 2.2.

Nowadays, the book-reserve-exemption gives rise to the inconsistency in which similar pension schemes may be covered by the IORP Directive in one country but not in another country. This inconsistency can even occur within a single country. For example, both in Germany and in the United Kingdom (UK) DB-schemes must be backed by the sponsor company and in both countries a protection fund is in place in case the company becomes insolvent. The only difference is that in Germany book reserves are allowed, while in the UK assets have to be set aside in a trust. This difference leads to inconsistent treatment under the IORP Directive: the UK schemes are covered, but the German schemes are exempted. Another example, with respect to one single country, is Germany, where employers are given the choice between book-reserves, Pensionsfonds (IORP), Unterstützungskassen, Pensionskassen (Solvency II) or Direktversicherung (Solvency II).

The exemption for pay-as-you-go systems leads to another inconsistency, namely that DB schemes provided by pension funds fall under the IORP Directive, whereas pay-as-you-go schemes (where, similar to many DB schemes, pension commitments are supported by contributions paid by employers and employees) are exempted. The only difference between these schemes is that pension funds often have higher levels of funding compared to pay-as-you-go schemes. For the sake of completeness it should be mentioned that this does not alter the fact that pay-as-you-go schemes may have reserve funds in place, while funded DB schemes may run funding shortfalls for prolonged periods and include pay-as-you-go aspects as such. As described in paragraph 2.1.2, in a situation in which a funding deficit is fully mended by raising contributions, this in fact represents a pay-as-you-go-

element in a funded system. In that respect funded systems and pay-as-you-go systems are not completely different.

Including book reserve and pay-as-you-go schemes within the scope of a revised IORP Directive does not necessarily imply that such schemes are required to build up reserves. The ability to raise future contributions – in combination with the absence of insolvency risk (for example in case of industry-wide schemes) or possibly backed up by insolvency protection – may be regarded as an asset, a possibility that is also mentioned in the Call for Advice. In that case, the funding requirements in Article 16 of the IORP Directive do not need to be applied.

Including book reserve and pay-as-you-go schemes in the IORP Directive would have the advantage that (be it in different ways) the same level of transparency and security can be reached for the same pension benefits, regardless of whether these benefits are funded and of the way they are funded. In our opinion, this would be an important improvement towards increasing plan member protection of similar pension benefits. After all, the way pensions are funded should not impact the security of the benefits. Such inclusion would contribute to the realization of the key objective of pension supervision as described in paragraph 2.2.

3.4.2 Small pension institutions

A second adjustment of the IORP scope could be realized by deleting the option (in Article 5 of) the IORP Directive for Member States not to apply this directive to small pension institutions. Exercise of this option by Member States can lead to a breach of the goal of equal protection of plan members and beneficiaries of occupational pension schemes. Deleting this option would prevent this unwanted effect.

To be sure, supervision based on the provisions of the IORP Directive could turn out to be too heavy for small pension funds given their size, so that it could force such funds to wind themselves up. Such consequences might be avoided by the introduction of an option for small pension institutions for a kind of "simplified supervision". Such option could entail that certain rules in the IORP Directive would not apply if a small pension fund ("small" to be clearly defined) would meet one or more other requirements, for example an additional solvency level.

3.4.3 Pension schemes in new Member States and redefinition of the IORP scope

The IORP scope could also be modified by expanding its application to certain pension schemes which for different reasons are currently not covered by the IORP Directive, but do qualify as occupational pension schemes. Although these pension schemes have similar characteristics as occupational pension schemes that already fall under the IORP Directive (for example, contributions made in relation to an occupational activity, managed by private institutions), they are exempted because they differ on elements not relevant from a pensioners and internal market perspective.[13] It could be argued that these differences do not clash with the main principle of occupational pensions, that of providing retirement benefits in the context of an occupational activity. Consideration might therefore be given to bring these schemes under the IORP Directive. Such broadening of the IORP scope could be modified in at least two ways.

A first modification of the scope to include these schemes would be to add a reference to them on the basis of a legal

13 For example systems, in which occupational retirement benefits are not based on a contract but prescribed by law.

obligation in the definition of "institution for occupational retirement provision" in Article 6 of the IORP Directive. Such addition would cover existing schemes (primarily in the new Member States), where the provision of retirement benefits in the context of occupational activities is not based on an agreement or contract between employers and employees but on a legal obligation (see EIOPA, 2011, Par. 6.3.12).

In addition to such amendment, the scope of the IORP Directive could in general be redefined to cover occupational pension institutions that operate collective[14] pension schemes and in which all biometric and investment risks are economically borne by employers and/or (present or future) scheme members and beneficiaries.

Such scope extension would have major advantages. Firstly, such redefinition would bring under the IORP scope existing institutions that provide occupational pension schemes which operate without any government guarantee on the benefits, might operate via a social security network and which are not yet covered by the above proposals. This could contribute to the goal of equal protection of members and beneficiaries of occupational pension schemes in the EU, because they would then benefit from the same protection as the schemes that currently already fall within the IORP scope.

This could be combined with a further analysis of the pension schemes that currently do not fall (or not yet) under the IORP Directive.

Last but not least, such redefinition has is very similar to one of the suggestions from EIOPA (2011, Par. 6.3, Option 4), namely the

14 Collective refers to the offering of these pension schemes on a group basis, not necessarily collectively negotiated. Individual DC-schemes thus also fall under this scope.

option to place under the IORP Directive all occupational pension providers that are neither covered by an EU prudential regulation nor guaranteed by a public authority, even when classified as social security schemes (for example in case of a classification as 1st or 2nd pillar). This potential advantage could be investigated further.

3.5 Redefinition would also prevent other institutions using the IORP scope

Redefinition would also result into another positive effect, in the sense that it could prevent other institutions than occupational pension funds from falling under the IORP Directive.

3.5.1. Insurance companies

At this time, IORPs may be established by Member States as vehicles where the institution itself underwrites pension liabilities[15]. Insurance companies can make use of this option. These insurance vehicles can then remain subject to the (lower) fund requirements of the IORP Directive, instead of the (higher) requirements of the Solvency II Directive. This is not desirable because it would lead to an uneven playing field within the insurance sector (identical institutions being subject to the prudential rules of the IORP Directive in the one Member State, but to the Solvency II rules in another country), and should therefore be avoided. Such avoidance can be realized by the proposed redefinition of the IORP scope. Insurance institutions do not fall under this scope because (biometric and investment) risks are not all borne by employers, plan members and beneficiaries, but instead by the insurance companies and their shareholders.

15 Article 17, IORP Directive.

In relation to insurance companies, the scope of the IORP Directive could also be narrowed by abolishing the current provision that allows Member States to apply certain provisions of the IORP Directive to the (ringfenced) occupational retirement business of insurance companies.[16] This would prevent an unlevel playing field situation in which some Member States apply this option, whereas other Member States refrain from this option.

3.5.2 Retail investment funds

Redefinition of the IORP scope into occupational pension institutions operating collective pension schemes in which all biometric and investment risks are economically borne by the employer and/or plan members and beneficiaries would also mean a narrowing in an additional sense. It could also prevent retail investment funds with UCITS-characteristics from falling under the IORP Directive.

The current IORP scope could for example admit funds instituted by financial intermediaries which (partially) host private pensions (CEIOPS, 2008). Furthermore occupational pensions are not well-defined, which might result in retail investment funds (3rd pillar products) falling under the IORP scope (meant for the 2nd pillar). As a consequence, the rules aimed at protection of retail investors in the EU as laid down in the UCITS IV Directive (for example, restrictions on investments in illiquid assets, such as private equity and hedge funds) would not be applicable, but instead the IORP rules.[17] This might have the adverse effect of regulatory arbitrage (investment funds falling under UCITS IV

16 Article 4, 2003/41/EU.

17 The investment rules in (article 18 of) the IORP Directive consist of the prudent person principle. Based upon this principle illiquid investments are not prohibited beforehand.

Solvency II Directive	IORP Directive	UCITS IV Directive	No Regulation
Insurance companies, 2nd pillar Insurance companies, 3rd pillar	IORP's, 2nd pillar, including: Book reserves Pay-as-you-go-schemes Small pension institutions "Occupational" pension schemes in new Member States	Retail investment funds, 3rd pillar	1st pillar pensions

Figure 2: Future regime

versus funds applying the IORP Directive). This effect can also be avoided by the proposed redefinition of the IORP scope.

3.6 Scope resulting from proposed adjustments

Figure 2 summarizes the scope which would result from the proposed adjustments. Contrary to the current scope (summarized in Figure 1), this scope would cover (i) book reserves, (ii) pay-as-you-go-schemes, (iii) all small pension institutions and (iv) occupational pension schemes in new Member States. Insurance companies and retail investment funds would no longer be admitted within this scope, but fall under the scope of Solvency II respectively the UCITS IV Directive.

4 The design of European pension supervision

Designing a good European supervision framework is a very challenging task. As mentioned in paragraphs 2 and 3, pension funds cover a wide spectrum, varying from schemes with very explicitly defined benefits (pure DB schemes and pension schemes with contingent benefits) to pension schemes with highly implicit benefits (pure DC schemes). To make matters more complicated, most pension schemes are in practice hybrid pension schemes that combine elements of traditional DB and DC schemes.

Insurance companies and pension funds work with risk-sharing arrangements. The difference between pension funds and life insurance companies is that in a commercial insurance enterprise residual risks are allocated to the shareholders, while in a pension fund the beneficiaries and the sponsor(s) are ultimately also the residual claimants. Furthermore, pension funds can exploit the potential benefit of intergenerational risk sharing. The risk profile of the pension fund should therefore be aligned with the risk preferences of the stakeholders, active members, non-active members and sponsor(s). Therefore, pension fund supervision centers on the continuity of pension entitlements, which by definition may stretch over a short to a very long horizon.

Based on these observations, we believe that the key focus for pension fund supervision can be stated as follows:

To what extent are the contribution policy, investment policy, sponsor commitments, and funding position of the pension fund in line with the benefits and risks communicated to all stakeholders in the pension fund?

This principle addresses the concern that the risk profile of the pension fund is aligned with the risk preferences of the stakeholders in the fund to make sure that reasonable policyholders expectations are being fulfilled by the pension fund (see paragraph 2.2).

One may object that our principle is at odds with risk-based supervision. Our answer to this objection is twofold. Firstly, even though our proposed design of European pension fund supervision may be different, the ultimate goal is the same as the risk-based supervision of Solvency II (European Commission, 2009): ensuring that participants receive what has been promised by the entity. In other words, making sure that *reasonable policyholder expectations* are being fulfilled by the entity. Therefore, the concepts for supervision that underlie Solvency II (and Basle III) should be equally useful for pension fund supervision; only the implementation of the supervision would be different.[18] Secondly, due to the differences between pension funds and insurance companies (i.e. who bears the residual risks, see paragraph 2.1) the supervision of pension funds needs to be designed differently from the supervision of insurance companies.

We want to highlight two aspects of our key focus. First is the issue of long-dated guarantees. Guarantees are in fact long-dated put options. The replication and risk management of put options involve the execution of trading strategies that are pro-cyclical. In other words, when markets go down, the risk management strategy requires that a part of the investment position is liquidated, thereby increasing downside pressure on market prices. This effect is especially dangerous for large pension funds and insurance companies that have large price impact potential on the market.

18 See paragraph 2.3 for a slightly different approach to the three pillars than in Solvency II and Basle III.

Put options can be replicated in theory by following a "delta hedging" strategy. However, such an investment strategy is only feasible for small agents that are price takers. As soon as the investment strategies start to impact the market price, the replication of long-dated guarantees will lead to dangerous positive feedback loops in the economy. Therefore, the regulator should be very critical in assessing the viability of long-term guarantees in pension funds (and also in insurance contracts). In fact, the burden of proof of the viability of long-term guarantees lies with the pension fund.

The second issue in avoidance of unforeseen outcomes is the size and nature of claims on the sponsor. When pension fund claims on the sponsor exceed the payment capacity of the sponsor (thus triggering a bankruptcy), then it is clearly not realistic to assume that such claims are a sustainable component of the pension deal.

Note that in economic scenarios where a pension fund finds itself in poor financial shape, the sponsor (and other stakeholders) are then also likely to do badly. Hence, especially in times of need for the pension fund, the sponsor is most likely not to be able to pay all or part of the claims on the pension fund. Again, the role of the supervisor is to critically assess the credibility of scenarios involving large claims on the sponsor.

4.1 Implementation of key principles

How can the key supervision principle outlined above be implemented in practice? We see two important aspects. The first aspect is the communication concerning the nature of the claims and benefits and the uncertainty surrounding this. The second aspect is the assessment of the viability of claims and benefits of all stakeholders.

Pension deals are often very complicated and open-ended arrangements between multiple stakeholders. We therefore believe that it would be a mistake to narrow the scope of supervision down to a "simple" solvency assessment, meaning a "simple" assessment as to whether the available assets of the pension fund are sufficient to cover the value of the pension benefits.[19] Pension deals are complex and multifaceted because the various stakeholders have agreed on a set of claims and benefits on each other. Under differing economic scenarios, the relative value of all these claims and benefits constantly changes. We believe that the supervisor should verify that the pension fund engages in a dialogue with its stakeholders and make sure that all stakeholders are aware of the impact of different economic scenarios on the benefits and obligations of the pension scheme. In particular, the pension fund should point out under what specific economic scenarios stakeholders will have very large claims. The supervisor should invite the pension fund to demonstrate that these claims can be credibly fulfilled. The result of all this communication should be that all stakeholders are *ex ante* more aware of risks and bad scenarios, and still commit to the pension deal.

How can the relative value of all embedded claims and benefits be made visible to all stakeholders in the pension fund? [20] One way is to perform a 'continuity analysis', using economic scenario generators that simulate future paths of the economy. Applying these simulated paths, it will be possible to track the changes in contribution policy, investment policy, sponsor commitments,

19 Such approach would not be suitable for pay-as-you-go schemes and difficult to apply to book reserves (see paragraph 3.4.1).

20 Broeders, Kortleve, Pelsser and Wijckmans (2011) discuss the various methods in greater depth.

and funding position of the pension fund. This information can then be used to map out probability distributions of the different stakeholder claims over different time horizons. Examining different time horizons is important as this provides insight into the development of the fund over the short term (say 1–5 years) and the long term (say 10–40 years). The continuity analysis is strongly related to the common practice in the pension fund industry of Asset–Liability Management studies and has become increasingly important (De Jong and Pelsser, 2010).

A carefully performed analysis will highlight whether or not there is sufficient scope for maintaining the balance in the long run. The continuity analysis thus contributes to the assessment of a sustainable financial future for pension funds and consequently to the protection of members' interests. For the pension funds, this yields the opportunity to discuss up front with its stakeholders what actions they will commit to when bad scenarios occur (so called "living wills").

A second method is to use different stress scenarios and examine the consequences of these stress tests. This method has become quite common within the banking industry. The advantage of deterministic stress scenarios over economic scenario generators is that one can see the consequences of scenarios that are logical in themselves (for example, deflation scenario or the banking crisis), without applying probabilities and distributions. The disadvantage is that one does not know the likelihood of the scenario(s) and the sustainability of policy in other situations.

A third method is to calculate the present value of all benefits, assets, and contingent claims. Especially in the Dutch pension sector, considerable research has been conducted on how to make and apply these calculations (see Nijman and Koijen, 2006;

Kortleve and Ponds, 2006; Kocken, 2006; De Jong, 2008; Kortleve and Stigter, 200; and Broeders, 2010). If the present value of current and contingent assets is higher than that of current and contingent benefits, then the pension scheme is sustainable. This method is comparable to assessing the balance sheet of an insurer, but it differs in that the steering options, such as extra contributions and conditional indexation, are included in the balance sheet. These value calculations are also very important for the portability of accrued benefits between pension funds.

4.2 Lessons learned from risk-based supervision of pension funds in the Netherlands

In the previous section, we have discussed several methods for assessment of the relative values of the claims and benefits of all stakeholders in a pension fund. In the Netherlands, a market-based and risk-based supervision framework for pension funds has been in place since 2005. This supervision framework has been "stress tested" in the recent financial crisis. What lessons can be learned from the Dutch case?

The decline in interest rates at the end of the 20th century, plus events such as the default of the British insurance company Equitable Life in 2000, triggered a strong push toward risk-based supervision for insurance companies and pension funds, especially in the UK, Denmark and the Netherlands. This push was led by the supervisors and the actuarial profession, acting jointly. In 2001, the Dutch supervisor formulated a proposal for the Financial Assessment Framework *(Financieel Toetsingskader*, FTK) based on a threesome of tests:

1. the *continuity test*: this test would look at the long-term financial situation of the pension fund, including future

developments in the pool of participants, contribution, and indexation policies;
2. the *solvency test*: where the risks of becoming insolvent are monitored over a one-year horizon;
3. the *minimum test*: the value of the assets must exceed the value of the liabilities at any point in time.

Of these three tests, the continuity test was intended to be the most important test. The other two tests were considered to be "triggers" for the supervisor to take action. These original starting points represented a reasonable trade-off between securing the short-term financial position (needed to limit the sponsor risk) and supervision based on the long-term ambitions of the fund. Unfortunately, economic developments moved much quicker than the Dutch consultation process. In 2000 the internet bubble burst, and falling equity prices put the financial position of Dutch pension funds under pressure. Hence, instead of focusing on the continuity test, the Dutch legislator chose to concentrate on a nominal solvency test over a one-year horizon using a confidence level of 97.5%.

The introduction of market-based supervision in the Netherlands has brought many benefits to the Dutch pension sector. Firstly, pension funds have become much more aware of the importance of managing the financial and other risks on their balance sheets. This was to a large extent triggered by the consistent treatment of valuing both liabilities and assets on a market-consistent basis. Secondly, pension funds have become much more aware of the need for open and clear communication regarding the potential risks and the full nature of the pension arrangement for their participants. Thirdly, the role of operational supervision has gained considerable prominence. Fourthly,

the setting of contribution levels by pension funds has become more tightly controlled. All these positive consequences can be summarized by the term *incentive-compatible supervision*, which means that supervision rules should elicit desired behavior from the institutions that are being supervised.

There were also some unintended negative consequences. Dutch pension funds now considered it appealing that participants in the fund would have absolutely no indexation expectations. After all, this meant that, for purposes of the solvency test, all fund liabilities could be discounted at nominal interest rates (instead of the lower real interest rate), which was favorable for the solvency position that could be reported to the supervisor. A second unintended consequence was that pension funds started to focus much more on monitoring their one-year seminal solvency position, instead of their long-term real fund position. In some cases, pension funds implemented Liability Driven Investment (LDI) strategies, where investments exactly match the nominal liabilities. This is not always optimal for the participants since, over the long investment horizons that pension fund participants face, inflation will erode more than half of the purchasing power of the guaranteed nominal cash flows.[21] Hence, over long time spans, a nominal guarantee is not worth as much as it may seem.

What lessons can be learned from this "Dutch case"? Firstly, supervision should strike a balance between securing the short-term financial position of the pension fund and supervision on the long-term ambitions of the fund. Pension fund supervision should not exclusively focus on a short-term solvency test (like the Value-at-Risk approach advocated for insurance companies

21 With inflation of 2% per year, € 100 forty years from now is only worth 1/(1.02)40 = € 45 today.

in Solvency II). Secondly, focusing the supervision of pension funds on nominal liabilities only is altogether insufficient. The supervisor should provide pension funds with the opportunity to realize their long-term real ambitions for the participants. More focus on the indexation ambition is wanted, at least in the communication about expectations and uncertainties to stakeholders.

Another lesson learned is that recovery periods should to some extent be flexible. The standard recovery period in the Netherlands for underfunding is three years, but the Minister of Social Affairs and Employment has the option to extend that to five years for all pension funds. This option was exercised during the last crisis. The volatility of markets, leading to a volatile funding ratio, is also a lesson that the Dutch have learned from the crisis. How reliable and relevant is a funding ratio that is based on incomplete and unbalanced markets?[22] Waiting periods or other methods like smoothing could overcome excessive volatility.

22 Pension liabilities are long-term, and the market for very long interest rates (over 30 years) is illiquid or even non-existing.

5 Conclusion

Over the next decades, Member States will be have to deal with the combined effect of increased life expectancy as well as retirement of the baby boom generation. Countries that rely heavily on pay-as-you-go schemes are vulnerable to aging. To finance pensions more balanced, it is likely that those countries will have to rely more on pre-funding pension commitments. In this context, the need for improved, well judicious regulatory and supervisory policies rises markedly across Europe. Furthermore, supervision may stimulate an orderly growth of the internal market. Finally, uniform regulatory frameworks have been introduced in other parts of the financial sector as well. These frameworks promote a level playing field across sectors and countries.

This paper reviews three main topics that are relevant to consider when discussing convergence of European pension supervision: (i) the specific characteristics of pension schemes compared to other financial contracts, (ii) the scope of European pension supervision, and (iii) the impact of this observation on designing adequate supervisory tools. To summarize the paper, the following recommendations in this paper can be used as input for a revised IORP Directive:

I. Pensions schemes differ from other financial contracts and therefore require a tailor made supervisory regime
Pension schemes are in many ways different from other financial contracts. A pension scheme offers the beneficiaries both 'bond like' and 'equity like' features simultaneously. The beneficiaries do not only have a senior debt claim but are in fact also the residual claimant. Furthermore, pension schemes can be financed

in different ways and pension funds typically have more control options to manage the balance between assets and liabilities. The differences should reflect in the supervisory framework.

II. The key objective of pension fund supervision is to make sure that reasonable policyholders' expectations are being fulfilled by the pension fund.
Policyholders expectations are derived from the ex ante communicated certainty by the pension fund. The instrument to achieve this objective is to ensure that the contribution policy, investment policy, sponsor commitments and funding position of the pension fund are in line with the benefits and risks communicated to all the stakeholders in the pension fund.

III. The scope can be considered as an important corner stone of European pension fund supervision. The current IORP scope can be considered as not adequate and might therefore be adjusted. Adjustments can contribute to the goal of equal protection of occupational pension benefits in the EU and will decrease the possibilities of regulatory arbitrage and as a result contribute to the realization of the aforementioned key objective of pension fund supervision .
Such adjustments may be realized by reconsidering existing exemptions and options in the current IORP Directive plus modifying the IORP scope to include all occupational pension institutions operating collective pension schemes in which all biometric and investment risks are economically borne by the employer and/or plan members and beneficiaries.

IV. Scenario analysis, stress testing and disclosure are essential tools for supervising non-guaranteed pension benefits

The ultimate goal of pension fund supervision is that the benefit is delivered in line with the commitments communicated earlier. Pension funds may have different objectives. Defined benefit schemes should be handled as guarantees, while adequate disclosure is key for defined contribution schemes. In cases where pension schemes do not offer guarantees (which is currently the trend), regulation should focus on scenario analysis, stress testing and disclosure to the stakeholders about the risk and return of the pension arrangement. There should be full disclosure of the process by which benefits are allocated to the different cohorts of members so that they are fully aware of their risks and take action to protect their benefits or save more as a cushion for possible losses. Such disclosure should at a minimum describe the process (both governance and decision making) for such benefit allocations. Market-consistent valuation is necessary to ensure fair distribution of assets across beneficiaries.

V. Experience shows that regulation must generate behavior that is consistent with the objectives of the pension fund

The Netherlands have been a pioneer in risk-based pension supervision for hybrid pension schemes. We discuss the experience in the Netherlands during the recent financial turmoil and show how important it is that regulation is *incentive-compatible*: regulation must elicit behavior that is consistent with the objectives of the pension fund.

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European supervision of pension funds: purpose, scope and design

In this paper, Niels Kortleve (PGGM), Wilfried Mulder (APG) and Antoon Pelsser (UM) recommend sustainable convergence in pension fund regulation at a European level. They relate to three topics: the scope of European pension supervision, the special nature of pension schemes and pension funds compared to other financial contracts and institutions and the consequences for adequate supervisory tools. These recommendations can be used as input for the response to the Call for Advice (European Commission 2011).