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Policy Analysis

Good Pensions Embrace and Share Risks

Private Pensions Stimulate EU Capital Market



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Private Pensions for Europe

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Summary

Private pensions can enhance international and intergenerational risk-sharing and create a deeper European capital market, which allows for better diversification of country-specific risks and facilitates economic growth. Private funding of pensions creates a more integrated European capital market and internal market for pension services. Pension funds should embrace risks in order to be able to build good pensions at reasonable costs. EU regulation of pension funds should therefore not focus on requirements to guarantee safe pensions, but rather should stimulate funds to share risks efficiently among participants and mandate funds to communicate risks transparently to individuals. Mandatory participation in stand-alone pension funds can provide the necessary commitment for better intergenerational risk-sharing. These stand-alone funds can play an important role also as trusted partners for financially illiterate consumers. The scale and type of collectives vary with the specific institutional setting of each European country. To facilitate tailor-made solutions for market imperfections and behavioural issues, the EU should allow for mandatory participation and other constraints on free competition in the market for pensions.

Samenvatting

Private pensioenen kunnen bijdragen aan meer internationale en intergenerationele risicodeling en een diepere Europese kapitaalmarkt met meer mogelijkheden voor diversificatie van risico's. Dit alles komt de economische groei ten goede. Kapitaaldekking van pensioenen resulteert in een meer geïntegreerde Europese kapitaalmarkt en een grotere interne markt voor pensioendiensten. Pensioenfondsen dienen macro-economische risico's te omarmen om zo een goed pensioen te kunnen aanbieden tegen redelijke kosten. EU-regulering moet fondsen daarom niet dwingen een gegarandeerd pensioen te leveren maar fondsen stimuleren om de risico's efficiënt te delen tussen de deelnemers en transparant te communiceren over de daaruit volgende risico's voor individuele deelnemers. Verplichte deelname aan pensioenfondsen die geen beroep kunnen doen op bedrijven als risicodragers, kan bijdragen aan betere risicodeling tussen generaties. Deze collectieve pensioenfondsen kunnen ook een belangrijke rol spelen als een betrouwbare partner van financieel analfabete consumenten. De aard en omvang van de optimale collectiviteiten hangen af van de specifieke institutionele situatie in elk EU-land. Vanwege de institutionele verscheidenheid bij het aanpakken van allerlei imperfecties op de markt voor pensioenen moet de EU terughoudend zijn met het afdwingen van vrije keuze van individuen voor een aanbieder van pensioendiensten.

1 Introduction

Pension systems in Europe are in deep crisis as a result of the toxic mixture of aging, the financial crisis and poorly functioning labour markets. Both public pay-as-you-go schemes and funded private pensions have been affected. Questions have been raised concerning the right balance between public and private pensions. José Manuel Barroso, president of the European Commission, has emphasized the importance of the European approach to pension systems: “The crisis has demonstrated the interdependence of the various pension pillars within each Member State and the importance of common EU approaches on solvency and social adequacy.” Last year, the commission issued a Green Paper launching a Europe-wide public debate on how to ensure adequate, sustainable and safe pensions and how the EU can best support the national efforts (European Commission, 2010).

This paper contributes to the European policy debate on pensions and financial integration by exploring how private pension funds can implement optimal risk management on behalf of their participants and contribute to stable financial markets buttressing the growth potential of the European economy. We argue that greater emphasis on funded private pensions can help not only to keep up old-age incomes when public pensions are under pressure, but also to accommodate and allocate risks in a more efficient manner across citizens and nations. This latter aspect is underrated in the policy debate. Pension systems should diversify risks, and allow young and old generations to redistribute macroeconomic risks according to their ability to bear risks. Each generation, including the elderly, should share in macroeconomic risk. Optimal international and intergenerational risk-sharing yields considerable welfare gains: by reducing the costs of risk, it helps to promote economic growth. Indeed, risk-taking is intrinsic to economic growth; it should therefore not be whisked away but rather shared in an efficient manner. Pension systems obviously play a role here, as pension saving constitutes the major source for financing investment in European economies.

A larger role for private pensions helps also to diversify risks within the pension system. Public pensions seem now less safe than most citizens expected. Public pay-as-you-go pension schemes have proven vulnerable to shocks in government finances due to economic setbacks, poorly functioning economies and political foibles. More private funding of pensions seems a natural option to achieve a better balance and more diversification in European pension systems. Admittedly, the financial turmoil has affected also private funded pensions. Traditional corporate defined-benefit (DB) plans have proven unsustainable, as firms with aging workforces are no longer able to bear the risks that pension liabilities pose to their balance sheet. DB plans are rapidly being replaced by defined-contribution (DC) plans in which risks are shifted from employers to individual households. The worldwide share of DC plans has increased from 32% in 1999, to 42% of total pension assets in 2009 (Towers Watson, 2010). After 2009, this increase was further spurred on by the credit crisis and the introduction of new accounting rules (International Financial Reporting Standards, IFRS). Unfortunately, the DC plans currently offered by the financial industry are poorly designed, tend to be costly, and often lead to poor individual investment decisions. Hence, institutional and financial innovation is called for.

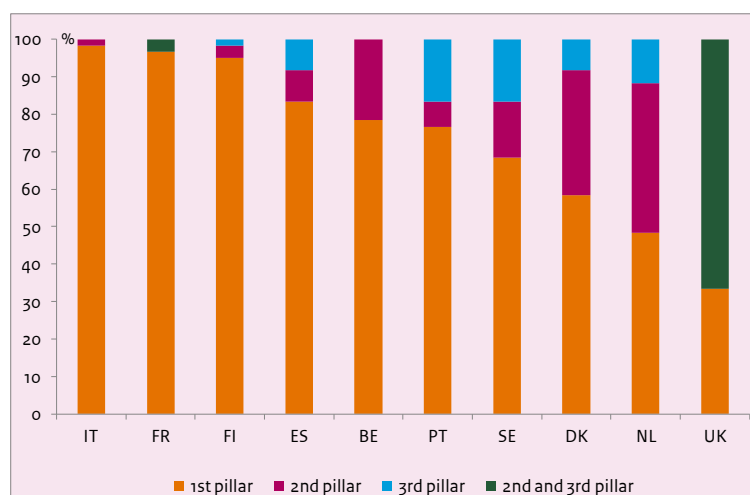
From the individual’s perspective, well-designed private pension plans can help to optimize saving and risk-taking over the life cycle. Mandatory participation may be needed to provide commitment, address behavioural issues, and avoid adverse selection in pension markets. Individual accounts, which register each member’s position in terms of wealth and risks, may serve to make the system — unlike traditional DB

schemes — transparent. Furthermore, organizing these plans on a sufficient scale yields substantial efficiency gains by saving on transaction costs and concentrating expertise. In this connection, collective stand-alone pension funds (*i.e.* mutual funds that do not depend on firms as risk-bearing sponsors) can play an important role as intermediary between financially illiterate individuals and the for-profit financial industry. In this way, private pension plans based on capital funding offer an appealing European model as an alternative to individual DC plans and corporate DB plans, and as a complement of public pay-as-you-go systems aimed at poverty alleviation. A European model is also sought by the Green Paper (EC, 2010), which suggests that “collective risk sharing through hybrid schemescould change the current trend to individualized DC schemes.”

2 Private pensions for better diversification

Europe features a large diversity of pension systems (Figure 1). Some countries rely almost entirely on public pensions (*i.e.* the first pillar)¹. Other countries feature substantial private pensions. Some of these private systems are collectively organized (second pillar), while others are individual plans distributed through retail markets (third pillar).

Figure 1 Large variety in pensions systems in Europe
(shares of the pension pillars in the benefits paid for a selection of countries)



Source: CEA (2007).

Pensions in the larger continental European countries (including France, Germany, Italy and Spain) are almost exclusively based on public pay-as-you-go schemes. This makes retirees especially vulnerable to domestic shocks affecting the public finances in these countries. The current debt crises in the southern EU countries and Ireland illustrate the vulnerability of the public finances and hence public retirement benefits

¹ The World Bank (2005) distinguishes a zero pillar in addition to the first pillar. The zero pillar aims at poverty alleviation by providing a minimum pension. The first pillar provides an earnings-related pension, so that the middle class can maintain its standard of living in retirement. Figure 1 includes the zero pillar in the first pillar.

to shocks affecting the domestic economy. This vulnerability is likely to increase in the next decades. The reason is that the burden of pensions paid to the elderly increases relative to labour income of the younger generations so that taxes and pension contributions can less easily absorb unexpected shocks in public liabilities. In fact, the implicit public debt associated with the future costs of aging already exceeds explicit public debt in many countries (Table 1). This implicit public debt measures the present value of future deficits arising from population aging due to the rising costs of pensions, health care and other age-related government expenditures. The size of these liabilities depends on projected demographic developments and the generosity of the public pension- and care systems. The growing burden of population aging thus not only affects the sustainability of pay-as-you-go systems directly, but it also makes the system more vulnerable to shocks in the future. Both effects call for a greater role of private pensions: First, policies to restore sustainability of public finances will inevitably put pressure on current pay-as-you-go arrangements (involving retirement provision, health care and long-term care), so that more private pension saving will be necessary to maintain one's standard of living after retirement. Indeed, the implicit debt in the extensive pay-as-you-go arrangements is an important reason behind the European debt crisis— as the associated liabilities endanger the sustainability of public finance in several EU countries. Second, public pensions become more risky. Hence, also diversification of risks calls for a larger role of private pensions.

Table 2 Implicit debt related to aging is often larger than official public debt (selected EU countries)

	Official public debt (% GDP)	Implicit public debt related to the future costs of aging (% GDP)
Netherlands	63	385
Germany	82	138
France	83	253
Italy	119	115
United Kingdom	80	277
Spain	60	438
Sweden	40	123
Belgium	97	369
Source: Own calculations based on European Commission (2009).		

One may view pay-as-you-go pension schemes as an — implicit — claim of citizens on future provisions by their national government. This leaves citizens heavily exposed to the credit risk of their own governments. With funded private pensions, credit risks can be diversified by holding explicit claims (*i.e.* bonds) on different governments. Just as the European banking system becomes more robust if banks diversify their holdings of public debt over various countries, so do European pension systems become safer if pension promises are backed by financial instruments of various countries rather than by a single country only.

By organizing private pensions in stand-alone (mutual) pension funds, one avoids the problem of traditional DB pensions, which exposed participants to the specific risks of their 'own' firm. Stand-alone pension funds

back their obligations with financial assets and do not rely on sponsoring companies to guarantee pensions. Hence, participants are not exposed to credit risk of the firm they work for.²

By stimulating private pension savings, governments help create a deeper European capital market with more opportunities for trading and sharing risk. This facilitates a more efficient allocation of capital within Europe, thereby stimulating economic growth. Indeed, more efficient international risk-sharing helps to shift out the risk–growth frontier so that a given level of risk for investors is compatible with more innovation and higher growth rates.

Moreover, greater emphasis on private pensions enhances the internal market for pension services. Each country could set its own pension system on the basis of its own preferences and specific circumstances. A ‘one size fits all’ pension system is not on the horizon. The EU, however, can help ensure that the internal market for pension products and services can develop further by removing the remaining implicit and explicit trade barriers and by strengthening — through open coordination — the second pillar in EU pension systems. In this way, each country has access to a richer set of building blocks with which to build more retirement security for its citizens. Moreover, a larger internal market offers greater opportunities for specialization. Indeed, several pension services (such as administration, communication, distribution, various advisory services, investment, custodian services and insurance) benefit from economies of scale and scope.

The transition to more private funding can be seen as a natural reaction to the current EU debt crisis. Indeed, increased private saving is necessary to keep up pensions if public pensions are being cut under pressure of the debt crisis and aging costs. Such additional private savings may not come about by itself, however, due to individual failures (myopia), institutional constraints and means-tested old-age benefits, which discourage retirement saving. Government action will therefore be needed. Stimulating private pension savings by subsidies and other fiscal measures tends to be ineffective in practice;³ more powerful measures may be required — involving mandated or semi-mandated⁴ participation in pension funds.

Private saving in pension funds may also contribute to the stability of markets for government debt. Diverting risks from banks to pension funds reduces systematic risks in the financial system when — under adequate regulation — pension funds are better able to deal with international macroeconomic risks than banks. In general, pension funds adopt investment strategies with a long time horizon, and participants cannot withdraw their funds on short notice, which implies a more solid funding basis.⁵

Yet, the transition should be gradual in order to avoid undesirable intergenerational effects, and to give all generations the opportunity to anticipate changes in future pensions. Faster transition is possible, in theory, but would require governments to issue additional government debt in order to relieve the burden for current generations (who have insufficient time to supplement their retirement income with private saving). In a way, by reducing pension liabilities and at the same time issuing additional debt, governments replace

² A public insurance scheme can protect members of corporate DB schemes against the credit risk of the sponsoring companies. Public insurance, however, typically results in moral hazard in investment policy. In particular, companies may want their corporate pension schemes to engage in risky investments because they benefit from the upside of these risky investments while the insurance scheme bears the costs of the downside. To avoid this, insurance schemes require strict regulations.

³ Experiences with e.g. 401K plans in the US, and Riester pensions in Germany, are not encouraging; see also OECD (2004).

⁴ Smart design of automatic enrolment and other methods of framing may offer an alternative for direct compulsion.

⁵ Better diversification of government credit risks may also come at a cost, however, in the form of moral hazard. Indeed, incentives to live up to promises on government debt may be eroded if the domestic costs of default diminish because foreigners own more of the public debt.

part of implicit pay-as-you-go debt by explicit public debt. Obviously, although such a policy would, in theory, speed up the transition, the EU current debt crisis complicates such a rapid transition. It is unthinkable that governments issue explicit tradable debt with a magnitude of 100 to 300 percent of GDP to ‘privatize’ their aging liabilities (see Table 2). Commitment problems with regard to sovereign debt preclude governments to take on such large explicit debts on their balance sheet. Therefore, the transition to more private funding will probably require substantial time, as well as great transparency and commitment.

3 How to share risks optimally among generations?

Macroeconomic risks cannot be diversified away and must be borne by someone. Efficient risk-sharing implies that shocks should be spread out over as many investors as possible, including the elderly generations who own most financial capital. A good pension is therefore a risky pension. Risk-taking is optimal for the economy as a whole because risk-taking contributes to innovation and economic growth. Risk-taking is optimal also for individuals because it yields higher expected returns. Indeed, rather than guaranteeing pensions by hedging all risks on financial markets, pension funds should exploit risk premia and share risks as broadly as possible among their participants.

Pension funds can implement optimal risk management on behalf of their participants. Efficient risk-sharing implies that the fund should spread out shocks over as many participants as possible. Moreover, shocks should be smoothed over the remaining life cycle of each participant: rather than adjusting consumption a lot only today, one should modify planned consumption over the rest of the life cycle. The famous Merton–Samuelson model provides a useful benchmark for such optimal life-cycle risk management (Merton, 1969; Samuelson, 1969). This model implies that any shock in wealth should optimally lead to an adjustment in consumption of all individuals by the same percentage during the rest of their lives. Thus, for example, if the credit crisis leads to a permanent loss in income of 3 percent, it is optimal to reduce consumption of both young and old (and future) generations permanently by this same percentage of 3 percent.⁶ This provides a useful benchmark for maximal risk-sharing between generations. This seminal insight can be translated in the requirement that each individual’s portfolio optimally should feature the same exposure to each type of risk, irrespective of their age. Obviously, this result hinges on strong assumptions (*e.g.* uniform risk aversion), and should therefore be considered as a stylized benchmark only. But it makes two principles clear: (1) shocks in wealth should be absorbed over the full life cycle, and (2) all individuals should share in aggregate risks—also the elderly.

A simple way to interpret the Samuelson-Merton result on uniform portfolios is to envisage that each individual should have similar stakes in (the risks of) human capital and financial capital. Human capital measures the present value of all labour income over the entire life cycle. In the aggregate, human capital refers to all future wages, whereas financial capital refers to all future profits. Human capital and financial capital together determine total wealth available for consumption to all individuals. If all people hold similar shares of human and financial capital in their portfolio, they would face the same risks as well. Obviously, this requires exchange of risks between generations— as without trade, the young would possess mainly

⁶ Although the elderly should share in the risks, several reasons can be cited for allocating less risks to them than to others: for example, because it may be harder to adjust consumption habits in the short run (‘habit formation’).

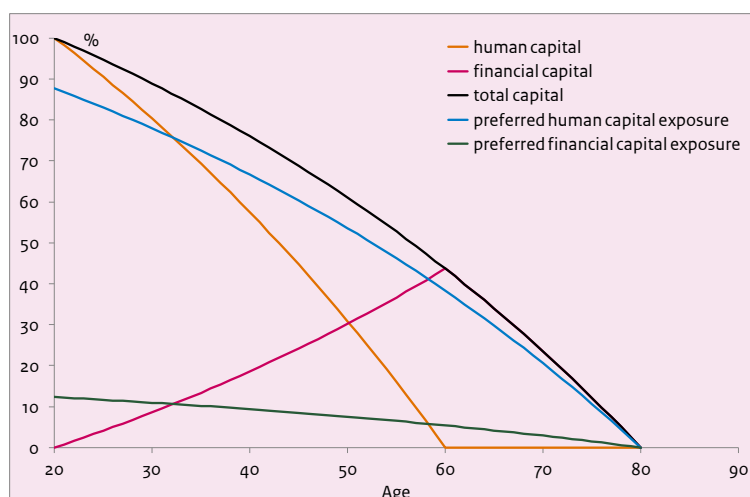
human capital, and the elderly mainly financial capital. Bovenberg and Van Ewijk (2011) estimate that 85 percent of total capital consists of human capital, while 15 percent represents financial capital.⁷ This is in line with the shares of labour income and capital income (net of depreciation) in GDP. Perfect risk-sharing thus implies that the young—who have not accumulated any financial savings yet—should exchange part of their human capital for financial capital up to 15 percent of their portfolio, while pensioners ideally hold 85 percent of their portfolio in claims on human capital and only 15 percent in financial risks.

Figure 2 illustrates the expected evolution of wealth and its components over the life cycle.⁸ We consider an individual who works for 40 years up to the age of 60, and then lives in retirement for 20 years. The young (aged 20) start with a given human capital equal to 100; this is the present value of lifetime earnings. During the life cycle human capital wears out, and becomes zero at the age of 60 (yellow line in the graph). In the mean time, financial capital (red line) is accumulated to maintain consumption after retirement. With perfect consumption smoothing, total wealth should decrease in a steady manner (black line). In general equilibrium, the optimal allocation of the portfolio into human and financial capital matches with the aggregate shares of human capital and financial capital, viz. 85 percent and 15 percent, respectively. These preferred shares are represented by the blue and green lines, respectively. Without exchange of risks, the young generations feature an over-exposure to human capital risks (the gap between actual and preferred human capital), whereas the elderly feature an over-exposure of financial-capital risks. By trading risks, everybody is able to attain the same, optimal exposure to human capital risk and financial risk over the life cycle.

Obviously, human capital is not traded directly in terms of ownership of somebody's labour—but the risks connected to human capital (*i.e.* wage uncertainty) can be transferred to the elderly by linking pension benefits to wages. Note that the life-cycle pattern applies to the sum of the individual's public pension and private pension. In practice, public pensions are linked to average wages and are largely financed by taxes on labour income. This is a natural way to redistribute human capital risks from the young to the old, as pensions go up and down with wages. For private pension funds this will be more difficult to organize, as wage-linked pensions cannot easily be hedged by existing financial instruments. There is a role for the government, consequently, in issuing wage-linked bonds or GDP-linked bonds to overcome this missing market. The pension funds and insurance companies can buy these financial assets to match their pension liabilities to older generations.

⁷ This includes human capital of future generations. Perfect intergenerational risk-sharing thus involves future generations as well. Optimally, current generations participate in future shocks (e.g. aging, climate change), while future generation share in current financial shocks. Regarding the — substantial — welfare gains of such intergenerational risk-sharing, see Teulings and De Vries (2006) and Gollier (2008).

Figure 2 Young and old trade risks over the life cycle
(initial wealth = 100)



In the absence of such wage-linked or GDP-linked bonds, private pension funds can implement a second-best solution using existing (nominal) bonds. It is often assumed that nominal bonds offer a good substitute to human capital, both being reasonably safe, relative to equity.⁹ Moreover, the existence of wage-linked public pensions leaves a smaller role for wage-linked pensions for private pension funds. This may lead to the familiar life-cycle pattern for private pension savings featuring high equity exposures for the young, and low — but not zero — equity exposures for the old.

There are some limitations to this life-cycle pattern. First, extreme equity exposures of the young are unlikely, as human capital provides imperfect collateral, which leads to borrowing constraints in practice. Equity exposures above 100% may result in a negative financial position if financial returns are disappointing, and thus requires commitment of young participants to pay off the negative position out of their labour income. By providing this commitment, pension funds may address these borrowing constraints due to the limited liability of human capital— but only up to some limit, depending on the strength of the commitment. Second, other preferences could lead to less risk being allocated to the old; with habit formation, old cohorts have less time to adjust habits following a shock in wealth, and thus in effect are more risk averse than older cohorts. This is an argument to put fewer risks on the old, although the principle that all should share in risks remains valid.

We can distinguish various ways of organizing risk-sharing through pension funds. In *closed accounts*, individual pension claims are defined in terms of tradable financial assets. In *open accounts*, in contrast, individual pension claims involve claims on the pension fund or insurance company, which are not matched by financial assets at the individual level. The pension funds or insurance companies thus carry mismatch risk, and the aggregate value of the liabilities of the fund may differ from the value of the aggregate financial

⁹ This is not undisputed. Benzoni et al. (2007) indicate that wages are co-integrated with dividends. This implies that human capital of especially young workers is correlated with financial risks and makes financial risk less attractive for young cohorts. Another argument why less financial risk should be redistributed to the young is that — in richer families — part of financial risks is already absorbed by the young through bequests and gifts. This reduces the role of the pension system in efficiently allocating risks for the higher incomes.

assets. Open accounts may involve complete or incomplete contracts, depending on whether the closure rule describing the allocation of mismatch risks is made explicit ex ante (i.e. before mismatch actually occurs). The distinction between closed and open accounts is closely related to that between defined-contribution (DC) and defined-benefit (DB) pensions. Whereas individual DC contracts are closed accounts, DB contracts are usually open accounts. Closed and open accounts are more general than DC and DB, however, in that they avoid the connotation of DC featuring constant contribution rates and of DB promising constant benefit rates. Both open and closed accounts allow for contribution rates and pension benefits that vary with states of the world.

Closed accounts feature the advantage that individual property rights are well defined in terms of financial assets, thereby reducing political risks in the governance of pension funds. Indeed, individual accounts can be priced objectively. The drawback of closed accounts is that the pension contract is constrained by the set of tradable instruments available on financial markets, which limits risk-sharing, for example, with regard to risks in human capital and longevity. Open accounts provide more scope for trading risks; they require commitment of the participants, however, as accidental shortages (and surpluses) have to be recouped in the future by levying an implicit tax on participants.

The public sector continues to play an important role even if more pension promises in Europe are privately funded and thus backed by tradable financial instruments. Compared to private pension funds, governments exhibit more tax power to commit future and young generations to intergenerational risk-sharing. The government, using its tax instruments and debt policy, is thus the most natural party to organize risk-sharing between current and future generations. In particular, by issuing GDP-linked bonds, governments facilitate closed accounts without giving up too much intergenerational risk-sharing.

4 How to implement private pensions

Pensions are complicated ‘trust’ products that involve a long time horizon. The associated market imperfections and individual failures (‘foibles’) are so serious that robust institutions are required to address various imperfections and agency issues. This has direct implications for European regulations of the internal market for financial services. In particular, the various imperfections call not only for government regulation but also for restrictions on free competition and unlimited individual choice.

As regards externalities, governments may want to mandate households to save part of labour income for retirement in order to combat moral hazard associated with means-tested benefits in retirement (for example, in health care and long-term care). Moral hazard arises when individuals reduce saving because they know that they are protected by means-tested programs, anyway. Moreover, by compelling agents to annuitize part of their pension saving at a particular age, governments ensure that the elderly have sufficient own means to finance expenses at the end of their lives rather than having to rely on the government. Finally, forced participation in pension plans alleviates selection in old-age insurance, as one cannot differentiate between people with a long and short life-expectancy.

Mandatory saving and old-age insurance also address behavioural issues, so-called ‘internalities’. Many households are myopic and lack the basic financial knowledge to implement adequate financial life-cycle planning (see Lusardi and Mitchell, 2006). Mandatory participation in life-cycle investment plans protects individuals against undersaving and bad investment decisions, while forced annuitization prevents excessive

dissaving during retirement on account of myopia. The drawback of compulsion is that it typically cannot account for heterogeneity between consumers. As an alternative to compulsion, people can be automatically enrolled in particular pension plans, but may 'opt out'. Defaults can apply to the premium level, portfolio choice and the way in which the pension is paid out. Defaults are so powerful because financially illiterate individuals see the default as an implicit recommendation for a complex product that they do not fully understand.

Another important issue is how the pension provider is selected. Financial illiteracy gives rise to serious agency issues, as households have to delegate these complex decisions to professionals and financial institutions, which do not necessarily act in the interests of their clients. As evidenced by the experience of the United Kingdom in the eighties and nineties, the risks of 'mis-selling' are substantial. The government may make pension insurance compulsory but leave the choice of the pension provider to the individual. This leads to retail competition between providers. Government regulation of providers is then required in order to protect consumers. Also the internal governance structure of pension providers may help to address agency issues. To illustrate, as a trustworthy intermediary between financially illiterate individuals and the for-profit financial industry, collective non-profit pension funds can alleviate these agency issues. .

Collective stand-alone pension funds can play an important role as trusted partners that act on behalf of, and to the benefit of, their members. The involvement of employers, unions or local governments as intermediaries between the financial sector and the individual participants may raise the confidence of the workers that the scheme is run in their interests. As trusted parties, these sponsors can reduce transaction costs by transforming a costly retail product into a less costly wholesale product. By creating insurance pools, they can increase the buying power of workers in financial markets, discipline commercial financial service providers to act in the interests of the members of the pension fund, and alleviate selection by arranging group insurance.

The scale and type of collectives may vary, depending on the institutional setting and preferences of each specific European country. For some — more corporatist — countries, employer-based or industry-based collectives may be appropriate, while for other countries more occupational or regional oriented collectives may offer an attractive alternative. Also the size of the collective may differ, varying from smaller well-identified groups to a national pension fund. Collectives may also involve various countries (e.g. in case of multinationals or professional groups).

The role of different forms of mandated pension plans implies that the EU should be very careful in imposing unlimited competition and individual choice in the market for pensions. Pensions are complicated 'trust' products that are not well understood by financially illiterate consumers. The resulting governance and agency issues may call for various restrictions on free competition and individual choice. Moreover, intergenerational risk-sharing may demand commitment, which also requires limitations on individual choice. Institutions to deal with these problems differ substantially between various countries and require tailor-made approaches.

5 Policy conclusions for the EU

This section summarizes the policy conclusions for the EU.

Conclusion section 2: Stimulate private funding of pensions

By stimulating private funding of pensions and limiting the scope of pay-as-you-go arrangements, member states of the EU help create a deeper, more integrated European capital market. Hence, pension savers can finance investments in other EU countries and can enhance their retirement security by better diversifying country-specific and firm-specific risks. By thus creating more scope for international risk-sharing within Europe, the EU enhances financial stability and the growth potential of the European economy.

More private pension provision can help ensure further development of not only the EU capital market but also the internal market for pension products and services. As a result, economies of scale and scope can be exploited better. Moreover, pension providers have access to a richer set of building blocks with which to build retirement security.

Transition towards greater pension funding may harm some generations disproportionately, and should therefore be gradual.

Conclusion section 3: A good pension is a risky pension

Pension funds should embrace risk by exploiting the trade-off between return and risk and by sharing risks among participants. Hence, EU regulation of financial markets should not prevent pension funds from exploiting the risk premia on financial markets, but rather should mandate funds to communicate to individual participants the risks that result from their investment policies and risk-sharing mechanisms. Indeed, the investment perspective rather than the insurance perspective should be the dominant perspective in government supervision of pension funds. The supervision of pension funds and related EU regulations should therefore not be modelled on that of insurance companies providing guarantees.

Governments can facilitate risk-sharing in private pension funds by providing tradable financial assets such as GDP bonds and longevity bonds. By buying these public securities to match their liabilities, private pension providers do not have to hold substantial solvency buffers. Moreover, participants can hold individual accounts with transparent property rights that can be valued on the basis of objective market prices.

Conclusion section 4: Resist imposing free competition in pension markets

Financial illiteracy combined with the nature of the pension products as an experience good give rise to serious agency issues. Collective stand-alone pension funds can play an important role as trusted partners facilitating intergenerational risk-sharing. The scale and type of collectives may vary, depending on the institutional setting and preferences of each specific European country. The welfare effect of more individual choice raising competition on costs is ambiguous and depends on the specific institutions. Hence, the EU should resist imposing free competition and unlimited individual choice in the market for pensions in order to not block the emergence of collective stand-alone pension funds.

In the presence of more private pension provision, governments retain important responsibilities. To prevent moral hazard due to intragenerational redistribution, governments should mandate individuals to

participate in funded pension saving plans. Mandatory or semi-mandatory participation in specific pension plans can give private plans sufficient scale.

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