Public information on pension systems and pension system changes
Discussion Paper

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Part one: Theoretical background

1. Introduction

Pensions are long-term financial (insurance) contracts. Similarly to most long-term and financial agreements, efficient contracting requires that consumers are well-informed. However, pension systems have features that distinguish them from other long-term relationships as well as other financial contracts, and enhance the usual information needs even further. A typical long-term contract or a typical financial contract includes an offer and a counter-offer that are both made when the contract is concluded. By contrast, pensions tend to be relatively one-sided contracts. For example, defined contribution schemes only define exactly the contributor's obligations (the amount of contribution in absolute terms or as a share of earned wages; the duration of contribution – e.g. working age; etc.), whereas the services provided by the pension system (e.g. the amount of benefits or their calculation method) may be either unclear or very sensitive to changes in regulation.[1] Moreover, a pension system is unlike a typical long-term contract due to the possibility of consumer exit. The two parties are not bound together because the insured party can respond to changes not only by initiating a modification of the existing contract (with the same insurer) but also by moving to another insurer (depending on regulation, from the state system to a private fund and/or form one private fund to another).[2]

Chapter 2 considers the risks associated with pension contracts that are due to their long-term and financial nature as well as the private and public governance of their provision. These risks suggest that efficient contracting requires a high level of financial literacy. Chapter 3 elaborates on the outstanding issues of 'pension literacy'. Chapter 4 discusses how market mechanisms may mitigate the need for consumers to obtain sophisticated information. Chapter 5 turns to government policies which may both indirectly and directly facilitate consumer choice. Unintended negative consequences of government intervention are enumerated as well. Chapter 6 draws attention to the phenomenon of myopia, which qualifies the significance of sophisticated consumer information.

[1] For example, the regulation of the second pillar in Hungary differentiates between an accumulation phase and a payout phase, and only the former is regulated. Regulation of the payout phase is still not accepted although ten years have passed since the reform (and the system is more or less five years before first payoffs are due to be paid).

[2] For the concept of pension as a long-term contract, see Whitehouse [2007]. He distinguishes seven forms of risks: life-expectancy risk, longevity risk, the risk of myopia, social and labour-market risks, purchasing-power risk, policy risk, and investment risk.

2. Risks associated with pension contracts

Like most long-term contracts, pensions contain several risks. Conditions may change during the contribution phase or after retirement, and a complete contract would have to define the rights and obligations of the parties for a possibly large number of contingencies. It is worth distinguishing between risks that occur in the contribution phase and risks associated with the payout phase. In addition, moral hazard and regulatory uncertainty must be considered.

2.1. Contribution phase

In the contribution phase, the main risk concerns the accumulation of the personal fund from which pension will be paid after retirement. In a *funded scheme*, the key source of this risk is the investment policy of the pension fund. The higher the *share of more volatile (riskier) investment forms* within the fund's portfolio, the higher the investment risk contributors face. As Table 1 indicates, pension funds in different markets seem to follow relatively different strategies. It is worth comparing Hungary and Poland. In both countries, the most important investment form is government bonds, which represent the most conservative alternative (i.e. smallest risk and lowest expected return). However, the share of equities is quite different in the two Central European countries. (Impavido and Rocha [2006] explain this difference by referring to the fact that most asset management companies in Hungary are subsidiaries of firms based in Continental Europe, where 'equity culture' is weak; whereas the number of subsidiaries of Anglo-Saxon companies is quite large in Poland.)

Table 1. Portfolios of pension funds in some countries, 2004

Country	First year of operation	Government bonds	Financial institutions	Equity	Foreign assets
Argentina	1994	62,0	6,6	12,7	10,3
Bolivia	1997	67,5	7,35,6	7,5	1,5
Chile	1981	18,7	29,5	42,8	27,2
Colombia	1994	48,5	16,6	6,2	6,7
Costa Rica	2001	73,1	14,2	0,1	0
El Salvador	1998	83,5	10,5	0,2	0
Hungary	1998	72,7	2,2	14,4	7,9
Mexico	1997	85,5	4,9	0	0
Peru	1993	24,2	11,4	37,7	10,2
Poland	1999	59,6	-	32,8	2,2
Uruguay	1996	57,9	36,9	0	0

Source: Impavido and Rocha [2006]

The *guarantee of a minimum return* by the state reduces investment risk. In Switzerland, for example, an absolute guarantee system is in place (3 percent p.a.), which is backed by an industry-wide guarantee fund. In Chile, the minimum return guarantee is relative – defined in relation to a band around the moving average rate of return of all pension funds over a 36 month period. If the rate of return is lower than the lower band, the asset manager needs to make up for the difference from its own minimum reserves. If the return is higher than the upper band, the difference is placed in a profitability reserve in the pension fund. This strict regulation results in very similar returns in the different funds.

Regulations often limit investment risk by forbidding some forms of investment or requiring a certain portfolio composition. (For example, restrictions of foreign currency exposure to 30 percent were widespread in Europe before the introduction of Euro.)

Investment risk is relevant only in a funded system. However, the level of future payoffs is uncertain in a non-funded scheme, too. Indeed, an implicit rate of return can be calculated for a state (pay as you go) system. The literature suggests the *growth rate of the aggregate tax base* as a measure of this implicit rate in a balanced PAYG system and as a benchmark for assessing the performance of the funded system (Samuelson 1958)[3]. Whereas the funded system contains investment risks, the pay as you go system faces *demographic risks*. Demographic projections are necessarily imprecise. Demographic forecasts have changed often over the last decades (see Whitehouse [2000]), so we have no reason to think that current projections will happen to be accurate, especially for young contributors.

Besides investment risk, potential future changes in the earnings of an individual contributor also affect the size of the accumulated fund at the time of retirement. More generally, payoffs are sensitive to future *changes in the working profile*, including future wage levels (and corresponding contributions), possible gaps in contributions (due to unemployment, caring responsibilities etc.), the age at which contributions begin, the age of retirement, etc. In fact, there is a high degree of noncalculable uncertainty. Any calculation can only be based on unrealistic assumptions (e.g. the worker stays in his actual job until the age when, according to current regulation, he can retire).

Unfavourable changes in fees are an additional source of risk during the contribution phase. It might first seem that, if fees must be communicated, this risk is eliminated because consumers can respond to unfavourable changes by moving to another insurer. However, this sanctioning mechanism may not actually work if the fees of different funds are not readily comparable. For example, in the United Kingdom there are two types of fees: a fixed fee and contribution-related fee set as a percentage of the contribution (Whitehouse [2000]). A change in the fee structure – e.g. a parallel reduction of one fee and an increase in the other – is likely to have complex consequences, which are hardly tractable for consumers whose financial literacy is limited. In Hungary, the fee structure also has two components, which makes it rather difficult to comprehend. An operation fee is levied as a percentage of the contribution, and an asset management fee is defined as a fraction of the accumulated fund. The mixed fee structure makes even the calculation of the rate of return rather confusing: operational fees are transferred to an operational reserve, and the rate of return is calculated for the personal funds (coverage reserve) *and* the invested portion of the operational reserve. Although this mixed fee structure currently does not imply that the actual fee level is higher in Hungary than in other countries (Impavido and Rocha [2006] found that Hungarian fees compare favourably with most other systems), pension funds are likely to have more leeway to implement changes in the fee structure that are unfavourable for (unwitting) consumers than pension systems with simpler fee structures.

[3] However, Settergren – Mikula [2005] show that this is an appropriate indicator only when the age structure of contributors and pensioners is unchanged.

2.2. Payout phase

In the payout phase, the pensioner typically receives some form of annuity payment, while no additional contributions arrive. In funded schemes, both *longevity risk* and investment risk are present. Payoffs are financed from the accumulated fund (and the accrued interests). Longevity risk occurs because the pensioner may live too long and the accumulated fund may not cover the costs of the annuity; or his life is too short and surviving relatives must look for other sources to finance their consumption. Investment risk occurs due to the uncertainty of interest rates during this period.

The *allocation of risk* changes fundamentally when the payout phase commences. During the accumulation phase, the investment risk is borne by the insured party, with the proviso that he can change the pension fund. After retirement, the allocation of risk depends on the payout form. Three basic forms of payout can be distinguished: annuities, lump-sum payments and withdrawal. If the annuity is fixed or increases independently of the investment returns, the investment risk is borne by the fund. If the indexation of the annuity payment depends partly on the performance of the fund, risk is shared between. The *longevity risk* of 'too long lives' is borne by the fund. The allocation of the risk of 'too short lives' depends on whether the fund allows (or requires) joint annuities and thus handles the survivors' risk. Lump-sum payments allocate the whole of both investment and longevity risks to the pensioner. Withdrawal means that the pensioner may withdraw part of the accumulated fund as lump-sum payment at the time of retirement and receive the rest as an annuity. This method shares both risks between the fund and the pensioner. In non-funded schemes, the above-mentioned demographic risks may be present even after retirement as the government may have discretion in adjusting (changes in) pension levels to match budgetary resources.

A major issue related to longevity is the ageing of society. The false prognostication of the lifetime of an individual pensioner can be handled through the pooling of risks. However, the mortality table, upon which the calculation of the annuity is based, may also provide uncertain estimates – e.g. because mortality can only be estimated from past experience, which is an uncertain predictor of the future. As a result, the fund may be unable to spread a significant part of the aggregate longevity risk. Whitehouse [2007] suggests that two types of risk should be explicitly distinguished: 'longevity risk' should only refer to errors in individual prognostication, while increases in the projected length of life of a cohort or generation should be termed *'life-expectancy risk'.* One partial solution to life-expectancy risk is the creation of a demographic reserve. (E.g., upon a pensioner's retirement and the issuing of his annuity contract, a Hungarian pension fund must not only create a service account, from which pensions are paid, but also add 0.3 percent of the account's value to a demographic reserve in order presumably to cover longevity risk.)

2.3. Moral hazard

During the lifetime of the pension contract, the client must consider the risk of moral hazard due to the possibly opportunistic behaviour of the fund's management. Governments attempt to shape the management's incentives by regulating the governance structure of funds. A regulatory/supervisory agency typically requires a pension fund to produce a number of documents before it issues a license (e.g. the deed of foundation; a financial plan; information on members of the board of directors and the supervisory board as well as on auditors; internal

controls and auditing systems; and outsourcing contracts with service providers, including custodians and external asset managers). The fund may have to create specific internal functions such as a managing director, a manager responsible for investments, a senior accounting officer and an internal controller. In several countries, the law also defines the allowed range of formal governance structures for funds. For example, the law may favour non-profit mutual associations as they are believed to reduce owners' and managers' incentives to divert or withdraw capital.
It should be noted, however, that a government guarantee of minimum return is itself a direct method to eliminate consumer risk due to moral hazard. If there is such a legal guarantee, the close regulation of private governance reduces the risk borne by the state budget (and taxpayers) rather than contributors to funds.

2.4. Regulatory risks

Regulation, such as minimum return guarantees, can reduce risks. However, the *uncertainty of pension regulation* may add significant risks to those types of risks that are inherent in pension schemes. In many countries, citizens have experienced regular reforms of the pension system over the last decades. As a result, they may consider the pension system unpredictable. They believe – probably correctly – that they cannot accurately foresee their future pension because regulations may change before they retire.

There are many aspects of regulation, some or many of which may change in the medium or long term. In the contribution phase, regulations may define the types of charges that funds can levy and require a guaranteed minimum rate of return. As for the payout phase, regulations may define the age of retirement, the minimum length of the insured period (number of working years) before retirement and the calculation method of payoffs (or annual increases in future payoffs).

Regulatory risk tends to be highest for the payout phase. Regulations usually focus on the contribution phase, while the payout phase is often left largely unregulated. This is especially the case in the first years after the introduction of a new funded system. In particular, the calculation of the annuity or the options of payout forms are often unknown.

3. Choices between schemes and funds: the role of financial literacy

Clients in financial markets (e.g. depositors, debtors, the insured and small investors) are, all over the world, among the most vulnerable groups of consumers. A financial relationship requires a thorough knowledge – especially of interest rates, fees and other risks – that a consumer is unable to handle. As we have seen, many types of risks should ideally be comprehended and weighted if a consumer is to make an efficient decision.

3.1. General financial literacy

Financial literacy limits consumer sovereignty even in the most developed countries. Clearly, this problem is even more pronounced in countries with forty years of history without classical financial and capital markets. Market models usually suppose that gains from switching schemes

or funds induce large numbers of clients to 'vote with their feet'. However, financial markets, and especially insurance markets, are characterised by very *weak consumer reaction*.

Financial literacy concerning pension schemes and funds largely depends on a country's general financial culture. A good indicator is how well-developed the *institutions of financial and capital markets* are (stock exchange, banking system, baking services). But these can be very attractive if only large investors participates in these markets. Due to this, the general saving behaviour of *households* is the other crucial factor (e.g. the shares of savings in cash and deposits, the number of bank accounts, debit or credit cards; the use of internet banking; the share of savings in foreign currency; general knowledge of exchange rate risk; the use of riskier investment forms such as investment funds, stocks, bonds, and life insurance).

Financial planning for pension years is an intensely researched question in many countries. In Poland as well as many other countries (including, for example, Hungary), the most widespread form of 'insurance' is the bank deposit. While people work, they attempt to accumulate a large fund in their bank accounts, which they intend to spend after retirement. Furthermore, respondents to surveys often mention that they plan to continue working after retirement or count on the support of their children. Respondents also name real estate or durables as investments for their years in retirement. Complicated investments in financial – capital or insurance – markets typically play a minimal role in their planning. (Chlon [2000])

In all countries, bank deposits and real estate are typically among the largest parts of the total investment. In the literature on pensions, these are often treated as unfortunate alternatives to voluntary pension funds. Nevertheless, it is a fact to be reckoned with that annuities from real estate schemes play an (increasingly) significant role in people's financial planning. *Real estate* bought during working years – rather than any form of pension insurance – may serve as a key source of pension payments.

3.2. Differences among groups of consumers

Age groups

Young people. The level of consumer interest changes along the life-cycle. *Young people* are, naturally, less interested in getting informed about pensions. Although their general financial literacy may be of a relatively high level, their 'pension literacy' is likely to remain limited. Their interest might be enhanced if funds use 'defined contribution' schemes, in which early payments have a higher effect on pension payoffs due to compound interests. However, it is questionable whether this effect can be strong enough to increase pension's priority as a saving target. Other typical investment forms – repaying a student loan, buying a house, covering the costs of children's education, etc. – are likely to remain in the focus of young (and middle-aged) people.

Older people – switching between private and public schemes. In Poland, participation in the funded pillar was primarily motivated by the desire for a higher pension or a more secure retirement income (Chlon [2000]; the same holds for Hungary – see Szalai and Czibik [2006]). As is well-known, some people made wrong decisions and their cases received high publicity. It is usually *older contributors* who have had the choice to shift into the private funded scheme. In Central Europe, they are typically considered as the most vulnerable group due to their low financial literacy. As a result, they may well not comprehend the complex arrangements of both

schemes and some of them will shift to the private scheme even if they would most probably have been better off remaining in the public scheme.

Other differences among groups of consumers

Whitehouse [2000] emphasises that income is a strong determinant of the consumption of different financial services. He also found in the UK that other important differences reflect characteristics associated with low income. For example, people who rent their homes either from a local authority or from a housing association are much less likely than the population as a whole to have any of the major financial products. Lone parents' take-up of current (checking) accounts, contents insurance, savings instruments as well as personal pensions is below the population average.

3.3. Regulatory uncertainty and the motivation to gather information on the pension system

In addition to the need of high personal investment (especially, into human capital through financial education), frequent changes in regulations further reduce people's already limited knowledge of the details of pension systems. In fact, regulatory uncertainty may well make ignorance of the details of the pension system a rational consumer choice. The low interest in and knowledge of pension systems in well-developed countries seems to confirm this hypothesis. This low interest occurs despite the fact that, among financial market instruments, consumers are least confident about picking a specific pension fund (see Whitehouse [2000]).

4. Market factors facilitating consumer choice

4.1. Market concentration

The market structure influences the risk of choosing the wrong (inferior) pension fund. Health insurance markets are well-known examples for the paradox that less market concentration results in less competition. The reason is that the products of providers have different quality and the quality issue is so complex that consumers can only compare the offers at a very high cost. The higher the number of providers, the higher this cost and the lower the rate at which consumers switch funds. As a consequence, the competitive pressure on insurers becomes weaker. At first sight, information costs are less of an obstacle to competition among pension funds as pensions are only financial instruments to which the quality issue is less relevant than to health services. However, the real 'quality issue' here is the riskiness of the financial instrument. And, if limited financial literacy is taken into account, comparison costs may be very high. We can assume that market concentration is likely to reduce the costs of comparison in the pension market, too. (Table 2 provides information about the market concentration of pension funds in Central Europe and Latin America.)

Table 2. Number of pension funds in Latin America and Central Europe

Central Europe			Latin America		
Country	Number of pension funds	Inhabitants	Country	Number of pension funds	Inhabitans
Bulgaria	8	8 million	Argentina	12	40 million
Croatia	7	4,5 million	Bolivia	2	9 million
Estonia	6	1,3 million	Chile	6	16 million
Hungary	18	10 million	Colombia	6	46 million
Latvia	5	2,3 million	Costa Rica	8	4,5 million
Poland	16	38 million	El Salvador	2	7 million
			Mexico	13	107 million
			Peru	4	29 million
			Uruguay	4	3,5 million

Source: Impavido and Rocha [2006]

4.2. Credence and reputation

Economic literature distinguishes three types of goods with respect to information: 'search', 'experience' and 'credence' goods (Nelson [1970, 1974]). The main characteristics of search goods can be determined before purchase. For experience goods, this information can only be obtained after purchase and during use. For credence goods, even use may not reveal for the consumer if the desired characteristics exist. Since the consumer is typically unable to estimate the riskiness of the investment policy of a pension fund (the investment risk), pensions are credence goods.

The credential nature of pension funds can also be inferred from their usual advertisement strategy. In many countries (e.g. Poland, see Chlon [2000]), pension funds base their advertisement strategies on the existing market position of their parent companies. This indicates the high importance of reputation in this market. This corresponds to the effective marketing strategy for credence goods suggested by economic analysis. Klein and Leffler [1981] argued that reputation and related mechanisms could be used to solve the problem of adverse selection, which is the typical problem of credence goods. Investments in non-salvageable firm-specific capital (such as reputation, trademark, brand name) can serve as an assurance because the firm will lose these investments if the low quality of its products is revealed and it is forced to shut down. Landes and Posner [1987, p. 270] indicate that 'creating such a reputation [for high quality] requires expenditure on product quality, service, advertising and so on'.

The healthy functioning of reputation does not necessarily presuppose a high level financial literacy. In general, it may pay for a firm to build up long-term reputation and offer high quality from the beginning even if consumers are initially ignorant – provided the firm has a sufficiently long planning horizon. Moreover, ignorant consumers may rely on the observable choices of informed consumers (perhaps in other countries where mother companies operate).

4.3. Provision of information

Even in the absence of government regulation or provision, consumers can turn to several sources of information: advertisements (in the media, particularly in television, the written press and increasingly on the Internet), direct and voluntary information provision by pension funds (e.g. leaflets, brochures, call-centres), family and friends, tied and independent agents.

Agents. Agents are of two types: tied and independent. Tied agents are typically treated by consumers as biased advisors. By contrast, independent agents are considered to offer trustworthy information. Therefore, a key requirement is that agents must communicate their true types to consumers. Tied agents must be penalised if they pretend independence. Moreover, non-tied agents are not necessarily truly independent. Differences in commissions may make them very partial – to the detriment of consumers.

Agencies' incentives to sell may increase inequalities caused by differences in financial literacy among consumer groups. Low income groups which are least sophisticated and face the highest risk of wrong financial decisions rarely receive solicitations from agents (see Whitehouse [2000]).

In Poland, the number of agents has been the only significant factor determining the number of members in particular funds.[4] However, when consumers were asked which factors they had taken into account, they named the size of the fund's capital and personal experience with parent companies (Chlon [2000]). The size of the agent network probably correlates to the size of the fund's capital. The role of personal experience is consistent with the view that reputation is a key element in the pension market.

Employers. In Poland, employers were prohibited from influencing their employees' choices among pension funds (Chlon [2000]). By contrast, in many other countries, workplace access to pension insurance is not only allowed but positively encouraged. Arguably, there are two reasons for this: (i) lower marketing and administrative costs, and (ii) a higher intensity of market competition among funds. The latter is likely because employers are typically *better educated in financial decisions* than employees. They gather more relevant information and are able to compare funds more in a more effective way.

A higher level of comparability forces funds to compete more vigorously. Moreover, employers may have *greater bargaining power* than employees, and may be able to achieve better deals for their employees. (In voluntary health insurance markets, there is strong evidence that market competition is higher in countries where a higher share of insurance contracts takes the form of group insurance by employers (see Colombo and Tapay [2004]).

It is debated whether administrative costs are indeed lower. If an employee moves to a new job, his pension fund remains the same. So lower administration costs are only short-lived, especially in labour markets with high worker mobility.

[4] Factors that supposedly influence the choice among funds include: (i) managers' capital, (ii) investment strategy (iii) information, (iv) shareholders' domestic experience (personal relation with parent companies) (v) parent companies international experience, (vi) services, (vii) returns, (viii) size (number of clients), (ix) charges, (x) recommendations (by family members or friends), (xi) advertisements, and (xii) the proximity of the nearest office of the fund. By another account, these factors can be condensed to (i) expected security, (ii) expected performance, (iii) advertisement, including agency activity, and (iv) personal recommendation.

5. Government policies facilitating consumer choice

5.1. Indirect policy tools

Regulation of investment risk. For the consumer, the risk of choice among funds depends on whether the net rates of return are generally similar across funds. If they have fairly similar investment portfolios, then the choice among them does not entail a high risk. As noted above, minimum return guarantee rules tend to result in similar returns in the different funds. Rules restricting portfolio choice have the same effect. Consequently, the risk of choosing 'the wrong fund' and the need for consumer information is sharply reduced.

Limiting market concentration and product differentiation. Government policy can also be used to influence *market concentration* (e.g. it may favour very large funds, of which there can only be a few) and lead indirectly to better comparability. More generally, the degree of *product differentiation* can be mitigated to some extent by standardising or regulating services.

A side effect: false sense of security. However, extensive regulations may have an unfavourable side-effect. Consumers are unlikely to know much about the details and effects of regulations or whether they are effectively enforced. When regulations have gaps[5] or are not enforced effectively, they may result in overconfidence among consumers. They may create a 'false sense of security' among them, which may reduce their already low incentives to gather information about the performance of pension funds even further.

Employers. In general, employers tend to have inadequate incentives to offer those pension funds to their employees which more closely fit their needs. The problem can be mitigated by defining a fiduciary liability of employers for choosing a pension fund on behalf of their employees.

Advertisements. The advertisement policies of pension funds are strongly regulated in many countries. In Poland, for example, agents are not allowed to promise higher investment returns than other funds.[6] This may be consistent with the credence characteristics of pensions and the fear of chase after returns (see below). However, it contradicts the general finding of economics that advertising of truthful information should not be restricted by regulatory authorities (Rubin [2000]). The reason is that producers of products with quality levels above the minimum will have incentives to advertise this fact, and the market will tend to provide complete information. Forbidding information disclosure may prevent movement towards an efficient market equilibrium and accommodation to consumers' tastes.

[5] In Hungary, for example, while there are very complex regulations on accounting and publication, it is unclear how non-listed securities are valued. Fortunately, exposure to such assets is very small.

[6] However, more than a quarter of people told that they were convinced their pension fund would offer the best return and nearly half of them said that the fund's high return was of primary importance in their choice.

5.2. Mandatory disclosure and provision of information by public agencies

Choice among state and funded schemes. As noted above, average real wage growth can be used as a measure of the implicit return in a balanced PAYG system and is a useful benchmark for assessing the performance of a second pillar. Its mandatory publication by the state pension scheme therefore facilitates choice between the pillars. It must be borne in mind, however, the unforeseeability of demographic developments makes the estimates of average real wage growth highly unpredictable.

Choice among funds. Regulations attempt to facilitate comparisons by prescribing specific accounting and publication rules for funds. Regulations may define indicators of costs (fees) and rates of return to be calculated and published in newspapers or leaflets sent out to clients. The indicators are either provided by the funds or calculated and published by the regulatory agency or private market firms (e.g. rating companies). Leaflets sent by the funds to all clients are a very cheap form of communication. It also provides a cheap opportunity to inform clients of the indicators of other financial institutions, as well. The regulator may well wish to oblige funds to do so. For example, Impavido and Rocha [2006] recommend that the annual report sent by the fund to members should contain not only information on the individual fund's performance but also simple tables comparing performance with the rest of the industry.

Information on rate of return versus fees. The chasing of returns is a well-known phenomenon in many countries: consumers move to funds that offer higher rates of return. However, information on fees should be considered as well. The problem is that information on the rate of return seems more obvious and is therefore used more readily than information on fees. However, the rate of return is volatile, and a high return is typically the consequence of riskier investments by the fund, which is often less obvious for its clients. Moreover, consumers are more sensitive to information on return than information on fees because they do not realise that the return is calculated only for a fraction of their contribution: the funds that remain after operation costs. Another important aspect to be considered is that when funds follow more or less similar investment policies, differences in return among them are smaller than differences in fees.

If consumer activity is indeed driven by information on the rate of return, increasing the volume of information on the importance and actual levels fees seems a rational policy. Moreover, the discretion of funds with mixed fee structures to the detriment of uninformed clients can be constrained by a unified method of fee accounting: the obligatory calculation of a charge ratio (see Impavido and Rocha's proposal for Hungary). The charge ratio is one minus the accumulation ratio, where the latter is the ratio of the final cash balance produced when fees are charged over the cash balance where fees are not charged.[7] This regulation does not limit the types of fees levied by the funds. It merely obliges them to communicate information in a comparable form. Of course, the introduction of any obligatory indicator runs the risk that the

[7] Bateman and Mitchell [2004] report charge ratios for Australia that vary from 5 to 15 percent for employer-sponsored defined contribution schemes, and that vary from 22 to 28 percent for the much more costly open, retail schemes. Whitehouse [2001] reports charge ratios that vary between 15 and 20 percent in most Latin American countries, but that can reach 28 and 35 percent in Argentina and Mexico, respectively. Charge ratios in Hungary (in range of 17 and 29 percent) do not compare favourably with these ratios. This unfavourable result confirms the unfavourable effects of an (unregulated) mixed fee structure in the Hungarian private pension system.

regulated industry will look for new types of fee settings, which are not measured by the indicator.[8]

Mandatory individual calculations of projected payoffs. As noted above, individual calculations of future payoffs can only be based on very unrealistic assumptions. Nevertheless, information regulations frequently require funds to provide their clients with such calculations. This makes sense because even consumers who are aware of the size of their accumulated fund tend to overestimate their accrued pension benefits to a high degree.[9]

Too much information. As noted, even in the absence of prohibitive regulation, competing funds may produce too much information. Mandated disclosure may worsen the outcome: consumers may be flooded by information. As a consequence, they may find it difficult to pick those pieces of information that are really relevant for them and may even choose to ignore them all.

Crowding out. Another unintended negative consequence of government activity may be the crowding out of information produced by market participants. If a public agency provides information free of charge, both the funds themselves and independent market institutions (e.g. rating agencies) will have less incentives to produce and provide information to consumers. If potential government failures are considered, it may happen that less reliable (government produced) information crowds out more reliable (market produced) information.

6. Myopia

As noted above, younger people may not be interested in obtaining and processing information about pensions. Consequently, the rationality of their choices remains limited. However, they might save too little for their old age even under perfect information. Too little in the sense that they will regret their past decisions as they approach retirement. That is, they may suffer from myopia. Three sources of myopia can be distinguished: a very high discount rate, optimism (about pension needs) and time-inconsistency.

6.1. Very high discount rate

Since pension is a form of long term saving, the time preference of the contributor is a key determinant of her behaviour. If her discount rate is high, the contributor is not interested in the future. She demands a very high return to consider a saving because a reduction in current consumption can only be compensated by very high consumption in the future.

Szalai [2006] evaluated discount rates for the first and the tenth year based on a household survey in Hungary. Discount rates seemed to be far higher than the market rate of interest. While

[8] Another way to mitigate the chasing of returns is to ensure that new entrants are allocated to low fee funds. In particular, if undecided new members are allocated by their employers, the latter will have an incentive to allocating them into large funds (irrespective of their fees) because this reduces their administrative costs. Impavido and Rocha [2006] suggest that in such a situation the regulator should restrict employers' choices to the three funds charging the lowest fees.

[9] Ghilarducci [1992] shows that US employees estimate accrued pension payoffs that are four times higher than actuarial estimates from the same data.

the latter was about 8 percent at the time of the survey, 60 percent of the respondents demanded a higher than 10 percent return (48 percent demanded more than 15 percent) on a credit which would be repaid with certainty. Short term discount rates were lower among older respondents, which is consistent with the view that younger people have urgent consumption needs and must repay loans (student loans, mortgages, etc.). The long term discount rate decreased with income level, and was higher for women.[10]

5.2. Time inconsistency

Time inconsistency is the problem caused by a diminishing discount rate (Diamond and Köszegi [2003], Laibson [1997], Harris and Laibson [2001], Loewenstein and Prelec [1992], Frederick et al. [2002]). If the discount rate is higher for the years closer to the present than for later years, it is worth postponing the accumulation of a fixed amount of savings for retired years until the last years before retirement. (The reason is that delaying consumption has a smaller cost for the contributor than delaying saving.) In particular, if the expected interest rate does not change, the delaying of saving is a rational decision under a diminishing discount rate. However, time inconsistency arises because a diminishing discount rate encourages the delaying of saving in each period. As a result, people keep postponing their decisions to save. This is the problem of 'weakness of will'.

Time-inconsistency (a diminishing discount rate) can be handled by a rational agent with foresight. A sophisticated consumer may realise the potential threat and be ready to accept a saving scheme with increasing contributions as he ages. The result would then be the widespread signing by younger generations of long term contracts of a 'hand-tying' nature.

5.3. Optimistic about the length of the working period

Pension as a form of insurance provides income security for the last years of one's life when one is no longer able of obtaining sufficient income from the labour market. For insurance in general, optimism means that potential insurers underestimate the probability of the event which reduces their income or worsen their other conditions. For pension, this corresponds to the underestimation of the level of savings required for financing the needs in old age, because they underestimate the length of the retired period. Empirical studies have found that people can on average predict their longevity well (Hamermesh [1985]; Hurd – McGarry [2002]).[11] By contrast, Szalai [2006] estimated the expected date of retirement based on a Hungarian household survey. He found that the expected age of retirement in 2006 was five to six years higher than the average retirement age at the same time (55 and 56 years of age versus 60 and 62 years of age for women and men, respectively). The gap cannot have been due to the predictable rise in 'ordinary' retirement age because expectations did not vary with the age of the respondent (the

[10] However, a high discount rate is only a very 'noisy' one for myopia. The demanded rate of return is sensitive to the expected growth or decrease of the income level. If the respondent expects income growth, the theory of income smoothing predicts a demand for debt rather than savings. The decreasing marginal benefit of income can also explain why expected income growth leads to higher discount rate of time preference.

[11] Empirical findings on the accuracy of predicted income streams are mixed. Dominitz [1998] found that subjective income expectations are good predictors of realized income, and Stephens [2004] found that subjective job loss probabilities are strongly related to subsequent job displacements.

youth should have expected a higher increase in their retirement age. This evidence suggests that people will save too little for retirement.[12]

Part two: Lessons from the peer countries

1. Information on changes

Knowledge about the current system (risks, options). The empirical picture is somewhat ambiguous in all countries. People seem to be aware of the major driving forces behind pension reforms. For example, Germans correctly associate ageing and longevity with challenges to the statutory pension scheme's long-term sustainability (especially people with higher education evaluate these social developments negatively). However, knowledge about the extent of 'ageing' as well as the magnitude of its impact on pensions is limited. For example, average life expectancy is underestimated. The situation is similar in the UK, where individuals are largely unaware of (the extent of) the increase in average life expectancy and have a limited understanding of the way in which the system operates.

Portugal introduced an explicit 'sustainability factor' to life expectancy in the calculation of pensions. The formula for the application of the sustainability factor results from the ratio between life expectancy in 2006 and life expectancy in the year before retirement. For each year the indicator of the average life expectancy at the age of 65 is published by the National Institute of Statistics.

The main issues of state pension schemes are widely communicated in all countries – especially in connection with ageing and focusing on the sustainability of the current pension system.

In state pension schemes, deferred pension is an important option in every country. People can choose to continue working after reaching the statutory retirement age. If they choose this option, they will get a relatively higher pension because the weight of an additional working year life is higher than the weight of a working year within the obligatory contribution phase. For example, in Lithuania the state pension can be deferred up to 5 years and increased 8 percent monthly per every full year of deferment. In Great Britain, the deferral has a special form: a lump sum payment. If people put off claiming for at least 12 consecutive months, they can claim a one-off taxable lump sum.

In many countries, pension funds offer a number of different investment portfolios. In Central Europe, regulations tend to define three types of portfolios with different levels of risk. Contributors can typically choose among a *conservative* portfolio (with a low share of risky investment – in Hungary, a maximum 10 per cent of equities), a *balanced* offer (10-40 per cent of equities) and a *progressive* portfolio (35–65 per cent of equities). In Hungary and Slovakia, the regulation constrains individual choice among these investment forms. In Slovakia, the saver must leave the progressive portfolio after reaching the age of 47 and then quit the balanced portfolio at the age of 55. In Hungary, contributors above 57 years are not allowed to choose the

[12] A further qualification: Hamermesh [1985] found that the subjective distibution of survival probabilities is flatter and has greater variance than its actural counterpart, which leads people 'to invest more than otherwise in assets whose returns are concentrated during retirement rather than during the person's working years' (p. 405).

riskiest portfolio. In Lithuania, persons within 7 years to the pensionable age must be informed personally about the risks and their attention must be drawn to the option of a conservative portfolio.

The riskiness of a pension fund is an uncomfortable idea for many people. For example, the majority of people in the UK felt that it was inappropriate to take risks with pension savings. 43 per cent of respondents did not want to take any risk with their savings. (64 per cent believed that a pension fund linked to the stock market was too much of a risk. However, a significant proportion of respondents did in fact own products with an element of risk to their capital.)

It is interesting that *tax incentives for pension savings* are not discussed in most questionnaires (except by Germany). In Germany, there has been a new private capital-covered old-age pension with a bonus to all beneficiaries and tax relief for special expenses. This well-communicated and easily learnt incentive system has partially been responsible for the rapid growth of the third pillar (11 millions contract has been signed since 2001).

Expected changes in the schemes. Reform is a permanent feature of every pension system. There are frequent changes in regulations (increases in retirement age, new calculations for payoffs, new forms of savings, etc.), which makes the prediction of future pension very difficult. All countries report recent changes or ongoing reform. For example, the Social Security Act in Malta guarantees that there will be strategic review every five years. The Minister for Social Policy set up a Pensions Strategic Unit, which will be tasked with such review.

Expectations – the need for individual savings. In most countries, individuals are provided a tool that helps them calculate the expected amount of their future pension. In Slovakia and Lithuania, there is a pension calculator on the Internet (on the official website of the agency responsible for insurance regulation). In Lithuania, individuals may choose parameters (age, wage, gender, investment return, etc) and compare the predicted values of their future pension in funded schemes and the state social insurance system.

In Portugal, individuals have access to the official website of the Social Security agency by means of a password, where they can view all information on their career contributions and simulate their pension's value.

In the UK, a number of specific forecasting products provide information to people on State Pension Forecasts. *Individual Pension Forecasts (IPF)* are detailed and personalised forecasts that are provided "on demand". This enables the inclusion of information on how future changes to an individual's circumstances will impact on their future State Pension provision. *Real Time Pension Forecasts (RTPF)* are web-based forecasting services. *Combined Pension Forecasts (CPF)* are voluntary services. Their statements are designed to prompt people to consider their pension provision and review their plans.

The recognition of the need for private savings for retirement is widespread in all countries. For example, 95 per cent of Germans believe that the statutory pension 'is not sufficient any more, one will have to make up for private provision', and almost two thirds of working age people agree that 'one should deal with the pension issues on a regular basis'. On the other hand, two thirds believe that the fact of people living longer has already been sufficiently taken into account within individual private old-age provision. It is worth stressing, however, that saving for retirement is the predominant savings motive in Germany. This is especially interesting if we consider that,

according to the data, people tend to underestimate their rights concerning the level of state-support to occupational and private provision: far more than half of Germans highly underestimate potential resources available to them.

In the UK, respondents often overestimated the level of state pension and assumed that there is universal entitlement to the state pension or that all those entitled receive the same level of award. However, 81 per cent of those under state pension age think that a state pension will not provide them with the standard of living they hope for in retirement. Nevertheless, these expectations do not lead to high level of planning: many people at all income levels are not planning at all and only 37 per cent have made any additional provision for retirement.

Almost every country reports that young people are usually not very interested in pension matters. By contrast, people who approach retirement age or for some reasons are afraid that they could become unemployed, look more often for information concerning eligibility conditions for retirement. Younger citizens are not only less interested in pension issues, but some groups among them are against the state pension system as well. (In the UK, they felt the state pension might well be phased out entirely by the time they retire.). This is partly because the pension system constrains individual choice among alternative mechanisms for saving and priorities of expenditure.

2. Information on choices

Information on the performance of funds. While all countries have adopted regulations which reduce the cost of switching funds, contributors to funds with low performance only rarely transfer their money to another fund. For example, in Estonia it is well documented that people tend to be negligent about issues such as the fees levied by pension funds as well as their investment policies, especially in the mandatory pillar. This confirms Impavido and Rocha's [2006] findings in Hungary, cited above.

As noted above, pension funds offer different investment policies in many countries. Experience with consumer choice among investment portfolios is very mixed. In Hungary, pension funds in the third pillar had the right to offer different portfolio profiles to their members since 2001. However, only about 10 per cent of the funds really introduced a multi-portfolio system until 2007, and only 5–15 per cent of fund members really made a choice. The majority of contributors remained in the default portfolio, which is usually a conservative, low-risk, portfolio (with a 10 per cent share of equities). In the Hungarian second pillar, about 5-10 per cent of fund members did actually choose among the available portfolios. Those who did not were automatically assigned a portfolio according to their age. Members below 47 years of age (i.e. with more than 15 years to go before retirement) were put into a progressive portfolio, while those between 47 and 57 years of age (i.e. with 5 to 15 years to go) were assigned a balanced portfolio. About 70 per cent of fund members were put into progressive portfolios. By contrast, in Estonia the switching statistics show that people have made rather reasonable and beneficial decisions. Almost all of the younger contributors have chosen aggressive (equity) pension funds, while older people have switched to balanced or conservative (no equity) funds.

In the UK, data about the considerations before choosing among financial products and services reveal that 46 per cent of people did not collect any information on products before making a decision. (21 per cent of households who made a purchase in the last five years made a decision without seeking any advice or information from anywhere to find a good deal.) People usually learn from own experience: in general, with more products held, choosing patterns improve.

In all countries, the performance of the funds is heavily controlled by a government agency. These agencies tend to issue a great deal of information on their websites. In some case (e.g. Hungary), information may be too abundant, much of it not really understandable by the public.

Information on payout options. In most countries, there are many options for payout from funds. Typically, a lump-sum can be paid only if there is insufficient capital on the account for an annuity. However, third pillar funds may mainly offer lump sums – as is the case in Hungary, where more than 99 per cent of services are paid as lump sums.

3. Information on rights

Unregulated issues. In Central Europe, the payout phase has typically not yet begun. Legislation focuses almost exclusively on the accumulation of pensions. So it is not yet possible to predict what the hardest choices will be and whether the state should make a stronger effort to provide extensive consumer education. It is already clear, however, that regulations often have significant gaps. For example, in Lithuania the law does not set a requirement for the time of the beginning of the pay-out phase.[13]

In well-developed markets, many types of annuities exist. For example in UK, there is single life annuity (covering only the longevity risk of the contributor), joint-life annuity (which handle the risk on the spouse after the contributor dies) fixed amount annuity and escalating (indexed) annuity. As it was mentioned, the lump sum payment (with high risk of too fast consumption) and withdrawal are other options. In Central Europe, people should be informed of the risks associated with these options.

Information policy of the government. The usual information sources that occur in all countries include the paper format (brochures, leaflets, etc) and cooperation with national TV and radio programmes. The Internet has growing importance (e.g. a pension calculator on the website of the government agency). However, access to Internet differs greatly in different countries, and it tends to be an adequate channel only for younger and/or sophisticated groups.

It is worth considering the example of the UK, where the starting point is scepticism about the potential effects of information policy[14], due to the failure of many people to comprehend the information provided. This leads to many other policy measures besides disclosing information. First, the publication is pre-tested: customer information leaflets have been comprehensively

[13] However, there are also counter-examples. For example, in Bulgaria the insured persons may retire 5 years earlier than the statutory retirement age. Of course, earlier retirement normally leads to a smaller pension because the amount of the pension depends on the resources accrued in the individual account.

[14] Information on its own is unlikely to result in many people taking out a pension or increasing their contributions, but it does have a valuable contributory role.

reviewed and rationalised before publication, each leaflet underwent customer testing to ensure the quality of information provision met required standards.

Investment decisions are strongly influenced by the media, marketing activity and personal recommendations. These are channels that might be used more effectively to communicate the issue of risk. However, the British experience suggests that it is also via these channels that product misperceptions can be formed easily. Among less sophisticated groups face-to-face interaction is the preferred approach. Basically, the UK Government makes use of two approaches: (i) learning, and (ii) personal help in understanding information and reaching better decisions. More precisely, the government's aim is to ensure that

- All adults in the UK have access to high-quality generic financial advice to help them to engage with their financial affairs and make effective decisions about their money;
- All children and young people have access to a planned and coherent programme of personal finance education; and
- Policy is focused on the most vulnerable groups considering the bad consequences of poor financial decisions (efforts are concentrated to schools, workplaces and programmes for young adults).

In Portugal, there are two programmes designed for children. "From Mathematics to Financial Literacy" is evaluated as a good example of a successful scheme run by financial service providers. "Financial education for youth: learning the basics" is designed especially for children aged 11-13 years old and set up as a game. Moreover, the function of an ombudsman with advisory functions has been created for the participants and beneficiaries of individual pension schemes.

Regulation on information. In all countries, funds must send annual personal reports to all clients on their pension accumulation. This report provides information on the amount of contributions transferred to the account, charges, amount of the means accumulated on the account, etc. Information disclosure is regulated in the contracting phase as well. In several countries, the pension fund is obliged to inform the client about risks and options.

Almost all pension providers maintain consultation offices and a network of agents. Interestingly, the questionnaires do not mention the role of insurance agents as an information source, while economic literature stresses their role.

Like Poland, Slovakia regulates advertising by pension management companies. Advertisements must contain information that the conclusion of the agreement with the pension management company is related to the risk and the existing or promoted yield of the portfolio of the pension fund it is no guarantee of the future yield of the portfolio of the pension fund.

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