Response to the European Commission White Paper "An Agenda for Adequate, Safe and Sustainable Pensions"

October 2012
Abstract

On February 16th, 2012, the European Commission published a White Paper entitled "An Agenda for Adequate, Safe and Sustainable Pensions". It proposes a series of measures related to information and monitoring, European harmonisation and portability, and pension design. After a short summary of some of the main challenges facing European pension systems, this paper discusses the Commission’s proposals point by point.

Our three key messages are the following. First, the current pension debate should be used by the Commission to foster increased coordination in pension reform. When discussing the sustainability of public finance, one medium-term objective could be to recognise unfunded implicit pension commitments. Second, the prudential framework for pensions is bound to have far-reaching consequences, and it needs to respect the particularities of pension providers, which are not those of insurers. Third, new regulation should encourage the generalisation of asset-liability management practices, both for pension funds and individual retirement products, using the best available knowledge and techniques and evaluating micro as well as macroeconomic impacts. A move towards hybrid pensions could, with these objectives in mind, provide a more adequate conceptual framework for European countries to converge towards. Only with those can the goals of adequacy, safety and sustainability for European pensions ever be met.
About the Authors

**Noël Amenc** is professor of finance and director of EDHEC-Risk Institute. He has a masters in economics and a PhD in finance and has conducted active research in the fields of quantitative equity management, portfolio performance analysis, and active asset allocation, resulting in numerous academic and practitioner articles and books. He is a member of the editorial board of the *Journal of Portfolio Management*, associate editor of the *Journal of Alternative Investments* and a member of the scientific advisory council of the AMF (French financial regulatory authority).

**François Cocquemas** is a PhD in Finance candidate and research assistant at EDHEC-Risk Institute. His research specialises in market microstructure, asset pricing and the evaluation of regulatory impacts. François holds a Master in Finance from Sciences Po Paris and a Master in Economics and Public Policy from École Polytechnique, ENSAE and Sciences Po Paris. Before joining EDHEC, he worked as a lecturer in economics at Sciences Po Paris and as an equity research analyst at Natixis Securities.

**Lionel Martellini** is professor of finance at EDHEC Business School and scientific director of EDHEC-Risk Institute. He has graduate degrees in economics, statistics, and mathematics, as well as a PhD in finance from the University of California at Berkeley. Lionel is a member of the editorial board of the *Journal of Portfolio Management* and the *Journal of Alternative Investments*. An expert in quantitative asset management and derivatives valuation, his work has been widely published in academic and practitioner journals and has co-authored textbooks on alternative investment strategies and fixed-income securities.

**Samuel Sender** has participated in the activities of EDHEC-Risk Institute since 2006, firstly as a research associate—at the same time he was a consultant to financial institutions on ALM, capital and solvency management, hedging strategies, and the design of associated tools and methods. He is now applied research manager at EDHEC-Risk Institute. He has a degree in statistics and economics from ENSAE (École Nationale de la Statistique et de l'Administration Economique) in Paris.
Executive Summary

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On February 16th, 2012, the European Commission published a White Paper entitled, “An Agenda for Adequate, Safe and Sustainable Pensions” (European Commission, 2012b, hereafter the White Paper). It points out some of the salient issues facing European countries in the near future, and proposes some European-level responses so as to encourage countries to tackle these issues. In accordance with the subsidiarity principle, many of the reforms need to be enacted at the country level. Nonetheless, the Commission proposes a series of measures at the European level, which revolve around three main aspects:

1. Information and monitoring: awareness regarding both challenges and best practices, promotion of dialogue between social partners, multilateral monitoring of reforms;

2. Harmonisation and portability: promotion of a level playing field with Solvency II through the revised IORP Directive, facilitation of cross-border activities through IORP and Portability Directives, possible inclusion of pensions in the scope of Regulation 883/2004/EC on the coordination of social security provision, examination of tax and contract-law obstacles to cross-border pension investment;

3. Pension design: codes of good practice for both second- and third-pillar pensions, possible EU certification scheme, optimisation of tax and other incentives, raising quality of third pillar pensions and review of protection against the employer’s insolvency.

The information and monitoring side is unlikely to be controversial, but it can be more or less effective depending on how it is enforced. The more complex aspect, but also with potentially the most dramatic consequences, is of course harmonisation. The various legal frameworks may be leveraged to instigate profound changes in national systems, and the European institutions need to thus tread carefully. Finally, pension design raises some good questions, but at this stage, it misses some important elements specific to retirement products by excessively trying to mimic other prudential frameworks.

This paper aims to be an in-depth response to the proposals in accordance with past EDHEC-Risk Institute theoretical research, empirical investigations and position papers on regulatory and industry topics.

First, we sum up our main focus points on otherwise well-documented concerns regarding pension adequacy and sustainability. Pension systems should better take into account the needs of current and future retirees, which can only happen through deep structural changes moving the diverse systems towards more hybrid solutions.

Second, we discuss how an effective implementation of the proposals regarding information and awareness can actually push reforms in member states in the right direction. In particular, the multilateral dialogue and negotiations should not exclude the financial industry, which has a major role to play in the reforms.

Third, we review the various legal tools at the EU level and how they should be leveraged – keeping in mind that too much harmonisation can be detrimental, if it leads to oversimplification and ignores the
specificities of national systems as well as those of retirement products themselves. Fourth, we examine those very retirement solutions whose designs barely seem to feature on the European Commission’s agenda. While codes of conduct and certification schemes might be beneficial, other elements, notably regarding prudential regulation, as well as the lack of consideration of an asset-liability management approach, might indicate a misunderstanding of some of the singularities of retirement solutions.

Our three key messages are the following. First, the current pension debate should be used by the Commission to foster increased coordination in pension reform. When discussing the sustainability of public finance, one medium-term objective could be to recognise unfunded implicit pension commitments. Second, the prudential framework for pensions is bound to have far-reaching consequences, and it needs to respect the particularities of pension providers, which are not those of insurers. Third, new regulation should encourage the generalisation of asset-liability management practices, both for pension funds and individual retirement products, using the best available knowledge and techniques and evaluating micro as well as macroeconomic impacts. A move towards hybrid pensions could, with these objectives in mind, provide a more adequate conceptual framework for European countries to converge towards.

The European Commission Needs to Ease the Coordination of National Pension Reform

The current public debates surrounding pensions on the one hand, and budgetary coordination on the other, would greatly benefit from being held conjunctly. In all logic, unfunded first-pillar public pensions are largely structural problems due to slow-moving demographics, with a large impact on government-sponsored DB schemes and social security pension schemes. Unfunded and underfunded second-pillar pensions also have the potential to weigh on future deficits, as countries may need to eventually bail out some pension plans.

The Commission should therefore take advantage of this opportunity and, in the short run, help with citizens’ information and push for national reforms. In the longer run, taking into account unfunded implicit pension commitments in the Stability Treaty should, in our view, be envisaged, as it might be the only way to foster coordinated reform across countries.

A Specific Prudential Framework for Pensions

While a prudential framework is certainly needed, it cannot ignore the specific aspects of retirement provisions, in particular when there is a sponsor to provide guarantees. An insurance company could theoretically go bankrupt at any instant and therefore needs short-term prudential rules such as the solvency capital requirement. Pension funds, on the other hand, are truly long-term investors with long-term liabilities.

If a homogenised framework for pension supervision in Europe is needed, to model
Incentives for Asset-Liability Management

In our view, the Commission should keep in mind that the constitution of any prudential framework needs to go hand-in-hand with the design of better retirement solutions. It is pointless and wasteful to apply prudential rules to poorly designed strategies. Current pension fund practices are still largely inadequate, as are the vast majority of third-pillar products. Failing major adjustments, the needs of retirees will not be met.

Far from advocating a one-size-fits-all mandatory solution that would be designed by the regulator, we consider it essential that the industry itself takes action. But to do so, it needs to be supported by a regulation that understands the specificity of retirement needs and that will incentivise, not penalise, investment solutions that match those needs.

Currently, many pension solutions are using the wrong asset allocation strategies applied to the wrong building blocks. Often enough, they do not provide any form of risk management, or leave it as an afterthought. However, some better approaches have been proposed and thoroughly tested, notably in the form of asset-liability management. To ensure those good practices are used, the regulator has a role setting up the right incentives.

In this area, it is possible to increase pensioners’ security while also benefiting equity holders by moving towards hybrid solutions, notably through the development of subtler surplus sharing rules. If pensioners are given access to part of the plan surplus, they will be more willing to accept higher level of risk-taking, which is required to reduce the contribution burden of equity holders.

In the context of the debate about maintaining a “level playing field” with Solvency II it is clear that simplistic short-term constraints will not be beneficial on their own. The welfare cost associated with such a constraint need not be prohibitive, but it requires implementing dynamic risk management strategies that are optimal given the constraint. With or without these regulatory constraints, it appears paramount that funds actually implement and use asset-liability management models, and regularly assess their adequacy and resistance to stress.

Assessing the Micro as well as Macroeconomic Impacts Before Acting

Before proposing new frameworks for pensions with such deep-reaching consequences, it seems vital to assess its impact. A translation of a Solvency II-type regulation to the pension fund industry would require a precise evaluation of the microeconomic consequences on the funds themselves. The Quantitative Impact Study launched by EIOPA (2012b) should provide some elements in the context of the revision of the IORP directive, but it seems to mimic the Solvency II approach rather than adapting to the uniqueness of this market.
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At the same time, it is essential to also investigate the macroeconomic (so-called “general equilibrium”) effects of any reform. Pension funds are major players in European economies and are bound to become increasingly so, and imposing rules borrowed from another prudential framework should not be taken lightly. Studying, both quantitatively and qualitatively, the overall impact of introducing new rules should be the touchstone of any new regulatory initiative.

A coherent state-of-the-art framework for risk management practices is currently emerging. Rather than imposing an inadequate framework that will likely hamper the development of appropriate pension solutions, regulation should design and evaluate the best incentives for a much wider adoption of these asset-liability management techniques. After all, they are the only way to conciliate the adequacy, safety and sustainability that the Commission is aiming for.
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This paper aims to be an in-depth response to the proposals in accordance with past EDHEC-Risk theoretical research, empirical investigations and position papers on regulatory and industry topics.

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1.1 Pension Systems Should Adequately Target the Needs of Current and Future Retirees

1.1.1 Rapidly increasing liabilities and uncertainty regarding assets

The need for European pension reform is indisputable and well established. The European Commission provides, in its White Paper, a reminder of some of the salient issues for pension systems. A more comprehensive landscape of pension systems and the challenges they face can be found in OECD (2011a), although it does not cover all 27 EU countries. Our goal in this section is to recapitulate the major shift factors in these systems, the objectives and the levers that can be targeted by public policy and private pension design decisions. First, pensions must respond to solvency challenges. The financial crisis, on the one hand, has put pressure on the assets that funded pensions were invested in. Sender (2009a) discusses the consequences of the drop in funding ratios in the wake of the first wave of the financial crisis. The drop also revealed the relative absence of risk-management techniques in the investment strategies of many pension funds.

While mean reversion phenomena should mitigate losses for long-term investors, the crisis has seriously endangered the defined contribution (DC) pensions of workers closest to retirement. It has also given rise to concerns regarding the very mechanisms behind pension savings, damaging the confidence of plan members and sponsors alike. On the other hand, the economic crisis has exposed the potential vulnerability of both the corporate sponsors and European countries when paying for unfunded pensions.

Trust in the pension system cannot rely, in effect, on the sole hope that future performances will revert back to the long-term mean, likely as this may be. Without proper risk management practices and some form of prudential capital, pensions cannot hope to reach the long-term levels of wealth required to fund the liabilities. This problem is compounded by the heightened instability in the duration of liabilities, due to the more frequent transfer of pension rights and, more generally, the increased mobility of employees. These factors demand short-term solvability management.

Second, pensions must face long-term changes, notably in demographics. The most obvious is the increase in longevity, which is outpacing the hikes in retirement ages where they are not indexed. This is compounded by the evolution of the job market and careers: a typical career was once spent in a single company, whereas it is now more often segmented between several companies and countries, and frequently punctuated by spells of unemployment. Adding to this, retirees have growing needs and expectations regarding their living standards, and pensions must match their intention to make the best of longer and healthier lives in retirement.

The short run: the two crises and their consequences

In the wake of the financial and economic crises, the risks to the pension plans are more evident than ever.

The financial crisis, first, has taken a heavy toll on asset bases. For DC individual pensions, as well as funded pension funds, the impact of the drop in asset prices over
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The last five years has been dramatic. The increase in volatility of financial assets has also created concerns for investors and uncertainty on the capability to provide adequate pensions for some retirees, especially those nearing retirement age. Overall, pension assets have been struggling to recover, and have just climbed back to pre-crisis levels as of July 2011, according to the OECD (2011b). The weak bond market is not helping with the recovery (bonds now account for half of the assets under management for the countries on which OECD received data).

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**Figure 1:** Estimated median percentage surplus or deficit of 2,100 exchange-listed companies’ aggregate defined-benefit obligations

*Source: OECD (2011a)*

**Figure 2:** Pension funds’ real net investment rate of return in selected OECD countries, December 2010 –December 2011

*Source: OECD (2011b)*
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Not all pension systems, of course, are similarly affected. For instance, those with mostly pay-as-you-go pensions, where current workers pay for current retirees, should not be affected; however, they are also the systems most vulnerable to the economic crisis. As unemployment grows, fewer workers have to pay for the pensions of ever more retirees. Some older workers past the age of retirement might join their ranks, after giving up on finding a new job. Finally, countries may have to grow their deficits to finance the gap in pensions, on top of paying unemployment benefits. This is costly, especially in times of sovereign crisis, where deepening debt levels can have systemic consequences.

The OECD (2012a) states that “[p]olicy maker’s reaction to the crisis was focused on regulatory flexibility and risk management. Initiatives include an extension in the period to make up funding deficits in defined benefit pension plans, greater flexibility in the timing of annuity purchases (to avoid locking in unattractive rates), and new rules on default contribution rates and investment strategies to ensure better member protection.”

Facing these short-term challenges, both defined-benefit (DB) and defined-contribution (DC) systems are exposed, albeit in different ways. There is a risk that defined-benefit pensions cannot be sustained as promised, whether they are supposed to be funded or unfunded. But there is also a risk that defined-benefit pensions are not adequately matched to the retirees’ needs, and that public intervention will be required.

The long run: irreversible trends that need to be targeted

Adding to these short-run problems, the demographic and social trends in Europe are concerning for the current organisation of pensions. Indeed, increasing life expectancy will translate into longer lives in retirement, unless retirement ages are indexed or periodically revised.
With "baby boom" generations in retirement, the shift in the population pyramid creates pressure on the old-age dependency ratio. This ratio is defined as the number of people over 65 as a percentage of the number of people between 15 and 64. According to Eurostat, in the EU-27 countries this ratio is projected to ascend from 25.9% in 2010 to more than 50% in 2050. Germany and Italy are already markedly ahead, with ratios over 30% in 2010. Forecasts of the dependency ratio are usually quite accurate at a 20 to 25 years
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In turn, the dependency ratio measures the pressure on pay-as-you-go pensions. In particular, it appears to be quite logically correlated with pension expenditures. In fact, every additional percentage point horizon, as it is computed mostly from the number of already born individuals (with some weak hypotheses on birth and death rates).

Figure 6: Projected old-age dependency ratio
Source: Eurostat

Figure 7: Demography and total pension expenditures in the EU-27 (2009-2010)
Source: Eurostat, ERI calculations. Dependency ratio is from 2010 while total pension expenditures (as a % of GDP) are from 2009, due to the unavailability of this series for 2010.

\[ y = 0.095 + 0.46 \times, R^2 = 0.496 \]
in a dependency ratio corresponds to a half point of increase in the total pension expenditures as a fraction of GDP. This figure gives an approximation at the current date, which for obvious reasons cannot be extrapolated directly to future dependency ratios of more than 50%.

These demographic trends move slowly and are difficult to target with public policy. Examinations of policies targeting fertility (see for instance D’Addio and d’Ercole, 2005) find that they can indeed have an effect on the fertility rate, with a subsequent effect on the labour force. The response time and cost-effectiveness of such policies nonetheless need to be considered. Furthermore, the lag between birth and accession to the labour market means any such policy does not solve medium-run issues.

Another option, so as to improve the old-age dependency ratio, would be to resort to immigration. Despite the lack of economic objections, such a policy might find it difficult to garner political support in a high-unemployment context. It should be noted, nonetheless, that it is the only policy capable of rectifying the dependency ratio with immediate impact.

Some social remodelling, concomitant with these demographic trends, cannot be ignored. On the labour market, notably, typical careers have become more fragmented than they once were. It is not rare to change employers regularly during working lives, sometimes with interspersed unemployment spells; nor is it uncommon to move between countries.

Another major social change relates to the higher expectations regarding living standards in retirement. Living longer and healthier in retirement – a trend likely to continue – pensioners expect to receive appropriate revenues. Moreover, the cost of medical treatment in old age is also an increasingly heavy burden on social accounts.

Longer working lives, as well as closing the gender gap, would seem inescapable in a bid to increase labour force participation and reduce the pressures on the system.

### 1.1.2 Pension parameters used to control financing, eligibility conditions and entitlements

Many parameter adjustments can be made to temporarily fix pension adequacy, especially for first-pillar pensions. In the public sphere, the most prominently debated parameter is retirement age, which has unfortunately polarised much of the discussion about pension reform. In collective, primarily DB systems, this age is symbolic of social benefits, often a politically sensitive issue. The real question, however, should not be the specific age but the number of years of contribution. This is a much less sensitive variable to adjust, as it carries less symbolic value, and it can be made fairer by taking into account, for instance, how strenuous certain types of jobs are. The number of years taken into consideration can also vary quite significantly depending on whether periods of unemployment, leave, etc. are included or not.

The replacement rate, i.e. the share of past earnings that is actually paid out as pension, is also a parameter that can be
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marginally adjusted on its own. It is not a long-term solution, however, if pensions are to remain adequate. That said, the replacement rate can be coupled with the number of contribution years, so as to provide incentives to work longer without imposing a mandatory retirement age.

The contribution rate itself, i.e. the amount of wealth that goes into financing pensions (whether pay-as-you-go or fully funded), can also be adjusted, but not without consequences on either the employer or the employee depending on who is targeted. In a context of lower demand, this is a risky lever to pull.

Second-pillar pension plans only marginally share those tools, depending on their structure, which we discuss in the next section. Nonetheless, longer life in retirement is, for the sponsors, a considerable issue, which goes well beyond accounting risk. Longevity, in particular, is a steadily growing risk that cannot be easily hedged. We detail the evolutions of second-pillar retirement systems in section 1.2.

Third-pillar pensions are growing in importance across Europe but still suffer from discrepancies between the offer and the actual needs and competencies of members. We discuss the issues with most recent retirement products and how they could be improved in section 4.2.

Linking pensions to life expectancy, in general, is a goal that should be promoted across Europe regardless of the type of pension system. In primarily DB systems, this may mean linking the parameters controlling pensions (retirement age, replacement rate) to life expectancy.

Switching from DB to DC schemes is another way to do this: rather than being promised a given amount for life, a DC retiree bears the longevity risk and depending on the pay-out option chosen, a longer retired life might lead to a lower pension. For instance, if life expectancy increases significantly by the time a plan member retires, the cost of a perpetual annuity might be much greater. According to the OECD (2011a), “in countries with widespread, voluntary occupational pensions, employers have tended to shift these from defined benefit to defined contribution (or a mix of the two).” This is especially the case in Ireland and the United Kingdom, with Germany taking steps in that direction. It is now also the case for the quasi-mandatory occupational pension schemes in Sweden.

1.2 To become sustainable, European pensions require deep structural changes

1.2.1 Traditional public and occupational DB plans cannot be sustained as such

For the demographic and economic reason mentioned previously, traditional public DB plans (first pillar) will become increasingly unsustainable. The first pillar still enjoys a greater historical importance in Bismarck and Latin countries (Germany, France, Italy and Belgium), as well as in some northern countries and the Netherlands. In Anglo-American countries, the first Pillar is still mostly approached as a minimal social safety net. Less reliance on this pillar or a change in its functioning will therefore be accepted with different levels of pain depending on countries.
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Figure 8: Percentage of pension entitlement linked to life expectancy for a man on average earnings
Source: OECD (2011a)
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Due to the unsustainability of current public debt and public deficit levels, however, “As far as the government balance sheet is concerned, this need to cut expenses has meant that the conception of the first Pillar is progressively shifting to a poverty/safety net rather than a true replacement income: so-called Bismarck countries are seeing a progressive alignment towards the Anglo-American or Beveridge conception.” (Sender, 2012)

In a standard occupational DB scheme, on the other hand, employees receive a promise from the sponsor to pay a certain pension at a future date. It is the responsibility of the sponsor to fulfil that commitment. As Sender (2012) puts it, “the sponsor therefore bears the bulk of the financial and longevity risk.” Plan members still bear the sponsor risk: should the sponsor go bankrupt, it is unclear what happens to the members if the plan is not fully funded or poorly protected against shortfalls.

According to the survey by Sender (2011), “…in most countries, the risk of either a bankrupt sponsor leaving an underfunded pension plan or a financially weak sponsor leading to pension curtailments means that pension funds should hedge the risk of deterioration of the health of the sponsor. Such a hedge, however, is seldom considered by respondents, most frequently because it would be seen as an aggressive move by the sponsor.” A proposed solution to align the interests of the members and the sponsor would be to reduce sponsor contributions when its health is weaker.

Many employers are moving away from DB altogether. Sender (2011) highlights that accounting risk, i.e. having to strictly adjust pension liabilities on the balance sheet, is as important for sponsors as are economic risks, i.e. losses in the assets funding the pensions. Guarantees are extremely costly, so it not clear that DB can be sustained in the medium to long run.

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<thead>
<tr>
<th>Table 1: Characteristics of the types of pension plans and definitions Source: Sender (2012)</th>
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<tr>
<td><strong>Definition and characteristics</strong></td>
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<tr>
<td><strong>Pension plan</strong></td>
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<td><strong>Pension fund</strong></td>
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<td><strong>Individual DC (unless specified, &quot;DC&quot; refers to individual DC)</strong></td>
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<td><strong>Hybrid funds</strong></td>
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<td><strong>Collective DC (CDC) funds</strong></td>
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<th>Country</th>
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<tr>
<td>United States</td>
<td>0.0</td>
<td>39.0</td>
</tr>
</tbody>
</table>

Sponsor risk is not a solely operational question. As we just mentioned, a pension plan is exposed to a bad financial situation of its sponsor, but the opposite is also true. This risk that a DB pension plan impacts the financial health of the sponsor company is only becoming more acute under the new prudential rules. Such a liability needs in fact to be accounted for when considering firm decision-making, and notably capital structures. Martellini and Milhau (2011a) develop an integrated model which values pension liabilities within the context of a firm’s capital structure choice. They find that having a pension plan reduces the optimal leverage ratio, but implementing risk-controlled strategies can both protect plan members and increase overall equity value.

A move towards hybrid pension funds would alleviate some of these issues, as we discuss in sub-section 1.2.3. Further discussions in the context of prudential frameworks can be found in section 3.1, and the implementation of integrated asset-liability management strategies in sub-section 4.2.2.

Finally, some questions have to be raised as concerns the non-financial risks in DB funds. The Maxwell scandal, more than 20
years ago, showed that the segregation of pension funds’ assets with respect to the companies’ was the only option. All EU countries should ensure corporate pensions are effectively and homogeneously segregated, especially in the context of harmonisation and portability.

1.2.2 Current DC schemes need to evolve towards modern practices
In a DC scheme, each member owns a certain number of units in a funds; for a given member, the market value of his or her pension is the number of units times the net asset value per unit. At retirement, members can usually claim their pension rights as a lump sum, purchase an annuity (at a cost), or a mix of the two.

In current schemes, the member can choose between several funds. Most of these funds, in their current forms, are plagued with issues: inadequate strategies (lack of diversification, rare or antiquated life-cycle approaches), little to no risk management, high costs, limited or costly options for pay-out, lack of transparency and vulnerability to non-financial risks.

First, most funds use inappropriate strategies. An in-depth description of these problems is given in sub-section 4.2.1, where we analyse a survey of practices by Sender (2010a), which is summarised in Sender (2010b). It notably finds that only 46% use a liability-driven investment strategy, and 38% have not defined a liability-hedging portfolio. Most often, they diversify only between equity and bonds (or worse, cash), leaving out other asset classes which would bring diversification benefits. Only a few use a life-cycle approach, i.e. they consider the optimal allocation should be different as retirement gets closer. The life-cycle strategy most often used is simplistic: for instance, the allocation in equity, as opposed to bonds, is sometimes defined as a linearly decreasing function of the age of the investor, following a formula of the type “100 minus the age” or “120 minus the age” for the percentage to be allocated to equity. This heuristic approach, while it probably beats a fixed mix, is completely suboptimal in the context of stochastic stock markets.

Adding to these inappropriate strategies, little to no risk management is being performed within those strategies. The life-cycle component, for which risky asset allocations decrease as retirement approaches, is not risk management. Managing the risk involves risk diversification, risk hedging and risk insurance. Diversification ensures that investments are made with risk-adjusted performance in mind, not raw performance at the cost of taking on uncontrolled levels of risk. Risk hedging immunises the portfolio against specific risks the liabilities are exposed to. Risk insurance involves purchasing a protection against shortfalls, in particular, and is the component most often left out of pension strategies. Leaving such a complex task to the individual is preposterous: not only does he or she usually not have the skills or time to perform risk management or asset reallocation, nor do they know the composition of the available funds in the level of detail that would make it even remotely possible.

To make things worse, DC funds also tend to be very costly in terms of management and administrative fees. An often-overlooked cost is the purchase of an annuity upon...
1. EU Pension Systems are Structurally Inadequate and Unsustainable

retirement. A lump sum is not a satisfactory pay-out option for most people, as consumption needs to be spread over an uncertain length of time.

Finally, there is a lack of transparency in the fund management industry and its governance, and the actual nature of financial and non-financial risks involved. The non-financial risks are a matter of particular seriousness for DC funds. If assets are properly segregated from the companies, there are fewer risks for sponsored plans in the event of a bankruptcy, given the fund is not heavily invested in the sponsor company. Nonetheless, the assets DC funds are invested in are subject to a number of non-financial risks common to the fund management industry, especially when it comes to sub-custody risk, counterparty risk when derivatives are used, or infrastructure and operational risk. For individual products, mis-selling is also a major issue, and protection against it should be ensured. Proper segregation between individual accounts is also crucial when either the management or the infrastructure is collective.

Non-financial risks therefore need to be dealt with, especially for pension funds. The typically-opaque processes in the fund management chain are a major cause of their recent rise. They are not just a concern for the investors: according to the survey by Amenc, Cocquemas and Sender (2012), transparency and governance are top priorities as well for the fund management industry itself. Improving the practices should therefore be high on the agenda, and some options are clearly favoured by respondents: more transparency and information on these risks, as well as recognising the primary responsibility of fund managers, and not just depositaries – on which too much of the emphasis has been put recently.

There is therefore a need for savings products responding to all these criticisms, and conforming to the prescriptions of modern financial theory. These prescriptions are described in sub-section 4.2.3. In particular, it is essential to adopt a risk management framework that models the liabilities, and takes into consideration the time horizon and the risk budget. Such a strategy can be implemented using the three pillars that are liability-driven investing (LDI), life-cycle investing (LCI) and risk-controlled investing (RCI).

In terms of structure, DC pension funds must have sound default options, as many investors do not look past those. They have to be cost-efficient, and professionally managed. Such funds are dubbed “DC 2.0” by Sender (2012).

1.2.3 Towards a hybrid framework
Since DB funds put all risks on the sponsor while DC funds put them on the plan member, moving completely from DB to DC is rather problematic. Transferring risk from sponsors to individuals is too much of a burden: individuals are usually ill-equipped to properly manage their DC investments. Large gains could be found from an encompassing professional asset management scheme that would still respect certain individual constraints. The implementation of such strategies is discussed in more detail in sub-section 4.2.2. A conceptual shift can facilitate this transition. Sender (2012) explains the goal should be a move towards hybrid models, with less reliance on the sponsors but not
1. EU Pension Systems are Structurally Inadequate and Unsustainable

A full transfer to individuals either. This framework could accommodate various degrees of risk-sharing within and between generations. It would create new parameters to ensure the sustainability of pensions to the demographic evolutions. The degree of hybridity can be determined as a function of how much investment risk the plan member can take on, as opposed to (final or average) wage and unemployment risks.

"Hybrid schemes are typical of continental Europe. They are regulated and must offer minimum guarantees. Indexation, decided each year, is conditional on the return of the fund’s assets (compared the increase of the fund’s liabilities). Such a conditional indexation involves risk-sharing at all levels: poor performance first of all means lower indexation, then sponsor recovery. This risk-sharing contrasts with traditional DB funds where poor financial performance means a greater pension liability in the accounts of the sponsor, but no change for participants. In DC funds, poor performance means a diminished pension pot." (Sender, 2012)

A flexible guarantee scheme is paramount. Indeed, typical hybrid plans currently impose strict nominal guarantees. For younger contributors, they can prove an unnecessary hurdle to the performance of the fund, especially if they come at the price of inflation indexation. For older contributors, in general, short-term guarantees are more useful, as risk undertaken closer to retirement age can have drastic consequences on future pension payments. On top of this life-cycle dimension, the hybrid scheme should take advantage of having a sponsor, like in the DB case, so that guarantees can be modulated in a countercyclical way.

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**Figure 9: Spectrum of risks and scheme structure**
Source: Oxera (2008)

**Table 3: Risks in DB and DC funds in the accumulation phase**
Source: Oxera (2008)

<table>
<thead>
<tr>
<th></th>
<th>DB</th>
<th>DC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Investment risk</strong></td>
<td>Borne by sponsor; indirectly, risk may be borne by different cohorts of plan members</td>
<td>Borne by member, but risk can be managed</td>
</tr>
<tr>
<td><strong>Longevity risk</strong></td>
<td>Borne by sponsor; indirectly, risk may be borne by different cohorts of plan members</td>
<td>Borne by member. Can be shifted through purchase of annuity (subject to annuity conversion risk).</td>
</tr>
<tr>
<td><strong>Wage path risk</strong></td>
<td>Borne by member</td>
<td>Risk reduced because contributions are based on the specific contributions made by, or on behalf of, a member and depend on lifetime earnings</td>
</tr>
<tr>
<td><strong>Job tenure risk</strong></td>
<td>Borne by member</td>
<td>Risk reduced due to greater portability of DC pensions</td>
</tr>
<tr>
<td><strong>Default risk</strong></td>
<td>Borne by member (unless pension insurance system where the risk and costs are shifted to a third party)</td>
<td>No risk to member (except where pension plan assets are invested in employer stock)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No risk of default of pension provider, provided members’ assets are segregated and ‘kept safe’</td>
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</table>
1. EU Pension Systems are Structurally Inadequate and Unsustainable

dependent on the health of the sponsor. A somewhat lessened pressure, in dire times for the sponsor, would thus limit the risk of triggering a complete collapse.

Regarding the various risks to which pension funds are exposed, hybrid funds can find some middle ground and be a lot more flexible, especially in the future as underlying parameters evolve.

Risk sharing can have both advantages and disadvantages, depending on the implementation. Indeed, it might limit the need to purchase guarantees like individual annuities, which can be expensive, and the fund can instead pool the aggregate longevity risk and rely on longevity swaps for hedging. The gains from using such techniques could be substantial. At the same time, the level of risk sharing needs to be adequately defined so that guarantees, especially regarding longevity risk, do not end up becoming too costly. Costly guarantees may reduce the capacity of funds to take the right investment risks.

Formal investigations of integrated asset-liability management are therefore needed. The papers by Martellini and Milhau (2011a) and Martellini, Milhau and Tarelli (2012) lay the foundation for such an approach. Their work finds that it is possible to increase pensioners’ security while also benefiting equity holders by moving towards hybrid solutions, notably through the development of more subtle surplus sharing. If pensioners are given access to part of the plan surplus, they will be more willing to accept higher levels of risk-taking, which is required to reduce the contribution burden of equity holders. As we detail in sub-section 4.2.2, such solutions need to be emphasised to

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Pros</th>
<th>Cons</th>
<th>Recommendation</th>
</tr>
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<tbody>
<tr>
<td>Traditional DB fund</td>
<td>Professional management structure; target (real) retirement income</td>
<td>Strong regulatory and accounting requirements and strict rules. Difficult to transfer</td>
<td>Secure sponsor risk, hedge longevity risk.</td>
</tr>
<tr>
<td>Individual DC fund</td>
<td>In theory can be adapted to very diverse individual situations and risk appetite and wealth drivers. Easy to transfer (when no external guarantees)</td>
<td>Poor communication: market value does not give clear indication about retirement income (annuity); Restricted ability to diversify. Often poor governance and costly</td>
<td>Ensure: - a professional management framework - the ability to diversify widely (PSP) - Stochastic life-cycle investing as a risk management solution - collective annuities - communication of guarantee and associated costs</td>
</tr>
<tr>
<td>Hybrid funds (including Dutch collective DC regulated as hybrids)</td>
<td>A flexible framework that allows various forms of risk-sharing</td>
<td>Often regulated with the requirement to give nominal guarantees; Intergenerational risk sharing often not fair in practice</td>
<td>- give more regulatory flexibility - ensure that risk-sharing is made on fair grounds</td>
</tr>
</tbody>
</table>

Table 4: Pros and cons of DB, DC and hybrid funds
Source: Sender (2012)
1. EU Pension Systems are Structurally Inadequate and Unsustainable

align the interests of shareholders and plan members.

Finally, an important aspect of any pension reform is how understandable the system is for plan members. A common “hybrid” framework, if it expresses contribution and entitlements in an intelligible way for the contributors, might be a good starting point, which might facilitate convergence across Europe.
2. The EU must push for Reform in Member States through Monitoring and Awareness
2. The EU must push for Reform in Member States through Monitoring and Awareness

2.1 The European Union Can Effectively Monitor Reforms and Spread Information Regarding Best Practices

2.1.1 Monitoring of national reforms should anchor pension reform in the public debate

The European level is not where one should act to change the design of pension systems, and the European Commission is rightly aware that any structural reform will have to go through the national level. It can and should, however, encourage such reforms, and effective multilateral monitoring of pension and labour market reforms (points 1 and 2 of the White Paper) by the Commission and the various Committees (EMCO, EPC, SPC), within the Europe 2020 benchmarking objectives, should be one way to do it.

(1) In the framework of the Europe 2020 strategy, the Commission will closely monitor and encourage pension and labour market reforms in line with the Annual Growth Surveys and the Country Specific Recommendations with the aim of bringing about later pension take-up including, by the timely equalisation of pensionable ages for women and men where this has not already been done and linking retirement ages to increases in life expectancy.

(2) The Commission will support the EMCO, EPC and SPC in their multilateral surveillance of pension reforms and offer financial support to Member States through the PROGRESS programme and the future Programme for Social Change and Innovation to facilitate mutual learning and policy development.

To be effective, monitoring needs to firmly anchor the issues that have been raised in the public debate. A communication strategy therefore needs to accompany the monitoring so that the results of the reporting are heard in the national level discussions. The 2012 Ageing Report, the 2012 Sustainability Report, and the 2012 Pension Adequacy Report (point 20 of the White Paper) should notably provide such occasions.

A vivid part of the current public debate relates to the Treaty on Stability, Coordination and Governance (commonly referred to as “Fiscal Compact”), currently being ratified across Europe. While leaving the criteria of the Stability and Growth Pact untouched, it defines a new concept of “structural deficit” corresponding to the budget deficit net of cyclical effects and one-off and temporary measures. This structural deficit should not exceed 0.5% of GDP (1% for countries with debt-to-GDP ratios significantly below 60%) and should be monitored by independent institutions. The European Court of Justice would be able to impose compliance measures, and eventually financial sanctions of up to 0.1% of GDP, if its ruling is not followed. Adoption of this treaty and implementing it into binding national legislation, in turn, would give eligibility to the funds of the European Stability Mechanism.

The link between such budgetary constraints and pension financing was debated before, notably by the European Commission (see for instance Beetsma and Oksanen, 2007). It now seems more important than ever as the notion of measuring structural deficit is raised. In all logic, unfunded first-pillar public pensions are largely structural
problems due to slow-moving demographics described in the first section of this paper. Unfunded and underfunded second-pillar pensions also have the potential to weigh on future deficits, as countries may need to eventually bail out some pension plans. In the context of increased financial solidarity in Europe, the variety of pension systems therefore poses a latent threat to the sanitising of public finances across Europe. An estimate of the different fiscal burdens by the OECD can be found in Ponds, Severinson and Yermo, 2011. Government-sponsored DB schemes and social security pension schemes are very significant across Europe. Even before the crisis, Mink (2010) calculated that at the end of 2007, average government debt stood at 70% of GDP in the Eurozone, while accrued-to-date contingent pension obligations represented an additional 330% of GDP (compared to 60% and 170%, respectively in the United States). These high levels of commitments represent acute structural challenges, which are crucial much in the same way as a structural deficit.

The Commission should therefore take advantage of the current debate on pensions to facilitate the move towards greater coordination of pension provision systems in Europe. In the short run, helping with citizens’ information and pushing for national reforms should be the minimum priority. In the longer run, taking into account unfunded implicit pension commitments in the Stability Treaty should, in our view, be envisaged, as it might be the only way to foster coordinated reform across countries.

(20) The Commission, in cooperation with the EPC will release the 2012 Ageing Report, assessing the economic and budgetary impact of ageing, which will form the basis for a thorough assessment of the
2. The EU must push for Reform in Member States through Monitoring and Awareness

sustainability of public finances envisaged for release in the Commission’s 2012 Sustainability Report. In cooperation with the Social Protection Committee it will also prepare in 2012 a Pension Adequacy Report which can help Member States, in the context of the Platform against Poverty, to assess the adequacy of their pensions systems for women and men.

The Active Ageing Report of the European Commission (2012a) is an interesting overview of the differences of opinion within Europe on old age, retirement and pensions. It eloquently shows the width of the gap there is to bridge if pension systems are to someday converge.

Worryingly, there seems to be a rather large opposition to the necessary increase in the official retirement age by 2030. These results, of course, should be viewed in the context of different national starting points and different views on future longevity gains. Nonetheless, reforms that would increase retirement age or index it on longevity where it is not already the case are likely to be met with resistance.

Another striking example is the opinions on whether people should be allowed to continue working after the official retirement age. While northern Europe countries seem to largely accept this possibility, it is quite strongly rejected by southern Europe countries. Reforms that would push for more individual choice, rather than increasing the retirement age across the board, would certainly be met with resistance in those countries as well.

Communications such as the Active Ageing Eurobarometer are very useful, and such comparative landscapes of European pensions should also be promoted for the monitoring of reforms themselves. Easily accessible and understandable reports, indeed, are more likely to be picked up by
2. The EU must push for Reform in Member States through Monitoring and Awareness

the media and to capture the interest of the general public. The OECD does impressive work on the countries it covers (see OECD, 2011a), while unfortunately such complete statistics are not yet available for all 27 EU countries.

2.1.2 Spreading information regarding best practices
Beyond just monitoring, the European Union can contribute to sharing knowledge and experience across European countries. In the context of complementary private savings, the proposed review of good practices (point 10 of the White Paper) for individual pension statements is a positive step.

(10) The Commission will invite the SPC to review good practice with regard to individual pension statements with the aim of encouraging Member States to provide better information to individuals for their retirement planning and decisions on how much to save through supplementary pension schemes.

Transparency and better governance should be promoted at every level, but even more so when it comes to individual investors. Pension systems need first and foremost to be legible for their members.

Pension tracking systems are one possible way of doing this (point 17 of the White Paper), which should also facilitate cross-border activity and portability (see section 3.2).

(17) The Commission will promote the development of pension tracking services allowing people to keep track of their pension entitlements acquired in different jobs. It will consider, in the context of the revision of the IORP directive and the proposal for a portability directive, how the provision of the required information for pensions tracking can be ensured, and it will support a pilot project on cross-border tracking.

The role of the EU in spreading information can be much larger than this. As we mentioned, appropriate and easy access to comparable information regarding other member states can steer the national debates in the right direction.

Regarding individual retirement planning and decisions, the European Commission should consider studying the current state of knowledge regarding behavioural incentives. For instance, auto-enrolment in complementary savings plans, with opt-outs rather than opt-ins, could stimulate private retirement savings.

2.2 The European Union Can also Encourage Social Dialogue and Promote Higher Labour Market Inclusion

2.2.1 Multilateral negotiations are useful for awareness and should include the pension management industry
The European Commission notably proposes launching a consultation of social partners on how unwarranted mandatory retirement ages could be revised in collective agreements and national legislation (point 8 of the White Paper).

(8) The Commission will consult the social partners on how unwarranted mandatory retirement ages could be revised in collective agreements and national legislation.
More generally, the European Union has a role steering the national-level discussions and call on social partners to negotiate when it is insufficiently the case. Those multilateral negotiations can be a good way to discuss the best practices mentioned above.

Career management and adapting the workplace to those changes are also important and can take place within the context of the European Social Dialogue (point 6 of the White Paper).

(6) In the framework of European Social Dialogue, the Commission will call on the social partners to develop ways of adapting work place and labour market practices, including career management notably regarding strenuous jobs, so as to facilitate longer working lives for women and men. The European Foundation for the Improvement of Living and Working Conditions and the European Agency for Safety and Health at Work will provide expert advice at EU level.

However, discussions should also include the pension management industry, which will be deeply affected by the structural reforms taking place across Europe. It needs to adapt in a way that not only guarantees its own capacity to keep functioning, but also to better serve the needs of current and future retirees.

Currently, second- and third-pillar pensions have rarely adopted satisfactory asset-liability management practices. The evolution on the front of how pension assets are managed should go together with the structural evolutions in the workplace that funds them.

2.2.2 Towards higher labour market participation through social dialogue

The White Paper rightly points out that higher labour market participation is paramount, and it can be obtained mainly by two levers: older workers (points 4, 5 and 7 of the White Paper) and women (point 3 of the White Paper).

(4) During the European Year 2012 on Active Ageing and Solidarity between Generations the Commission will raise awareness of the benefits and possibilities of working longer and stimulate the dissemination of good practices of age management in work places and labour markets.

(5) In the framework of Europe 2020, the Commission will step up its support for policy coordination and joint work on enabling and encouraging older workers, women in particular, to stay longer on the labour market. This will include promoting joint work by the SPC and EMCO on gender specific obstacles to, and opportunities for, extended working lives, the development of end-of-career labour markets across the Member States and projects under the European Innovation Partnership on active and healthy ageing.

(7) Building on its proposal for the European Social Fund in the 2014-2020 programming period, the Commission will encourage Member States to make use of the ESF for supporting active and healthy ageing, including reconciliation of work and family life, and will closely monitor whether ESF programmes effectively support the reform needs identified in this area in the Country Specific Recommendations.
2. The EU must push for Reform in Member States through Monitoring and Awareness

As we mentioned, there seems to be a lot of disagreement across Europe on the idea of longer working lives, and while this is unlikely to change very quickly, social dialogue and the promotion of national initiatives helping older workers stay in employment should be favourable steps.

Nonetheless, it should be recognised that while the employment of older workers is important to limit excessively long (and thus costly) retirements, it is also crucial, both for primarily DB and DC systems, that younger workers are also integrated into the labour market. It is therefore necessary to act at both ends of working lives.

(3) The Commission will ask the relevant committees (e.g. SPC, Advisory Committee on equal opportunities between women and men) to identify and recommend best practice in reducing the gender gap in pensions (e.g. promotion of equal pay, minimum pension entitlements, care credits, pension rights splitting at divorce).

As far as the gender gap is concerned, there seems to be widespread agreement that retirement ages should be aligned for men and women, and any steps taken in favour of greater equality and fairness should be welcome.
2. The EU must push for Reform in Member States through Monitoring and Awareness
3. At the European Level, much can be done for Harmonisation and Portability
3. At the European Level, much can be done for Harmonisation and Portability

3.1 Harmonisation is Beneficial if it Does not Mean Oversimplification

3.1.1 Applying Solvency II rules to IORPs directly would be a grave mistake: prudential rules need to reflect that pension providers are not insurance providers

The proposed revision of the IORP directive, which is expected later this year, is the main tool to improve pension provisions across Europe (point 11 of the White Paper).

(11) The Commission will, in 2012, present a legislative proposal to review the IORP directive. The aim of the review is to maintain a level playing field with Solvency II and promote more cross-border activity in this field and to help improve overall pension provision in the EU. This will help address the challenges of demographic ageing and public debt.

Two main items need to be pointed out: the promotion of cross-border activity, which is discussed in the next section, and the item of the White Paper that raised outcry in the financial industry – the ambition to maintain a “level playing field” with Solvency II.

Commissioner Barnier dismissed having “said or implied” that Solvency II rules would be applied as such to pension funds, without really alleviating the concerns raised by professionals (see e.g. Sourbes, 2012). It is still based on an erroneous depiction of regulatory competition between pension and insurance providers, and it deserves to be explained in greater detail.

While a prudential framework is certainly needed, it cannot ignore the specific aspects of retirement provisions, in particular when there is a sponsor to provide guarantees. We notably tackled this question in Amenc, Martellini and Sender (2009) and Sender (2012).

If a homogenised framework for pension supervision is needed in Europe, to model it after Solvency II is a mistake. While insurance providers may want to position themselves in competition with pension providers, it is a misunderstanding of the specificities of pension provision. Notably, it does not account for the role of the sponsor’s contingent capital; nor the specific delegation chain and management of pension schemes in Europe, in which social partners often have a strong role.

The White Paper does not detail what a “level playing field with Solvency II” exactly entails. However, in its Call for Advice to EIOPA, the Commission stated that the proposals “should endeavour to maintain consistency across financial sectors...the general layout of the supervisory system should, to the extent necessary and possible, be compatible with the approach and rule used for the supervision of life assurance undertakings subject to Directive 2009/138/EC (Solvency II)” (European Commission, 2011).

The response of EIOPA (2012a) is more encouraging: “As the EU authority for both occupational pensions and insurance, EIOPA will adopt a consistent approach to both sectors. It is important to emphasise that consistent is not the same as identical, and that sometimes the differences will merit different approaches.”
Furthermore, “[i]n some areas, in response to the Commission’s questions, EIOPA’s advice recommends for IORPs an approach similar to that for insurance undertakings. For example, the approach at the level of principle to the governance of IORPs and insurance undertakings is recommended to be the same. Where the advice recommends the application at principle level of the Solvency II framework to IORPs, the differences between insurance undertakings and IORPs should still be respected.”

Those differences are indeed crucial. In particular, the Solvency II approach is not suited to pension funds because it does not recognise the role of the sponsor. An insurance company could theoretically go bankrupt at any instant and therefore needs short-term prudential rules such as the solvency capital requirement, calibrated as a Value-at-Risk at the one-year horizon.

Pension funds, on the other hand, are unique in that they are truly long-term investors with long-term liabilities. The role of the sponsor should guarantee that they could weather underfunding. Even in the rare event of a sponsor going bankrupt (assuming no insurance has been purchased against it), a fully-funded plan may be able to fulfil its promises.

As Amenc, Martellini and Sender (2009) point out, “[p]ension funds are a sub-product of the employment contract, not a competitive financial service. This prevents the risk of client runs commonly faced by insurance companies and banking corporations, a risk that brings the investment horizon nearer. In pension funds, deficits do not make employees resign”. This means the pension commitment is an inherent part of the work contract “package” and it carries an implicit incentive for the employee to participate in the continued success of the firm, especially when a pension is underfunded.

The costs of applying Solvency II to pension providers are also likely to cause major counterproductive effects. According to Amenc, Martellini and Sender (2009), “technical provisions would, in most cases, rise markedly under Solvency II. SII requires that technical provisions be the best estimate cash flows discounted at the risk-free rate. Best estimate involves the use of the projected method, not the accrued liability as required by the IORP directive. The valuation of conditional indexation and future salary increases, and the use of a lower discount rate in the UK and Switzerland (where risk premiums are allowed in the calculation of the discount rates) are sources of increases for technical provisions. [...]Overall, various studies conclude that funding requirements would be increased by 30% to 50% in many countries, with Germany the least affected (as guarantees are already discounted at a rate lower than the risk-free rate) and the UK the most severely affected.”

Instead of helping to secure pensions, applying Solvency-type rules would therefore have reverse effects. They would curtail the ability to take long-run risks, dramatically change the investment mix towards positions so conservative that the funds would be in great danger of being unable to finance future pensions. Equity investments would be the first to suffer under these rules (see for instance Kay, 2012). This, in turn, would make pension indexation even more costly, impose higher

3. At the European Level, much can be done for Harmonisation and Portability
contribution rates or lower replacement rates on employees, and put immediate stress on employers’ balance sheets, as they would need to adjust their funding ratios to the appropriate levels.

Moreover, the “standard formula would very likely signal the death knell for DB pension funds because it would lead to higher funding requirements and make it harder to take on investment risk and rewards” (Amenc, Martellini and Sender, 2009).

This dire picture does not mean, however, that no prudential framework should be applied to pension funds. But this framework needs to promote sound long-term investment practices, notably asset-liability management rules (see part 4 for suggestions on how to do this), rather than impose the wrong framework. Internal models are one aspect of Solvency II that could, if done right, be interesting to adapt to pension funds. If thoroughly tested and conditioned to a use test, such models could be a good vehicle for medium to large funds to introduce modern and dynamic risk management into their everyday practices.

3.1.2 The proper vehicle for pensions has to be specifically designed for them

As expressed in Sender (2012), we strongly disagree with the proposals that have sometimes emerged (see for instance EFAMA, 2010) for a unique retirement fund vehicle, nested in the retail fund UCITS framework, which could be accessed throughout Europe. Indeed, the current regulatory framework for DC funds is not conceptually fit for retirement, and has probably contributed to severely sub-optimal funds as many regulated entities blindly adhere to regulatory prescriptions. DC funds must have their own regulation, potentially inspired by both that of Dutch collective DC funds and defined benefit funds.

“...This regulation must encompass the fiduciary duties of trustees, which are expected to be greater than those of other actors who could be defined in a global investment regulation framework: the independence of trustees/administrators
3. At the European Level, much can be done for Harmonisation and Portability

should be as great as possible, and part of their mandate should involve trying to reduce unnecessary expenses. In fact, they should be hired by the plan, not by the fund or by its manager. DC regulations should also ensure that the eligible assets, investment strategies and risk constraints fit given objectives. Retirement fund products would be able to invest at least as DB funds currently do, and would not be subject to liquidity constraints other than those related to cash-outflows from their liabilities and adequate risk management in general.

Investing in the long-term is, of course, conditioned by asset management techniques which take this long horizon explicitly into account, as we discuss in more detail in sub-section 4.2.1. It also requires, in parallel, that the institutional environment be geared towards the long run.

In particular, it is paramount that asset managers are given long-term incentives aligned with their clients' objectives. This point is notably developed in a recent Review of the UK equity market (Kay, 2012, recommendation 16), and it would be beneficial to take it into account more widely, and independently of any given market. Currently, the short-term incentives of asset managers too often lead to following indices with a certain tracking error, rather than using adequate long-term strategies.

We discuss in sub-section 4.1.2 how a common certification scheme for general principles could help to harmonise the pension investment landscape.

3.2 Portability is Still Far on the Horizon

3.2.1 Promoting cross-border activity of European workers through the revision of IORP

The IORP directive (European Commission, 2003) aims to facilitate the efficient provision of pension solutions across Europe. One stated goal is to promote cross-border activity, notably through trans-border pension plans and pooling of pension assets. While discrepancies in Europe are still great, the evolution of the industry landscape could progressively make this goal accessible.

According to Sender (2012), the IORP II directive “will also provide the condition for a more efficient European market for pensions, notably by creating the possibility of European pension plans as well as pools of European pension assets”. This is, again, an implicit regulatory push towards DC, since “[p]ooled pension plans and pension plan platforms, whether they are pan-European or at a country level, are much easier in DC plans due to the ease of valuing liabilities in such plans.”

The main reason for this is that different companies might have extremely different structures for their DB plans, and might have made very diverse commitments to the plan members. Most of the room for pooling in DB plans lies with fiduciary managements, while DC plans can more easily find economies of scale within the asset management itself, including across borders.
3. At the European Level, much can be done for Harmonisation and Portability

3.2.2 Resuming work on the Portability directive and related harmonisations and extending the scope of Regulation 883/2004/EC

Another major piece of pension legislation expected for 2012 is a Pension Portability directive “setting minimum standards for the acquisition and preservation of supplementary pension rights” (point 15 of the White Paper). In the context of increased European mobility during careers, this should be a priority, and a first step towards deeper convergence.

(15) In 2012, the Commission will, in close cooperation with the Council and the European Parliament, resume work on a pension portability Directive setting minimum standards for the acquisition and preservation of supplementary pension rights. While promoting cross-border pension mobility for all occupations, the Commission will also pursue the on-going work on a pan-European pension fund for researchers.

The examination of tax and contract-law obstacles to cross-border activities (points 18 and 19 of the White Paper) should complement this approach.

(18) The Commission will investigate whether the tax rules concerning (i) cross-border transfers of occupational pension capital and life insurance capital (ii) life insurance contributions paid to providers established elsewhere in the EU and (iii) cross-border investment returns of pension and life insurance providers, including their income from real estate and capital gains present discriminatory tax obstacles to cross-border mobility and cross-border investments; where necessary, it will initiate infringement procedures. The Commission will also discuss with Member States how to reduce the risk that cross-border pensions are subject to double taxation (or escape taxation altogether).

(19) The Commission will explore the need for removing contract law-related obstacles to the design and distribution of life insurance products with savings/investment functions with the aim of facilitating the cross-border distribution of certain private pension products.

Finally, the Commission could possibly envision a more encompassing approach to Regulation 883/2004/EC on the coordination of social security systems (point 16 of the White Paper) for certain occupational schemes. This could also encourage pension mobility by simplifying administrative procedures.

(16) The Commission will in 2012 assess the case for extending the scope of Regulation 883/2004/EC on the coordination of social security systems as regards certain occupational schemes.

Employees should view all of these measures with a positive eye. Easier portability of pensions across Europe, in line with the single market principle, makes definite sense in the context of the Europeanisation of careers. Furthermore, allowing economies of scale in cross-border pension funds should also be generally positive for all actors.

However, one of the principal reasons progress has stalled on many of these proposals, including the Pension Portability directive, is that pension systems, and more
3. At the European Level, much can be done for Harmonisation and Portability

generally the tax and legal systems, are still too profoundly different in Europe. Without this much deeper integration, it will be difficult to successfully obtain portability except in very particular cases.

One possibility, to ease the integration process, would be to start thinking about pensions within the general hybrid framework proposed in Sender (2012), where hybridity is defined as the degree of risk-sharing between plan sponsors and members.
3. At the European Level, much can be done for Harmonisation and Portability
4. Improving the Design Quality and Governance of Retirement Products is a Necessary Element of Pension Reform
4. Improving the Design Quality and Governance of Retirement Products is a Necessary Element of Pension Reform

4.1 Codes of conduct and certification at the EU level would be steps in the right direction

4.1.1 Codes of conduct and good practice for second- and third-pillar pensions

Improving the practices for second- and third-pillar pensions across Europe is a worthy goal, and one that can be tackled at the European level. The White Paper makes proposals in this direction.

Regarding second-pillar occupational pensions, the Commission suggests a code of good practice (point 14 of the White Paper) to improve the governance and transparency of the plans.

(14) Working with stakeholders such as the social partners, the pension industry and advisory bodies such as the Pension Forum, the Advisory Committee on equal opportunities between women and men, the Commission will develop a code of good practice for occupational pension schemes (2nd pillar), addressing issues such as better coverage of employee, the payout phase, risk-sharing and mitigation, cost-effectiveness and shock absorption.

Such a proposal is a positive step. As was apparent from the survey of pension funds practices in Sender (2010a), many are worryingly lagging behind in adopting the best practices. Amongst respondents, less than a third used a risk-controlled investing (RCI) strategy to manage prudential constraints. Their use of modern practices to design the portfolios is inadequate; in particular, most use market indices as benchmarks, even though they are highly inefficient and poorly diversified. Only a third managed accounting risk and less than half took sponsor risk into account. Finally, very few funds were actually assessing the adequacy of their asset-liability management (ALM) strategies, for instance by stress-testing their portfolios. A code of good practice would go a long way to improve the adoption of better practices, along with previously mentioned issues of costs, pay-out options and risk management. This code would need, however, to make use of the prescriptions of modern risk management literature. Some recommendations and references for moving in this direction are suggested in section 4.2. So as to improve transparency, funds acting in accordance with this code could make mention of it in their documentation.

As far as operating costs go, there are large discrepancies between countries. The OECD (2011a, 2011b) shows a range that goes, for EU countries, from 0.1% of asset under management for Luxembourg to 1.1/1.3% for Spain and 1.4% for the Czech Republic. On this front alone, improvements in practices can certainly be attained.

Regarding third-pillar pensions, a voluntary code of conduct on consumer information and protection (point 13 of the White Paper) is also a helpful proposal. In our view, it would need to be elaborated in conjunction with the financial industry, or could ideally serve as a mode of self-regulation by the industry. In the latter case, the industry could push forward the necessary adaptations more rapidly as the context and products evolve, while the response time of other bodies might be slower.
4. Improving the Design Quality and Governance of Retirement Products is a Necessary Element of Pension Reform

(13) The Commission will, by 2013, present an initiative aimed at raising the quality of third-pillar retirement products for women and men and improving consumer information and protection standards via voluntary codes and possibly an EU certification scheme for such products, building, where appropriate, on measures to improve information for consumers planned for 2012 on ‘packaged retail investment products’ (PRIPs).

An example of how to use a code of good practices towards better transparency and information is provided in the recently published Kay Review of the UK equity markets (Kay, 2012). It notably proposes some broad principles that should be respected by asset holders and asset managers, respectively, so as to provide the appropriate environment for long-term investing. Such an approach could clearly be extended outside of the UK and of equity markets and benefit the pension investment industry as a whole.
4. Improving the Design Quality and Governance of Retirement Products is a Necessary Element of Pension Reform

Table 5: Good practice statements proposed by Kay (2012)
Source: Kay (2012)

<table>
<thead>
<tr>
<th>Good Practice Statement for Asset Holders</th>
<th>Good Practice Statement for Asset Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Holders should...</td>
<td>Asset Managers should...</td>
</tr>
<tr>
<td>1. recognise that they are in a position of trust managing client money and should act at all times in the best long-term interests of their clients, informing them of possible conflicts of interest and avoiding these wherever possible.</td>
<td>1. recognise that they are in a position of trust managing client money and should act at all times in the best long-term interests of their clients, informing them of possible conflicts of interest and avoiding these wherever possible.</td>
</tr>
<tr>
<td>2. operate within a culture of open dialogue with beneficiaries – building an agreed understanding of investment objectives and risks.</td>
<td>2. operate within a culture of open dialogue with beneficiaries – building an agreed understanding of investment objectives and risks, which is informed by their investment expertise.</td>
</tr>
<tr>
<td>3. provide information to beneficiaries, including information on investment performance, in a way which is clear, timely, useable and relevant to clients’ investment objectives.</td>
<td>3. provide information to clients, including information on investment performance, in a way which is clear, timely, useable and relevant to the long-term creation of value in the investee companies, and therefore to clients’ investment objectives.</td>
</tr>
<tr>
<td>4. be proactive in setting mandates for asset managers based on open dialogue about agreed investment objectives.</td>
<td>4. disclose fully all costs that fall on investors in a way that investors can understand.</td>
</tr>
<tr>
<td>5. set mandates which focus managers on achieving absolute returns in line with beneficiaries long-term investment objectives, rather than short-term relative performance benchmarks.</td>
<td>5. ensure that income generated from lending securities is rebated in full to the fund, with any related costs disclosed separately.</td>
</tr>
<tr>
<td>6. recognise that diversification is the result of diversity of investment styles.</td>
<td>6. adhere to the investment strategy agreed with clients.</td>
</tr>
<tr>
<td>7. review performance no more frequently than is necessary, and with reference to long-term absolute performance.</td>
<td>7. prioritise medium to long-term value creation and absolute returns rather than short-term returns from market movements when making investment decisions.</td>
</tr>
<tr>
<td>8. encourage and empower asset managers to engage with investee companies as a means of improving company performance to deliver investment returns.</td>
<td>8. build an ongoing relationship of stewardship with the companies in which they invest to help improve long-term performance – recognising that engagement goes beyond merely voting.</td>
</tr>
<tr>
<td>9. make investment decisions based on judgments about long-term company performance, informed by an understanding of company strategy and a range of information relevant to the specific company, and avoiding reliance on single measures of performance.</td>
<td>9. make investment decisions based on judgments about long-term company performance, informed by an understanding of company strategy and a range of information relevant to the specific company, and avoiding reliance on single measures of performance.</td>
</tr>
<tr>
<td>10. be prepared to act collectively to improve the performance of their investee companies.</td>
<td>10. be prepared to act collectively to improve the performance of their investee companies.</td>
</tr>
<tr>
<td>11. be paid in line with the interests and timescales of their clients. Specifically remuneration should not be related to short-term performance of the investment fund or the performance of the asset management firm. Instead, a long-term performance incentive should be provided in the form of an interest in the fund (directly or via the firm) to be held until the manager is no longer responsible for that fund.</td>
<td>11. be paid in line with the interests and timescales of their clients. Specifically remuneration should not be related to short-term performance of the investment fund or the performance of the asset management firm. Instead, a long-term performance incentive should be provided in the form of an interest in the fund (directly or via the firm) to be held until the manager is no longer responsible for that fund.</td>
</tr>
</tbody>
</table>

Transparency, information and governance should be emphasised for third-pillar products. As we discussed earlier (see notably section 1.2), the needs on those questions for retirement products are relatively similar to other retail-oriented products, and the industry agrees that regulation on these themes is a priority.

Cocquemas and Sender (2012) conducted a survey which analysed a wide range of non-financial risks and looked at asset managers and institutional investors (including pension funds). Both seem to largely agree on the importance of those themes, with different views only for some very specific themes.
4. Improving the Design Quality and Governance of Retirement Products is a Necessary Element of Pension Reform

Since transparency and protection standards are parallel concerns, it does make sense to include them in the Packaged Retail Investment Products (PRIPs) initiative. According to the European Commission (2009), “[t]hese products can take a variety of legal forms which provide broadly comparable functions for retail investors: [t]hey offer exposure to underlying financial assets, but in packaged forms which modify that exposure compared with direct holdings; [t]heir primary function is capital accumulation, although some may provide capital protection; [t]hey are generally designed with the mid- to long-term retail market in mind; and [t]hey are marketed directly to retail investors, although may also be sold to sophisticated investors.” These products should include investment and mutual funds, investments packaged as life insurance policies, retail structured securities and structured term deposits.

This incremental level of complexity, costs and risks stemming from the packaging therefore justifies a specific treatment, above and beyond provisions already present in the Markets in Financial Instruments directive (MiFID) and the Insurance Mediation directive (IMD).

4.1.2 An EU certification scheme of third-pillar products could be useful, if given the right objectives

The Commission is envisaging a certification scheme for PRIPs, which could notably apply to third-pillar products (point 13 of the White Paper, see above). The proposal is still vague, so it is difficult to form a definitive opinion until the content becomes clearer. However, we can assume it would at least consist in auditing funds to ensure they conform to the rules laid out in the initiative of the European Commission (2009).

The Commission develops two axes of proposals in this initiative. First, harmonise and standardise key investor disclosures, along the following principles: “be fair, clear and not misleading; guide investors, enabling them to make informed investment decisions (performance, risks, charges, etc.); be short and simple; be provided at the right time.”

Second, extend the scope of the Markets in Financial Instruments Directive (MiFID) to all PRIPs, especially according to the following rules: “investors should be fairly treated; products sold should correspond to the profile and needs of the investor; risks should be clearly communicated to the investor if they decide not to take advice; conflicts of interest must not adversely affect investors; investors should receive clear and effective disclosures of remuneration arrangements and all charges, commissions or fees paid; those assessing the suitability of products should fully understand all their features.”

This initiative is certainly a step in the right direction, and it needs to be enforced effectively and consistently. A certification scheme would probably go a long way in this direction. The principles will only be successfully applied, however, if the financial industry realises the interest of the measures and takes leadership on those matters. While no summary of the results of the consultation on the initiative has been published yet, the response to the main principles seems generally favourable. Certification is a reasonable way to tackle
4. Improving the Design Quality and Governance of Retirement Products is a Necessary Element of Pension Reform

product harmonisation issues. However, it does not do away with the great variety of pension systems. Common standards can be found on certain aspects like transparency, governance, ratings e.g. with respect to various risks, etc. Nonetheless, it is unreasonable to expect such a certification to circumvent the singularities of each country.

Finally, the question of the cost of such certification and who would bear it is also important to consider. The European Commission has published a cost-benefit analysis on the initiative, but it does not include certification at this stage. Most likely, costs would have to be borne by the industry, in which case there is a risk that they would be passed along to plan members as part of the already high administrative fees. If they both remain voluntary, it would therefore be preferable to distinguish clearly between the codes and the certification scheme to let funds adopt the former without necessarily opting for the latter.

4.2 Encouraging an Asset-Liability Management Approach to Pension Solutions Should be a Priority

4.2.1 Incentives for an improvement of the liability-driven investment strategies of DC and hybrid funds should be on the regulatory agenda

While the Commission’s proposals touch on governance, prudential regulation and mentions improving products, at this stage it remains a rather abstract and general purpose. In our view, the Commission should keep in mind that the constitution of any prudential framework needs to go hand-in-hand with the design of better retirement solutions. It is pointless and wasteful to apply prudential rules to poorly designed strategies. As we mentioned in sub-section 4.1.1, the current practices of pension funds are largely inadequate, as are the vast majority of third-pillar products. Failing major adjustments, the needs of retirees will not be met.

Far from advocating a one-size-fits-all mandatory solution that would be designed by the regulator, we consider it vital that the industry itself takes action. But to do so, it needs to be supported by a regulation that understands the specificity of retirement needs and that will incentivise, not penalise, investment solutions that match those needs.

For DC and hybrid funds more particularly, the main challenge is precisely to mitigate the fact that, by definition, they do not provide defined benefits. This means setting long-term objectives for the benefits and adopting the management technique that will maximise the probability of reaching them, while ensuring a maximum risk level in the short run. Most current DC retirement solutions are inadequate, as they do not make use of the state-of-the-art risk management concepts.

Putting together the pieces of an effective retirement strategy

Many current pension solutions still use asset allocation strategies which contradict the best practices set out in the theoretical literature. However, some better approaches have been proposed and thoroughly tested, notably in the form of asset-liability management. To ensure that those practices are used, the regulator has
Risk management can actually be viewed as a threefold concept, comprising risk diversification, risk hedging and risk insurance (see for instance Martellini and Milhau, 2011b). Risk diversification consists of investing in a variety of assets or asset classes so as to benefit from imperfect correlations between them. It can be done in a more or less sophisticated way; ideally, it should explicitly consider the structure of correlations and set a goal such as maximising the expected Sharpe ratio (i.e. the risk-adjusted performance).

Risk hedging comprises, complementarily, strategies aimed at immunising the portfolio against certain given risk factors. The nature of the risks to hedge may explicitly depend on the structure of the fund. For instance, when there is a sponsor, the pension fund might want to hedge against bad health of the sponsor that would coincide with poor fund performance.

Risk insurance, finally, is designed so that the investment objective is met with the greatest possible probability. It involves explicitly purchasing protection against bad states of the world.

To take advantage of these three risk management concepts, an effective retirement strategy should make use of the following complementary approaches: liability-driven investing (LDI), accounting for consumption objectives; life-cycle investing (LCI), accounting for the temporal horizon; and risk-controlled investing (RCI), accounting for the risk budgets. EDHEC-Risk Institute has developed models based on this framework and shown its appropriateness in a number of papers, most recently in Amenc et al. (2012). Their paper also provides the technical derivations that will not be shown in this document.

Pensions are long-term liabilities, which are in fact dynamic and depend on several time-varying factors. Pension solutions should therefore be designed to maximise the likelihood of meeting those liabilities at the horizon. This is the liability-driven investing (LDI) framework. In practice, the way to go is to have a safe fixed-income building block, or liability-hedging portfolio (LHP), with a duration matching that of the pension liabilities or the future consumption plan.

Furthermore, the horizon of the investor needs to be taken into account formally. As they approach retirement, plan members should be exposed to less risk. The strategy, notably the amount of risk-taking, should be dynamic depending on the current wealth and future expected performance, and should explicitly consider the investment horizon. This life-cycle investing (LCI) dimension is therefore crucial to meet the needs of plan members. In practice, it is necessary to allocate dynamically between the liability-hedging portfolio (LHP) and a performance-seeking portfolio (PSP), according to market conditions and the investment horizon.

This strategy needs to be implemented while managing risk levels: there need to be short-term constraints too, which take into account the existence of a sponsor when there is one. These constraints can either be self-imposed or defined by the regulator. This is the risk-controlled investing (RCI) approach. In practice, it means having...
4. Improving the Design Quality and Governance of Retirement Products is a Necessary Element of Pension Reform

The allocation between LHP and PSP also depend on the current funding ratio, i.e. the distance to a wealth floor on one side, and the wealth target on the other side.

*Current practices of DC solutions are largely inadequate*

Traditional retirement products invest in the wrong building blocks: in the best case, they allocate wealth between stocks and bonds, or even cash (with a negative real return). They need to embrace the lessons from modern financial theory and think in terms of a performance-seeking portfolio (PSP) versus a liability-hedging portfolio (LHP).

Overall, current pension fund practices are dramatically far from embracing those solutions. Sender (2010a), in a survey of pension funds, their advisers, regulators, and fund managers, found disappointing adoption rates for the risk management practices previously described, with some geographic variations.

Only 62% of funds surveyed had defined a LHP; only 46% and 41% were using some LDI and RCI techniques, respectively. Less than half claimed to model sponsor risk, to manage prudential risk, and only a third to manage accounting risk. Problems also plagued the construction of the PSP, with an average allocation of a third to equities and only an average 16% in less liquid assets such as private equity, hedge funds and infrastructure. Evaluation of the PSP was done less than once a year in 39% of cases, and a mere 12% used a risk-return efficiency measure to assess the performance of the PSP.

Geographically, it is useful to distinguish pension funds from the United Kingdom, with its mix of traditional defined-benefit (DB) and full defined-contribution (DC) schemes; Northern European countries, including the Netherlands, characterised by hybrid pension schemes and regulations inspired by Solvency II and economic capital models—often referred to as traffic-light systems in these countries; and Core European countries, such as Germany and Switzerland, with somewhat more traditional pension regulation. Their differences on key question are reported in the table below.

*For individual solutions, target-date funds still rely on dated practices*

While it is possible to design custom-made solutions for ultra-high-net-worth individuals, they are not accessible to most retail investors. Target-date funds (TDFs) are a popular way to package individual investment products for retail, but their current forms are plagued with problems. They seldom apply any dynamic investing and risk management, and when they do, they use a black box method – a rather undesirable feature for a product geared towards retail investors.

First and foremost, investment strategies should allow for revision of the asset allocation depending on market conditions and past performances. This is not the case of most current TDFs, which use a deterministic glide path between equity and cash. They often use heuristic rules of the form “100 minus the investor’s age” as the percentage to be allocated to the risky asset.

Those rules have many problems in practice. Most prominently, they do not take into account the stochastic evolution of the
4. Improving the Design Quality and Governance of Retirement Products is a Necessary Element of Pension Reform

<table>
<thead>
<tr>
<th>Question</th>
<th>UK</th>
<th>Core Europe</th>
<th>Northern Europe (incl. the Netherlands)</th>
<th>Total sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liabilities and LHP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of hybrid schemes</td>
<td>0%</td>
<td>23%</td>
<td>71%</td>
<td>35%</td>
</tr>
<tr>
<td>% having defined an LHP</td>
<td>75%</td>
<td>63%</td>
<td>53%</td>
<td>62%</td>
</tr>
<tr>
<td>% allocating more than 20% to inflation derivatives</td>
<td>40%</td>
<td>12%</td>
<td>13%</td>
<td>24%</td>
</tr>
<tr>
<td>% allocating more than 20% to inflation-linked assets</td>
<td>64%</td>
<td>30%</td>
<td>39%</td>
<td>32%</td>
</tr>
<tr>
<td>% using more than 20% swap contracts</td>
<td>60%</td>
<td>33%</td>
<td>54%</td>
<td>40%</td>
</tr>
<tr>
<td>LDI - static risk budgets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% that use LDI</td>
<td>71%</td>
<td>46%</td>
<td>52%</td>
<td>46%</td>
</tr>
<tr>
<td>% that use surplus optimisation</td>
<td>14%</td>
<td>25%</td>
<td>29%</td>
<td>21%</td>
</tr>
<tr>
<td>% that use economic capital</td>
<td>57%</td>
<td>21%</td>
<td>33%</td>
<td>30%</td>
</tr>
<tr>
<td>Performance-seeking portfolio</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average share of equities in PSP</td>
<td>34%</td>
<td>27%</td>
<td>40%</td>
<td>32%</td>
</tr>
<tr>
<td>Average cumulative share of private equity, hedge funds, and infrastructure in PSP “illiquid assets”</td>
<td>19%</td>
<td>15%</td>
<td>15%</td>
<td>16%</td>
</tr>
<tr>
<td>Risk insurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master RCI techniques</td>
<td>77%</td>
<td>61%</td>
<td>61%</td>
<td>56%</td>
</tr>
<tr>
<td>Currently use RCI techniques</td>
<td>54%</td>
<td>44%</td>
<td>40%</td>
<td>41%</td>
</tr>
<tr>
<td>Use RCI to manage prudential risks</td>
<td>17%</td>
<td>18%</td>
<td>24%</td>
<td>28%</td>
</tr>
<tr>
<td>Use economic capital to manage prudential risks</td>
<td>25%</td>
<td>56%</td>
<td>52%</td>
<td>56%</td>
</tr>
<tr>
<td>Holistic view?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model sponsor risk</td>
<td>62%</td>
<td>42%</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>Manage prudential risk</td>
<td>33%</td>
<td>55%</td>
<td>50%</td>
<td>49%</td>
</tr>
<tr>
<td>Manage accounting risk</td>
<td>17%</td>
<td>38%</td>
<td>33%</td>
<td>33%</td>
</tr>
<tr>
<td>Risk aggregation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use explicit risk factors to aggregate risk</td>
<td>0%</td>
<td>26%</td>
<td>33%</td>
<td>24%</td>
</tr>
<tr>
<td>Performance measurement, implementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSP evaluation frequency once per year or less</td>
<td>38%</td>
<td>44%</td>
<td>31%</td>
<td>39%</td>
</tr>
<tr>
<td>% of respondents having outperformance of a market index as a sole performance measure for the PSP</td>
<td>67%</td>
<td>33%</td>
<td>57%</td>
<td>48%</td>
</tr>
<tr>
<td>% having risk-return efficiency as a performance measure for the PSP</td>
<td>22%</td>
<td>12%</td>
<td>11%</td>
<td>12%</td>
</tr>
</tbody>
</table>

investment “opportunity set”, which notably entails the relative expensiveness of assets. The current state of the literature on pension investments recognises the importance of using a stochastic strategy (see for instance OECD, 2012).

Second, the decrease in risky asset allocation is matched by increased investment in risk-free assets. In any case, this refers to assets that do not have liability-hedging properties. In the worst case, it could mean cash, which yields a negative real return. Counterbalancing this, nonetheless, is a strong incentive problem: asset managers are reluctant to use low-fee money market funds. A manager with leeway in the allocation may instead choose more lucrative “dynamic money market funds” which are not without risks.
Compounding these problems is the lack of risk insurance solutions. Current TDFs do not account for any form of short-term risk budgets, so as to prevent, for instance, an excessive drawdown. This makes them very risky for a retirement investment – much more so, in fact, than pension funds that can always rely on sponsor guarantees.

Finally, there is little choice for an investor in terms of the level of risk undertaken by such a retirement product. For such individual solutions, at least, some component of risk aversion should be taken into account.

This critical assessment of TDFs is widely accepted in the literature. Bodie, Fullmer and Treussard (2010), for instance, summarise many of these problems, from the predetermined glide paths to the misinformation on the risks borne by the products. Viceira (2007) reviews how the design and implementation of TDFs could be improved based on the prescription of the theoretical literature.

Notably, the methodology of the LDI/LCI/RCI paradigm could be used to construct better TDFs. Martellini and Milhau (2010a, 2010b) derive the optimal strategy and detail what the specifics of the implementation could be. In particular, as those products need to be somewhat standardised, it would be necessary to partition the investors according to some criteria, such as maturity range and risk aversion, which controls the risk-taking behaviour. The paper shows that such a partitioning, if chosen wisely, has little impact on the performance of the solution.

For retail clients most especially, there is a need for transparency rather than a black box approach. While not necessarily imposing them, the European regulator could play a major role in promoting the good practices. In particular, some open, transparent solutions could be favoured for default options. Using dedicated benchmarks following the LDI/LCI/RCI paradigm, as proposed in Amenc et al. (2012), would be one way to keep costs to a minimum, or at least to have a point of reference.

Finally, pay-out options need to be included in the scope of any such design: a lump sum paid at retirement probably does not fit most retirees’ needs, while a cost-effective annuitisation might. The annuity market is in fact struggling to take off, largely due to the insufficiencies of the longevity market. While a competitive, standardised longevity market is still far on the horizon, some large longevity swap deals are increasingly happening over-the-counter (see for instance Williams, 2012).

The OECD (2012a) makes a number of interesting suggestions on the annuity and longevity fronts. First, promoting cost-efficient competition in the annuity market is a worthy goal, and we agree with the OECD suggestion that insurers could be major players on this market.

Figure 14: Mechanism of longevity swaps
Source: OECD (2012a)
The multiplicity of providers should be encouraged so as to increase the liquidity of the market. Second, on the other side of the market, demand for annuities is bound to increase and information and transparency on available products and their costs is paramount. Third, the longevity market could benefit from some regulatory push, as well as issuing either longevity-linked bonds or more very long-term bonds to facilitate hedging in this market.

4.2.2 DB funds need to move towards a better management of risks and explicitly integrate the role of the sponsor

For defined-benefit funds, the increasingly stricter regulation in the context of a global market crisis has very much of a scissors effect. On the one hand, so as to climb back from the loss they have suffered, funds have stronger incentives to invest in riskier asset classes, most notably equity and other assets poorly correlated with liabilities. On the other hand, regulation creates strong incentives against this behaviour, by imposing costly short-term constraint, such as funding ratios.

The main question, in effect, is how to take advantage of these regulatory evolutions to improve liability-driven investing, notably by accounting for short-term constraints and by giving an explicit role for the sponsor in the investment strategies.

A better management of risks by taking a short-term constraint into account

While the general consensus is that some form of regulatory constraint is needed, there has nonetheless been a fierce debate on risk management incentives for pension funds, which has notably been analysed by Martellini and Milhau (2009). Proponents of stricter regulation of pension funds argue that explicit regulatory incentives are the only wait to get proper risk management put in place, while opponents claim any short-term funding constraint would make pension financing too costly.

The formal study done by Martellini and Milhau (2009) found that the welfare cost associated with such a constraint was not prohibitive, but it requires implementing dynamic risk management strategies that are optimal given the constraints. A logical choice, to this end, is to use the asset-liability management framework previously described.

In the context of the debate about maintaining a "level playing field" with Solvency II, which we discussed in detail before, it is clear that simplistic short-term constraints will not be beneficial on their own. It appears much more important that funds actually implement and use asset-liability management models, and regularly assess their adequacy and resistance to stress.

It is not clear today that Solvency II, together with an accounting framework penalising dynamic allocation strategies, is conducive to good practices either in asset management or asset-liability management (see Amenc et al., 2006). There is a significant risk that ultimately, a majority of DB funds would have to conform to a standard formula of internal models that emphasise static diversification, which would neither allow for effective risk management nor would it take into account the specificities of long-term investors in a lifecycle perspective.
Towards an integrated ALM solution that recognises the role of the sponsor

For DB funds, it is of prime importance to also recognise the explicit role of the sponsor. In most cases, the presence of a sponsor to back a pension plan ensures that payments can be covered even though a plan did not reach its full funding target. However, there might be problems.

Adapting this paradigm to pension funds with sponsors is not completely trivial. Martellini and Milhau (2011a) propose a model to address the joint quantitative analysis of capital structure choices, pension fund allocation decisions and their impact on rational pricing of liability streams. Pensions are then modelled as a defaultable claim issued to workers and pensioners by the sponsor, and thus form part of the capital structure. In a dynamic setting which can include short-term constraints, regulatory or otherwise, they find that RCI strategies allow the fund to capture more of the risk premium, which has a positive effect on equity value, while protecting pensioners.

A modern ALM strategy using the RCI principles described before in the context of a dynamic LDI approach can account for both short-term constraints and the presence of the sponsor. The recommendations emerging from such an analysis of investment and funding decisions strongly favour a move towards hybrid pension plans (see sub-section 1.2.3). They could help resolve the current conflict of interest between shareholders and plan members: in the context of choosing an investment strategy, risk taking is detrimental to pensioners if they do not have access to the potential surplus of the fund, while shareholders seek the upside to reduce the contributions they will potentially have to make to secure pension payments. Granting plan members part of the upside while still allowing a reduction of the contribution burden would be beneficial to both sides, in the context of a dynamic liability-driven investment strategy.

In the discussion surrounding the imposition of Solvency II rules on pension funds, opponents have notably argued that the presence of a sponsor makes pension funds a regulatory category in its own right. Martellini, Milhau and Tarelli (2012) tackle the specific problems stemming from the presence of sponsor risks. They examine forms of dynamic ALM that go beyond the simplest strategies, and consider constraints similar to those the regulator (or even the fund itself) could be expected to impose. They explicitly take into account the financial strength of the company, which could create sponsor risk if underfunding becomes too large. They find that dynamic risk-controlled strategies are effective in aligning incentives of shareholders and pensioners. The former, indeed, may favour more risk-taking than the latter, who do not usually benefit from surpluses. Giving up part of the upside of the strategy to hedge against part of the downside is beneficial to both.

4.2.3 Pension solutions should take into account the long-term objectives and short-term constraints within the context of a lifecycle approach

Currently, many pension solutions are using the wrong asset allocation strategies applied to the wrong building blocks. Often, they do not provide any form of risk management, or leave it as an afterthought. However, some
better approaches have been proposed and thoroughly tested, notably in the form of asset-liability management. To ensure those good practices are used, the regulator has a role in establishing the right incentives.

A modern asset-liability management framework

A modern framework for thinking about pensions is asset-liability management. It relies on three pillars: liability-driven investing (LDI), accounting for consumption objectives; life-cycle investing (LCI), accounting for the temporal horizon; and risk-controlled investing (RCI), accounting for the risk budgets. EDHEC-Risk Institute has developed models based on this framework and shown its appropriateness in a number of papers, most recently in Amenc et al. (2012). Their paper also provides the technical derivations that will not be shown in this document.

Pensions are long-term liabilities, which are in fact dynamic and depend on several time-varying factors. Pension solutions should therefore be designed in order to maximise the likelihood of meeting those liabilities at the horizon. This is the liability-driven investing (LDI) framework.

Furthermore, the horizon of the investor needs to be taken into account formally. As they approach retirement, plan members should be exposed to less risk. The strategy, notably the amount of risk-taking, should be dynamic depending on the current wealth and future expected performance, and should explicitly consider the investment horizon. This life-cycle investing (LCI) dimension is therefore crucial to meet the needs of plan members.

This strategy needs to be implemented while managing risk levels: there need to be short-term constraints too, which take into account the existence of a sponsor when there is one. These constraints can either be self-imposed or defined by the regulator. This is the risk-controlled investing (RCI) approach.

Adopting a risk management strategy is paramount, whether for individual retirement products or for collective pension vehicles. In both cases, however, the financial industry has been slow on the uptake.

The methodology of the LDI/LCI/RCI paradigm could be used to construct better TDFs, accessible to retail investors and nonetheless including risk management in a transparent fashion.

The right regulatory incentives for risk management

Modern and transparent risk management solutions, as described by Amenc et al. (2012), are within reach of pension funds and TDF providers. What is the best way, however, for the regulator to make them more widely adopted? On both fronts, the right incentives need to be found.

Martellini and Milhau (2009) analysed the debate on risk management incentives for pension funds. Proponents of a stricter regulation of pension funds argue that explicit regulatory incentives are the only hindrance to getting proper risk management in place, while opponents claim any short-term funding constraint would make pension financing too costly. The formal study found that the welfare cost associated with such a constraint was
not prohibitive, but it requires implementing dynamic risk management strategies that are optimal given the constraints. A logical choice, to this end, is to use the asset-liability management framework previously described.

In the context of the debate about maintaining a “level playing field” with Solvency II, which we discussed in detail in section 3.1, it is clear that simplistic short-term constraints will not be beneficial on their own. It appears much more important that funds actually implement and use asset-liability management models, and regularly assess their adequacy and resistance to stress.

For retail clients most especially, there is a need for transparency rather than a black box approach. While not necessarily imposing them, the European regulator could play a major role in promoting the good practices. In particular, some open, transparent solutions could be favoured for default options. Using dedicated benchmarks following the LDI/LCI/RCI paradigm, as proposed in Amenc et al. (2012), would be one way to keep costs to a minimum, or at least to have a point of reference.
Conclusion
While acting in accordance with the subsidiarity principle, the European Union can do more than simply advocate national adjustments of pension parameters and structural reforms. Overall, the proposals of the Commission in this respect are legitimate, but implementation will be the touchstone.

Our three key messages are the following. First, the current pension debate should be used by the Commission to foster increased coordination in pension reform. When discussing the sustainability of public finance, one medium-term objective could be to recognise the account unfunded implicit pension commitments. Second, the prudential framework for pensions is bound to have far-reaching consequences, and it needs to respect the particularities of pension providers, which are not those of insurers. Third, new regulation should encourage the generalisation of asset-liability management practices, both for pension funds and individual retirement products, using the best available knowledge and techniques and evaluating micro as well as macroeconomic impacts. A move towards hybrid pensions could, with the objective in mind, provide a more adequate conceptual framework for European countries to converge towards.

The European Commission Needs to Ease the Coordination of National Pension Reform

The current public debates surrounding pensions on the one hand, and budgetary coordination on the other, would greatly benefit from being held conjunctly. In all logic, unfunded first-pillar public pensions are largely structural problems due to slow-moving demographics, with a large impact on government-sponsored DB schemes and social security pension schemes. Unfunded and underfunded second-pillar pensions also have the potential to weigh on future deficits, as countries may need to eventually bail out some pension plans.

The Commission should therefore take advantage of this opportunity and, in the short run, help with citizens’ information and push for national reforms. In the longer run, taking into account unfunded implicit pension commitments in the Stability Treaty should in our view be envisaged, as it might be the only way to foster coordinated reform across countries.

A Specific Prudential Framework for Pensions

While a prudential framework is certainly needed, it cannot ignore the specific aspects of retirement provisions, in particular when there is a sponsor to provide guarantees. An insurance company could theoretically go bankrupt at any instant and therefore needs short-term prudential rules such as the solvency capital requirement. Pension funds, on the other hand, are truly long-term investors with long-term liabilities.

If a homogenised framework for pension supervision in Europe is needed, to model it after Solvency II is a mistake. While insurance providers may want to position themselves in a competition with pension providers, it is a misunderstanding of the specificities of pension provision.
Incentives for Asset-Liability Management

In our view, the Commission should keep in mind that the constitution of any prudential framework needs to go hand-in-hand with the design of better retirement solutions. It is pointless and wasteful to apply prudential rules to poorly designed strategies. Current pension fund practices are still largely inadequate, as are the vast majority of third-pillar products. Failing major adjustments, the needs of retirees will not be met.

Far from advocating a one-size-fits-all mandatory solution that would be designed by the regulator, we consider it essential that the industry itself takes action. But to do so, it needs to be supported by a regulation that understands the specificity of retirement needs and that will incentivise, not penalise, investment solutions that match those needs.

Currently, many pension solutions are using the wrong asset allocation strategies applied to the wrong building blocks. Often enough, they do not provide any form of risk management, or leave it as an afterthought. However, some better approaches have been proposed and thoroughly tested, notably in the form of asset-liability management. To ensure those good practices are used, the regulator has a role setting up the right incentives.

In this area, it is possible to increase pensioners’ security while also benefiting equity holders by moving towards hybrid solutions, notably through the development of subtler surplus sharing rules. If pensioners are given access to part of the plan surplus, they will be more willing to accept higher level of risk-taking, which is required to reduce the contribution burden of equity holders.

In the context of the debate about maintaining a “level playing field” with Solvency II it is clear that simplistic short-term constraints will not be beneficial on their own. Welfare cost associated with such a constraint need not be prohibitive, but it requires implementing dynamic risk management strategies that are optimal given the constraint. With or without these regulatory constraints, it appears paramount that funds actually implement and use asset-liability management models, and regularly assess their adequacy and resistance to stress.

Assessing the Micro as well as Macroeconomic Impacts Before Acting

Before proposing new frameworks for pensions with such deep-reaching consequences, it seems vital to assess its impact. A translation of a Solvency II-type regulation to the pension fund industry would require a precise evaluation of the microeconomic consequences on the funds themselves. The results of the Quantitative Impact Study launched by EIOPA (2012b) should provide some elements in the context of the revision of the IORP directive, but it seems to mimic the Solvency II approach rather than adapting to the uniqueness of this market.

At the same time, it is essential to also investigate the macroeconomic (so-called “general equilibrium”) effects of any reform. Pension funds are major players in European
Conclusion

Economies and are bound to become increasingly so, and imposing rules borrowed from another prudential framework should not be taken lightly. Studying, both quantitatively and qualitatively, the overall impact of introducing new rules should be the touchstone of any new regulatory initiative.

A coherent state-of-the-art framework for risk management practices is currently emerging. Rather than imposing an inadequate framework that will likely hamper the development of appropriate pension solutions, regulation should design and evaluate the best incentives for a much wider adoption of these asset-liability management techniques. After all, they are the only way to conciliate the adequacy, safety and sustainability that the Commission is aiming for.
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About EDHEC-Risk Institute
About EDHEC-Risk Institute

The Choice of Asset Allocation and Risk Management

EDHEC-Risk structures all of its research work around asset allocation and risk management. This issue corresponds to a genuine expectation from the market. On the one hand, the prevailing stock market situation in recent years has shown the limitations of diversification alone as a risk management technique and the usefulness of approaches based on dynamic portfolio allocation. On the other, the appearance of new asset classes (hedge funds, private equity, real assets), with risk profiles that are very different from those of the traditional investment universe, constitutes a new opportunity and challenge for the implementation of allocation in an asset management or asset-liability management context.

This strategic choice is applied to all of the Institute’s research programmes, whether they involve proposing new methods of strategic allocation, which integrate the alternative class; taking extreme risks into account in portfolio construction; studying the usefulness of derivatives in implementing asset-liability management approaches; or orienting the concept of dynamic “core-satellite” investment management in the framework of absolute return or target-date funds.

Academic Excellence and Industry Relevance

In an attempt to ensure that the research it carries out is truly applicable, EDHEC has implemented a dual validation system for the work of EDHEC-Risk. All research work must be part of a research programme, the relevance and goals of which have been validated from both an academic and a business viewpoint by the Institute’s advisory board. This board is made up of internationally recognised researchers, the Institute’s business partners, and representatives of major international institutional investors. Management of the research programmes respects a rigorous validation process, which guarantees the scientific quality and the operational usefulness of the programmes.

Six research programmes have been conducted by the centre to date:

- Asset allocation and alternative diversification
- Style and performance analysis
- Indices and benchmarking
- Operational risks and performance
- Asset allocation and derivative instruments
- ALM and asset management

These programmes receive the support of a large number of financial companies. The results of the research programmes are disseminated through the EDHEC-Risk locations in Singapore, which was established at the invitation of the Monetary Authority of Singapore (MAS), the City of London in the United Kingdom, and Nice, France. In addition, it has a research team located in the United States.

EDHEC-Risk has developed a close partnership with a small number of sponsors within the framework of research chairs or major research projects:

- Core-Satellite and ETF Investment,
  *in partnership with Amundi ETF*
- Regulation and Institutional Investment,
  *in partnership with AXA Investment Managers*
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- Asset-Liability Management and Institutional Investment Management, in partnership with BNP Paribas Investment Partners
- Risk and Regulation in the European Fund Management Industry, in partnership with CACEIS
- Exploring the Commodity Futures Risk Premium: Implications for Asset Allocation and Regulation, in partnership with CME Group
- Asset-Liability Management Techniques for Sovereign Wealth Fund Management, in partnership with Deutsche Bank
- The Benefits of Volatility Derivatives in Equity Portfolio Management, in partnership with Eurex
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- Advanced Modelling for Alternative Investments, in partnership with Newedge Prime Brokerage
- Advanced Investment Solutions for Liability Hedging for Inflation Risk, in partnership with Ontario Teachers’ Pension Plan
- The Case for Inflation-Linked Corporate Bonds: Issuers’ and Investors’ Perspectives, in partnership with Rothschild & Cie
- Solvency II Benchmarks, in partnership with Russell Investments
- Structured Equity Investment Strategies for Long-Term Asian Investors, in partnership with Société Générale Corporate & Investment Banking

The philosophy of the Institute is to validate its work by publication in international academic journals, as well as to make it available to the sector through its position papers, published studies, and conferences.

Each year, EDHEC-Risk organises two conferences for professionals in order to present the results of its research, one in London (EDHEC-Risk Days – Europe) and one in Singapore (EDHEC-Risk Days – Asia), attracting more than 2,000 professional delegates.

EDHEC also provides professionals with access to its website, www.edhec-risk.com, which is entirely devoted to international asset management research. The website, which has more than 50,000 regular visitors, is aimed at professionals who wish to benefit from EDHEC’s analysis and expertise in the area of applied portfolio management research. Its monthly newsletter is distributed to more than 1,250,000 readers.

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The EDHEC-Risk Institute PhD in Finance
The EDHEC-Risk Institute PhD in Finance is designed for professionals who aspire to higher intellectual levels and aim to redefine the investment banking and asset management industries. It is offered in two tracks: a residential track for high-potential graduate students, who hold part-time positions at EDHEC, and an executive track for practitioners who keep their full-time jobs. Drawing its faculty from the world’s best universities and enjoying the support of the research centre with the greatest impact on the financial industry, the EDHEC-Risk Institute PhD in Finance creates an extraordinary platform for professional development and industry innovation.

Research for Business
The Institute’s activities have also given rise to executive education and research service offshoots. EDHEC-Risk’s executive education programmes help investment professionals to upgrade their skills with advanced risk and asset management training across traditional and alternative classes. In partnership with CFA Institute, it has developed advanced seminars based on its research which are available to CFA charterholders and have been taking place since 2008 in New York, Singapore and London.

While EDHEC-Risk makes important public contributions to the advancement of applied financial research and the improvement of industry practices, the insights drawn from EDHEC-Risk’s “Indices & Benchmarking”, “ALM and Asset Management” and “Derivatives and Asset Management” research programmes over the past several years have led to a series of indices and benchmarks that provide more efficient or more academic-based solutions to investors’ needs than current offers available on the market.
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