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PhD Gordana Matković
PhD Jurij Bajec
PhD Boško Mijatović
PhD Boško Živković
M.Sc Katarina Stanić

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Preface

The moment when this Study is presented to the public is rather specific. When the research was initiated one year ago, the question whether the introduction of the so-called pillar II in Serbia was an adequate continuation of reforms of the pension and disability system provoked controversy among a number of professionals in the field. As Serbia was one of rare transition countries that had not introduced mandatory saving in private pension funds in the first wave of reforms, this question was considered urgent for comparative reasons as well. It was very easy to argue that the solution acceptable for almost all transition countries that became members of the European Union would also be opportune for Serbia. In light of the current financial and economic crisis when Croatia and other transition countries are re-examining the existence of pillar II, the environment for discussion is changing in Serbia as well. The pillar II paradigm no longer stands on a firm footing, and possible introduction or renunciation of pillar II does not seem to be crucial for the (in)stability of foundations that a pension and disability system should be based on.

This Study is a result of a several years' research conducted within the USAID Serbia Economic Growth Activity Project (SEGA) that is implemented by BearingPoint. The Study has been designed in cooperation with the Center for Liberal-Democratic Studies (CLDS). Its authors are: Dr Jurij Bajec, Dr Gordana Matković, Dr Boško Mijatović, Dr Boško Živković and Katarina Stanić, M.Sc. Gordana Matković wrote the introduction and conclusions and edited the Study. Katarina Stanić is the author of the second, third and fourth Sections; Section 3.3 is based on Gordana Matković's paper *Characteristics of the Serbian Pension System*; Jurij Bajec and Katarina Stanić wrote Sections 5.1 and 5.2; Boško Mijatović is the author of chapters 5.3, 5.4 and 6; Katarina Stanić wrote Section 7.1, while Boško Živković is the author of Section 7.2. Katarina Stanić compiled Annexes 1A and 2 and Boško Mijatović wrote Annex 1B. We would like to extend our gratitude to Ljiljana Marušić, advisor in the Croatian Pension Insurance Fund, who made useful comments and edited Section 5.2.

Although the Study is a result of several authors' work and the papers incorporated in it were written in different periods of time, all authors agree with its findings.

Content

1. Introduction

Over the last decades, pension system reform has been one of the most widespread and at the same time one of the most delicate aspects of overall reform processes both in developed and transition countries. The long-term pressure of ageing population and longer life span, the need for reduction and additional preclusion of poverty among the old population, the necessary alleviation of fiscal pressures and the need for cheaper workforce, as well as inadequacy of some pension schemes and solutions, have all provided a strong impetus to reforms. On the other hand, there has been strong resistance to changes not only among pensioners, but among the whole working population as well. While these changes have often been accompanied by vehement strikes and protests in developed countries, they have usually run parallel with other social reforms in transition countries, but sometimes without adequate understanding of their importance or without strength for organized resistance in the atmosphere of general insecurity and possible loss not only of employment, but of numerous social privileges as well.

Reforms may imply only parametric changes involving an increase in contributions or lower pension benefits; they may focus more specifically on rules for determining the level of individual pensions with the aim to link them to the level of contributions to the greatest possible extent; and finally, they may imply the introduction of inherently different pension systems.

Reforms in transition countries have most often been designed with the support of the World Bank, and are based on its so-called three-pillar model. Typical reforms within the three-pillar model imply parametric changes of the first pillar (public pay-as-you-go system), introduction of the second pillar through mandatory additional savings of younger beneficiaries in private pension funds, and development of voluntary pension insurance as the third pillar.

As in other transition countries, possible introduction of mandatory savings in private pension funds – the so-called second pillar according to the World

Bank terminology was considered in Serbia during the comprehensive pension system reform in the 2001-2003 period.

This idea was dismissed at the time for several reasons. First, it was estimated that the transition cost of introducing the second pillar would be too high in conditions of substantial inherited debts towards pensioners and the already large deficit of the first pillar. Second, Serbian financial markets were undeveloped and private funds would have been left with almost no investment choices. Furthermore, the state had no administrative capacity for supervision and control of pension funds. Finally, the first doubts about the effects of the second pillar began to emerge at the time, including analyses of insufficiently convincing advantages of its introduction in other transition countries.

The first wave of reform therefore focused on the public pay-as-you-go system, whereas the voluntary component of the pension system was officially introduced in 2006.

There is actually very little knowledge in Serbia about the mandatory system of saving in private funds (the so-called second pillar). Comments and recommendations for swift introduction of the second pillar are so frequent that it may be inferred that it is a proven recipe for a successful pension reform, lacking only political will and courage to materialize.

The aim of this study is to explain in more detail the principle of functioning and organization of this component of the pension system, and to point to its advantages and downsides, as well as prerequisites for its introduction and potential success.

Even though a lot of time should elapse before all effects of pension reform can be examined, several transition countries already have a ten-year experience with reformed pension systems, while Latin American countries have an even longer experience. Moreover, academic discussion about this topic has intensified over the last several years. International organizations have also joined the discussion, particularly the World Bank that promoted the system at the first place. All this serves as a solid basis for a more in-debt examination of effects of such an approach to pension reform.

2. Pension System Fundamentals

2.1. Definition of Pension

An old age pension includes periodic payments intended to i) maintain the income of the beneficiary after retirement from gainful employment at the legal/standard age or ii) support the income of elderly persons[1].

Pensions represent a mean of social protection – *social benefit* protection against the risks of old age[2]. As such, depending on how it is administered and financed, pensions may also have the character of *social assistance* and/or *social insurance*[3].

Pensions administered and organized under a special institution of social insurance and financed from contributions is a *social insurance benefit*.

Budget-funded pensions have the nature of *social assistance* benefits and they are typically called social pensions. The main differentiating feature between social and standard pensions is that the former is non-contributory. Hence, it represents a pure transfer, rather than saving or insurance[4]. There are two types of social pensions, which will be explained more thoroughly in Section (3.1).

[1] ESSPROS manual and user guidelines, EUROSTAT, 2008, p. 57

[2] Including the risks of disability and death, but this study is primarily focused on old age insurance, i.e. old-age pension.

[3] For more details see Annex 1 Social Protection from Old-Age Risks

[4] Palacios, R. And Sluchynsky, O (2006), *Social Pensions Part I: Their Role in the Overall Pension System*, Social Protection Discussion Paper No.0601, World Bank

2.2. Pension System Objectives and Role of the State

Overall, the pension system has multiple objectives - the most important being *consumption smoothing* and *poverty reduction*.

According to the life-cycle hypothesis, individuals prefer smooth consumption. They seek to maximize their utility through *smoothing of lifetime consumption*, which means that an individual should consume approximately the same amounts in old-age as when he/she was working.

This practically means maintaining the pre-retirement standard of living. What income level in retirement will maintain the pre-retirement standard of living depends on a variety of factors and has been the subject of a number of studies. [5]

From an individual point of view, income security in old age requires a *longevity insurance and consumption smoothing mechanism*. [6]

When saving, people face a range of uncertainties, including the *longevity risk*. If saving individually, a person faces the risk of outliving or underspending his/her savings during lifetime. Therefore, we need the insurer to "pool the risk" – the life expectancy of a larger group of people is better known. [7]

In addition, there are always individuals whose earnings over working years are so low that they cannot save enough. This presents earnings risk.

In a traditional society, the mechanism for consumption smoothing and old-age income replacement relies on intergenerational family support. The traditional reliance on family is dying out in modern societies, and the role is taken on by the pension system.

[5] Brief overview of studies on this issue can be found in: K. Stanic (2008), *Old-age Income Replacement by Pension System in Serbia – Measurement and International Comparison*, the Quarterly Monitor of Economic Trends and Policies in Serbia, No. 13, FREN, p.2

[6] Barr and Diamond, 2006

[7] Barr and Diamond, 2006

There are two major reasons for state/public intervention when it comes to the pension system – *paternalism* and *market failure*.[8,9]

Individuals may save insufficiently due to myopia, or misestimate the level of savings required for the safe old age. Myopia may be the result of a short-sighted planning horizon or high personal discount rate. Empirically, it is difficult to distinguish between these two causes, but there are strong indications for the latter. A perceived high discount rate can be the result of restricted credit markets, the existence of other, more urgent, lifetime risks (such as sickness, disability, and family dissolution) or natural and political risks" [10].

The latest research also points out to the problem of *time-inconsistency*.[11] Individuals conceive a long-term viable savings plan, but tend to deviate from it. In such cases inadequate old-age savings may be attributed to psychological reasons – current needs and satisfactions are what makes people save less than they rationally know they should.[12]

On the supply side, adequate financial products need to be provided– long-term retirement saving and annuity products (insurance against an uncertain date of death). The rationale for public intervention is the lack or suboptimal supply of market-based retirement products. "Even when such products do exist, they often require public intervention in the form of public education and guarantee funds".[13]

Besides consumption smoothing and longevity insurance, public policy might have two additional objectives for a pension scheme. The first is *poverty relief*: a society might wish its pensioners to have at least a minimum standard of living in retirement. The second is a *redistributive objective*: a society might wish to distribute additional resources above the poverty level

[8] Diamond, 1977

[9] Some authors (Hozlmann and Hinz, for example) classify both arguments under market failure, differentiating between market failure from demand (myopia/paternalism) and supply side (absence of financial products),

[10] Holzmann and Hinz, 2005, p.58

[11] "Pull of instant gratification", David Laibson

[12] For example, as indicated by one research, as many as 76% of respondents are aware that they do not save as much as they ought to (Mankiew, G. *Macroeconomics*, Worth Publishers, 2004, Chapter 16)

[13] Holzmann and Hinz, 2005

for certain vulnerable groups, e.g. women. [14]

A pension system is therefore said to be *adequate* when it manages to accomplish two major goals: old-age poverty prevention (providing the absolute level of retirement income i.e. absolute standard of living) and income replacement in old-age based on the preretirement earnings (maintaining the relative standard of living)[15].

While there is universal consensus on the first goal, the second one, old-age income replacement, raises controversies in relation to its mandatory nature, the role of the state, income level etc, as will be explained more closely in later sections.

Table 2-1 **Basic Features of Pension System – Goals, Risks, Measurement**

Goal	Risk covered	Measurement/indicators
Poverty prevention	Earnings risk Risk of short and interrupted work histories	Minimum/social pension to average wage ratio Replacement rate for a below-average earner (e.g. below 50% of economywide average) Poverty and inequality indices
Income replacement	Longevity risk Myopia Time inconsistency	Average earner replacement rate: - Hypothetical - Actual replacement rate

Source: Fornero (2008) with author's amendments

2.3. Basic Pension System Indicators[16]

There are a number of pension system indicators in use. Which one to choose depends largely on what one wants to measure. As mentioned in the previous section, the pension system has multiple objectives, and therefore its various aspects need to be considered based on clearly defined indicators.

The most commonly used indicator in pension analysis is the *replacement rate*. However, despite the broad use of the term replacement rate, there is no strict definition and one can come across various ratios that are dubbed the replacement rate in literature. The replacement rate is usually defined as the ratio of *post-retirement income to pre-retirement income*. Defined in such a way, this is a micro/individual measure of old-age income maintenance. It can be calculated on the basis of hypothetical or actual earnings.

Hypothetical replacement rate indicates pension entitlements relative to the past earnings in a hypothetical situation of a worker who has spent a full career on average earnings – *base case*. This rate serves to depict the pension system design.

Hypothetical replacement rates can be calculated as *current* – for those retiring nowadays, or *prospective (expected)*, explaining what the pension system is designed to provide to future retirees.

What is the real level of old-age income replacement is indicated by the *actual replacement rate*. This measure reflects the complexity of an individual career – variation in length, earnings level, professional profile (leveled/flat or rising age-earnings profile) etc. Sources of data used for the calculation of the actual replacement rate could be survey data, as well as administrative data[17].

The average pension to average wage ratio is an aggregate indicator corresponding to the actual replacement on a macro-level. This indicator tells what the average living standard of pensioners is relative to the living standard of an average worker, under the assumption that wages and pension benefits are their main source of income. This macro measure captures the pension system design, but only to a certain extent. It reflects different general trends, such as the length of contributions, indexation of pensions in payment etc.[18]

[14] Barr, 2004

[15] Holzmann and Hinz, 2005

[16] This section relies on Stanic, K (2008) *Old-age Income Replacement by Pension System in Serbia – Measurement and International Comparison*, the Quarterly Monitor of Economic Trends and Policies in Serbia, No. 13, FREN (see the paper for a more detailed overview of indicators measuring the maintenance of relative standard of living)

[17] However, both sources in Serbia are quite limited and do not support calculations and regular monitoring of this indicator.

[18] In the case of Serbia, this indicator captures level and trends not only of old-age pensions, but disability and survivors as well.

Pension system design may be analyzed from the standpoint of maintaining absolute standard of living by using *social/minimum pension to average wage ratio*.

When calculated for various earning levels, hypothetical RRs can also be used to assess the level of redistribution of the system. If the replacement rate is the same for various earning levels, the pension system is said to be the Bismarckian type or earnings-related. System with high level of redistribution provides equalized benefits, so RRs vary considerably by earning levels. More formally, *the coefficient of variation of RRs* for various earnings levels can be used to assess redistribution – if the coefficient of variation is closer to zero, the system is more earnings-related; if the coefficient of variation is higher, the system is redistributive.

To what extent pension (or social assistance) system succeeded to maintain some absolute standard of living is suggested by indicators such as *retirement poverty risk, old-age poverty risk* (before and after social benefits), *inequality indices* etc.

3. Pension System Design

3.1. Basic Components of Pension System

According to basic objectives of the pension system – old-age poverty prevention (*providing the absolute standard of living in retirement*) and income replacement based on the standard of preretirement years (*maintaining the relative standard of living*), most countries either have or are evolving toward retirement income systems that contain three basic components[19]:

(I) Mandatory component that assures a minimum adequate income to the aged (absolute standard of living);
(II) Mandatory component that provides old-age income replacement with retirement benefit scaled either to prior earnings or pension contributions (relative standard of living); and
(III) Supplementary component on a voluntary basis (relative standard of living, typically for high earners).

The basic strategy that pension system should consist of these three components has a widespread appeal. The underlying financial strategy and management approach of the first and third components are not particularly controversial. Most of the controversy and polemics regarding pension system organization and reform revolves exclusively around the second element – mandatory component that assures a minimum adequate income to the aged.

(I) Mandatory component that assures a minimum adequate income to the aged

This component of the pension system seeks to ensure a minimum adequate income in retirement (maintaining the absolute standard of living). It is

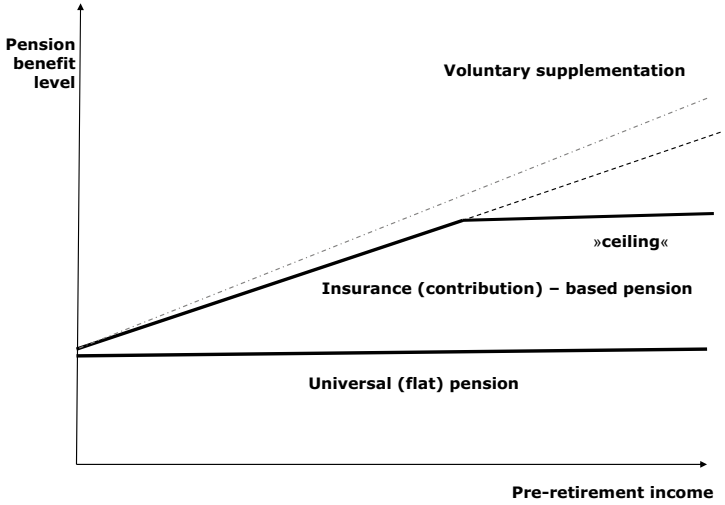
[19] Thompson, L.H. (2001), *Social Protection in Asia and the Pacific*, edited by Isabel Ortiz, Asian Development Bank

commonly called the redistributive element of the pension system[20]. All countries have it, typically in the form of a mandatory state (public) system.

There are two main approaches to organizing such systems – *universal/flat* and *fill the gap approach*[21].

In the *universal approach* all citizens above the statutory age receive budget-funded flat pension, often called the basic pension. It is a type of a social pension supplemented by earnings related part[22]. For example, in calculating RR for countries applying this approach, pension income includes both basic pension and earnings related part.

Figure 3-1 **Universal/Flat Approach**



Source: Thompson (2001), including amendments by the author

This means that other types of pension (and other) income do not affect the level of the basic pension, so it is often received even by those whose

[20] In all of his papers, Whitehouse refers to it as redistributive level or element. Redistribution is understood to mean redistribution between richer and poorer, or more precisely, redistribution from current workers to poor pensioners.

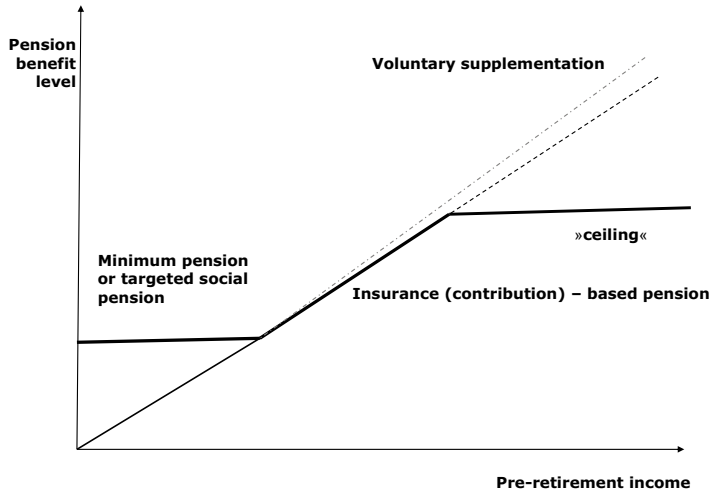
[21] Thompson, L.H. (2001), *Social Protection in Asia and the Pacific*, edited by Isabel Ortiz, Asian Development Bank

[22] Whitehouse (2007) mentions another type of universal pension paid only to those who used to be employed, based on the number of working years and regardless of earnings level.

absolute living standard is not jeopardized. However, it needs to be noted that such pension is typical of high income countries with global income taxation that eventually manages to smooth inequalities. On the other hand, such approach is also recommended to less developed countries that usually struggle with inadequate mandatory pension insurance coverage.

The other approach is a minimum that *fills the gap* between the benefit otherwise available and the minimum income level assuring an absolute standard of living. This minimum is purely a supplement, and is offered only to those whose benefits would otherwise be too low.
Under the "fill the gap approach" we may distinguish between *targeted social* and *minimum pension*.

Figure 3-2 **Fill the Gap Approach**



Source: Thompson (2001), including amendments by the author

Targeted social pension is financed from the budget, but unlike basic pension, it does not cover all the elderly, only the poor or those with inadequate pension income. There are three ways of targeting. First, benefits can be

pension-income tested[23]. Second, benefits can be broader-income tested. Third, broader means-tested – taking into account both income and assets. Some countries do not have specific, targeted programs for older people, i.e. social pensions, but poor older people are entitled to the same general social-assistance benefits available to the whole population.

Minimum pension is very similar to pension-income tested social pension and aims to prevent pensions from falling below a certain level. However, the institutional set-up, financing and eligibility conditions differ. Minimum pension is a part of pension insurance segment funded from contributions. Usually, retirees must have paid contributions for a minimum number of years in order to receive this benefit.

(II) Mandatory Component that Provides Old-Age Income Replacement

This earnings related component of the pension system seeks to ensure income replacement in old-age, i.e. to maintain the relative standard of living. In a wider context, it is considered social, i.e. pension insurance[24]. This component considerably varies across countries and is surrounded by controversies and debates.

The first difference lies in the scope/size of this level of the pension system. Its size is primarily indicated by the hypothetical replacement rate and ceiling up to which contributions are payable, which also sets a cap for future benefits[25].

Further differences arise from combinations of alternative solutions for several key *features/elements* of the pension system, mainly the following:

– Financing method: fully funded vs. pay-as-you-go
– Type of benefit: defined benefit vs. defined contribution
– Management: state (public) vs. private

[23] Sweden's guarantee pension is an example.

[24] The Whitehouse also uses that term (2005, 2007) However, DC cannot be classified as insurance, because the risk is borne by the beneficiary (methodological discussions)

[25] The common indicator, pension expenditures as a share of GDP, also takes into account some other relations - wage bill to GDP ratio, number of pensioners etc.

Financing Method - Fully Funded vs. Pay-As-You-Go (PAYG)

PAYG financing means the pensions are financed by contributions paid by the current generation of workers, who thus become vested in pension benefits financed by the future generations' contributions. To put it plainly, the so called pension funds established in such systems do not actually serve as funds, but merely as a kind of transfer accounts, at times filled by collected contributions and emptied at pensions disbursement.

Rate of return on contributions paid under a PAYG system equals average wage growth and population growth[26]. More precisely, *internal rate of return in a PAYG system* is equivalent to overall contributions growth rate – average wage growth and employment growth[27].

As opposed to PAYG system, there are funded systems in which collected contributions are invested in the capital market. Rate of return in funded systems equals net rate of return on securities in which the contributions are invested[28].

PAYG systems are typically state/public managed, while funded are associated with private management, although public systems may also contain a funded component.[29]

Despite the growing popularity of funded systems, public PAYG systems are still prevalent world-wide. Reasons for the erstwhile popularity of PAYG systems were the following: rapid population growth, a relatively young population, fast economic progress and the inception phase of pension schemes, contributing to rather high returns in the PAYG system, especially in first generations.

Some countries during the period tried to partially fund their public pension funds through creation of substantial capital reserves, by defining relatively

[26] Samuelson, P. 1958. "An Exact Consumption-Loan Model of Interest With or Without the Social Contrivance of Money." The *Journal of Political Economy* 6: 467–82.

[27] Some recent works suggest that this generally accepted definition of rate of return is imprecise, i.e. somewhat underrated, since it is also impacted by the rising life expectancy (e.g. Settergen, O. and Mikula, B. (2006) Chapter 7 in *Pension reform*, World Bank)

[28] Net in terms of excluding system-related costs

[29] For detailed account on these systems please consult: B. Mijatović and D. Hiber – Pension Insurance Capitalization in Serbia, CLDS, 2008

high contribution rates in early phases of the PAYG system, i.e. at the time when rates could be very low. While some countries succeeded in this (e.g. the USA), some other failed (e.g. some developing countries, due to poor reserve management at the time of inflation), whereas Serbia retained the classic PAYG system, maintaining quite low contribution rates even in the early phases which had to be progressively scaled up afterwards.

Meanwhile, demographic transition, PAYG system maturity and slowing down of economic growth coupled with wage growth deceleration, triggered significant drop in PAYG internal rate of return. At the same time, rates of return in the capital market were rather high. As a consequence, funded systems came to the forefront, especially in the mid-90s.

However, by the end of 90s the advantages of switching to funded systems started to be questioned.[30] There is an ongoing theoretical and empirical debate about the advantages and weaknesses of both financing methods, which will be discussed in more detail in *Section 6.*

Types of Benefits - Defined Contribution vs. Defined Benefit

There are two standard methods for determining individual pensions: defined benefit and defined contribution.

In the systems with defined-benefit schemes, the contribution rate is an endogenous variable, while the level of benefits is exogenous and determined by the previously defined formula. In theory, this assumes that the level of the contribution rate in future must be adjusted in order to ensure a fiscal equilibrium in the pension system. The key feature of this type of benefit is that the risk in such schemes is borne by the state i.e. sponsor of the pension scheme.

In such systems the benefit is related to years of contributions and individual earnings. The link to past earnings makes a defined benefit system a typical consumption smoothing tool.

[30] Among the first works, stand out Orszag, P. R. and Stiglitz, J. (2001) Rethinking Pension Reform: Ten Myths about Social Security Systems, in New Ideas About Old Age Security, Toward Sustainable Pension Systems in the 21st Century, The World Bank

Standard (traditional) defined benefit system relies on the accrual rate as the key parameter indicating the percentage of lifetime earnings that will make up the annual pension entitlement.

In addition to traditional defined-benefit system, there is a variation of this type of a system - a point system, which was introduced in Serbia. Point system formula has the same features as the one in the traditional DB system – it defines pension based on the years of service and earnings level. The difference concerns only the key parameters of the formula which in the latter case, as the title indicates, include points. One may say that the point system is somewhat simpler/easier to understand than the traditional one.

In defined contribution schemes, contribution rate is an exogenous variable, and the level of benefit is an endogenous variable. In this type of pension scheme, instead of being pre-set and known in advance, benefits depend on a prescribed (usually legislated) contribution rate and investment returns on the assets. Defined contribution is usually related to funded systems.[31] One of the most important features of the system is the fact that an individual bears the financial risk.

A recent variant of defined contribution system is called **NDC-notional defined contribution or non-financial defined contribution**. It is an accounting method simulating defined contribution method, but without funding. Pensions are still paid out from current revenues, with individual link introduced between the paid-in contribution and benefit.

Notional defined contribution method assumes that each contributor has his/her own savings account, recording contributions paid in on his/her behalf. However, these are merely accounting records, not the real money owned by the contributor, since the revenues are immediately channeled to current pension financing, hence the name "notional". The fact that such contributions do not generate returns in the financial market evoked an alternative name – *non-financial* defined contribution system. An interest rate, i.e. returns, is applied to the amount in an individual account, usually related to some economic aggregate – for example, wage growth, pension contributions growth, or GDP growth.

[31] Since defined benefit scheme is one of the elements of the model elaborated in this Study, it will be expounded at greater length in the Section 4 Model with Compulsory Individual Savings in Private Pension Funds.

The notional defined contribution system is therefore a version in between DC and DB – beneficiaries bear no financial risk, unlike in DC, but prospective benefit, rather than being directly earnings-related, as in DB, is linked to contributions.

Defined benefit schemes are mostly associated with public PAYG systems[32]. Private funded schemes used to feature DB and DC types of benefits, but have recently seen rapid shifts from defined benefit to defined contribution method.

The defined benefit method provides greater certainty (i.e. lesser risk) to pensioners. Namely, the insured know exactly what the amount of their pensions will be (in line with the known formula) and bear no risk, unlike the insured whose pensions are determined at the defined contribution method, and whose pensions are unknown, and therefore uncertain and risk-prone.

However, the certainty concerning the pension benefit in the defined benefit method is sometimes misleading, as the pension system burden is often passed on to the pensioner. Pension benefits, although predetermined by a formula, are often changed due to modifications in indexation, alterations in the pension law, etc. This makes the pensioner's position practically more uncertain than it is obvious.

The second important difference is link to past earnings. In that regard, the defined benefit scheme is more adequate consumption smoothing tool than defined contribution.

Finally, it is often noted that defined benefit systems are characterized by redistribution - transfer from those who have contributed more over their working life, towards those who paid less. Redistribution toward poor pensioners is mostly ensured through social or minimum pensions (which were covered in more detail in the previous section). DB system is probably associated with redistribution since it is characteristic of the public pension system which typically has organized redistributive pension level. In addition, the defined benefit more easily combines with some other redistribution tools, such as for example additional years of service for women, ten best

[32] However, not necessarily, as shown in NDC example. Even public systems are starting to link pensions to insured persons' contributions during their years of service, instead of earnings in years prior to retirement (Italy, Sweden, Poland, etc. which introduced NDC).

years of earnings (this is practically redistribution from richer to poorer), early retirement, accelerated years of service, etc. While that may be the reasons why redistribution is associated with defined benefit, there is essentially no special redistribution inherent in DB compared to DC system.

Public vs. Private Management

The main arguments in favor of private management, i.e. privatization of the pension system are corruption and inefficiency of the public system. Furthermore, the state is considered to be a bad investor.

Dilemma about public vs. private management usually occurs in conjunction with funding, while PAYG systems are typically state-managed.

However, funding in itself does not necessarily entail system privatization. State-managed funded systems are also feasible. A typical example is the so called capitalized funds (reserve/buffer funds)[33]. Individual accounts system can also be managed by the state, fully or in some phases. Different types of management may be combined across functions/phases of the management of individual accounts. For example, collection of contributions and/or administration of individual accounts may be the responsibility of the state, while other management functions, primarily investment are conducted by private financial institutions.

One may say that the issue of management is closely linked to system organization – centralized or decentralized. Typically, but not necessarily, public management is centralized, while private is decentralized. [34].

(III) Supplementary Component on Voluntary Basis[35]

The element of supplementary pension insurance or savings on a voluntary basis is usually associated with funded and privately managed schemes. There

[33] See B. Mijatović and D. Hiber – Pension Insurance Capitalization in Serbia, CLDS, 2008

[34] This subject will be further elaborated in the Section 4.2 System Organization

[35] This section is written based on EC-THE SOCIAL PROTECTION COMMITTEE (2008), Privately managed funded pension provision and their contribution to adequate and sustainable pensions, p 9

are two types of supplementary voluntary insurance/savings: occupational schemes and individual pension arrangements.

Occupational Schemes

Access to occupational schemes is necessarily linked to employment or occupation. Such schemes are normally established in one of the following ways:

- The scheme can be established by a collective agreement, which can make membership mandatory for a sector or across several sectors. This group includes schemes established by collective negotiation, where such schemes practically become quasi-mandatory[36]
- The scheme can also be established by a collective agreement without making participation mandatory neither for employers nor their employees
- The scheme can be established by a company-level collective agreement
- Based on employer's initiative who can promise pension entitlements recorded in the company's balance sheet (book reserves) or offer coverage under group insurance contracts concluded between the employer and insurance company or employer and pension fund.
- The employment status may give an employee access to certain types of pension provision to which he/she would otherwise have no access to (e.g. group schemes for trade union members etc)

Therefore, in addition to mandatory public pension insurance, through employment in a particular sector or company offering a pension scheme, employees gain membership in supplementary pension insurance/savings.

Individual Pension Arrangements

In such arrangements pension fund membership or purchase of annuities from an insurance company is not linked to employment or employer, which

[36] Such is the case in several countries, as will be further expounded upon in 3.2 Overview of Pension Systems in the World

of course does not imply that a member cannot be an employed person (though does not have to be). Hence, a beneficiary individually joins and saves in a pension fund or buys an individual annuity contract.

The main difficulty in analyzing such individual provision stems from the fact that it can be difficult to distinguish among different types of savings those that are clearly for retirement purposes (pension), given that long-term savings not specifically labeled as pension savings may be used for retirement, whereas part of the savings called retirement savings has lump sum payment option and may also be used for other purposes.

3.2. Overview of Pension Systems in the World

Nowadays there are a lot of different pension systems in the world, developed over the 20th century. It is easy to forget that today's differences largely stem from the way in which countries have initially set up their pension systems.

Considering the objective of the pension system set at its establishment, pension systems can be categorized, though broadly and rather roughly, into two basic types – pension systems named after Bismarck and pension systems named after Beveridge.

The goal of a **Bismarckian** public pension system is to provide old-age income replacement (maintain the relative standard of living), in addition to the minimum subsistence level for the elderly within the public pension system. This system is typical of continental Europe.

The central goal of a **Beveridgian** pension system is poverty relief in old age (maintaining the absolute living standard of pensioners). The Beveridgian type pension system is the redistributive PAYG public system. Some of the typical representatives of the Beveridge model do not even have an earnings-related component (for example Denmark, Ireland, New Zealand), and where it exists, its size is smaller compared to the Bismarck model (lower ceiling for pension contributions and/or lower replacement rate stemming from the mandatory public pension insurance). Private pension arrangements in the Beveridge model (primarily occupational schemes) have a much more

* Table 3 1 **Mandatory Pension Systems**

	First tier - redistributive			Second tier - mandatory insurance	
		Public		*Public*	*Private*
	Targeted	Basic	Minimum		
High-income OECD countries					
Australia	✓				DC
Austria	✓			DB	
Belgium	✓		✓	DB	
Canada	✓	✓		DB	
Denmark	✓	✓			DC
Finland	✓			DB	
France	✓		✓	DB + Pointsi	
Germany	✓			Points	
Greece	✓		✓	DB	
Iceland	✓				DB
Irland	✓	✓			
Italy	✓			NDC	
Japan		✓		DB	
Rep. Korea		✓		DB	
Luxembourg	✓	✓	✓	DB	
Netherlands	✓	✓			DB
New Zealand		✓			
Norway	✓	✓		Points	
Portugal	✓		✓	DB	
Spain			✓	DB	
Sweden	✓			NDC	DB + DC
Switzerland	✓		✓	DB	DB
United Kingdom	✓	✓	✓	DB	
USA	✓			DB	
Eastern Europe and Central Asia					
Bulgaria	✓		✓	DB	DC
Croatia		✓		Points	DC
Czech Republic	✓	✓	✓	DB	
Estonia	✓	✓		Points	DC
Hungary			✓	DB	DC
Latvia			✓	NDC	DC
Lithuania		✓		DB	DC
Poland			✓	NDC	DC
Slovakia			✓	Points	DC
Serbia			✓	Points	
Turkey	✓		✓	DB	
Latin America and the Caribbean					
Argentina		✓			DC
Chile	✓				DC
Columbia	✓				DC
Costa Rika	✓			DB	DC
Dominican Republic	✓				DC
El Salvador	✓				DC
Mexico	✓				DC
Peru	✓				DC
Uruguay	✓			DB	DC

Source: OECD (2007), Pensions at Glance and Whitehouse (2007), Pension Panorama, World Bank

***NOTE:** Countries without specialized social old-age programs (social assistance benefits), where poor older people are entitled to general social assistance benefits, are shown in the table in the targeted pension column. These are Germany, Czech Republic, Luxembourg, Italy.

important role in old/age income replacement than in Bismarck's. This model is typical of Anglo-Saxon countries.

Scandinavian countries had set up their systems as a mix of the Bismarck's and the Beveridge model. Therefore, their systems are sometimes categorized as a separate group of models – **the Nordic model.** In these countries, the public system, in addition to redistribution, provides for old-age income replacement to a great extent. However, private pension arrangements (i.e. occupational schemes), which cover almost all employees, significantly top up their income.

As illustrated in Table 3-1, all countries have a redistributive component (the first tier according to the terminology Whitehouse uses[37]) which is typically designed as a mandatory public PAYG system. This part of the pension system provides for a minimum or social assistance pension or some other type of benefit to poor older people.

All of the OECD countries have either targeted social assistance pensions or a general social assistance program which the elderly are entitled to use as well. Approximately half of the OECD countries and countries of Eastern Europe and Central Asia rely on one instrument to prevent old-age poverty, while the other half employ a combination of two or three schemes[38]. The minimum retirement income for workers in high-income OECD countries is around 30% of average earnings, while it amounts to about 20% in countries of Eastern Europe and Central Asia.

The mandatory pension system component which provides income replacement (mandatory pension insurance)[39] is present in almost all countries, except in Ireland, New Zealand, Denmark and the Netherlands.

[37] Please refer to Annex 2, Terminology of Pillars and Tiers, for details about terminology and classification.

[38] Whitehouse E. (2007), *Pension Panorama*, World Bank

[39] Second tier according to the terminology Whitehouse uses (Table 3-1)

Table 3 2 **Minimum Pension Benefit as % of Average Earnings**

Minimum pension benefit as % of average earnings				
	Targeted	Basic	minimum	Total (full service)
High-income OECD countries				
Australia	23	..	..	23
Austria	37	..	..	37
Belgium	23	..	38	38
Canada	16	14	..	30
Denmark	17	17	..	34
Finland	21	..	..	21
France	31	..	29	31
Germany	24	..	..	24
Greece	12	..	40	40
Iceland	25	..	..	25
Irland	28	31	..	31
Italy	22	..	..	22
Japan	19	..	..	19
Rep. Korea	30	..	..	30
Luxembourg	36	12	46	46
Netherlands	34	34	..	34
New Zealand	..	38	..	38
Norway	33	18	..	33
Portugal	20	..	44	44
Spain	..	..	33	33
Sweden	34	..	..	34
Switzerland	26	..	19	26
United Kingdom	26	20	13	33
USA	20	..	..	20
average	*26.5*	*23.0*	*32.8*	*30.7*
Eastern Europe and Central Asia				
Bulgaria	14	..	16	16
Croatia	..	11	..	11
Czech Republic	10	8	12	12
Estonia	14	7	..	14
Hungary	..	..	22	22
Latvia	..	..	33	33
Lithuania	..	17	..	17
Poland	24	..	..	24
Slovakia	..	..	22	22
Serbia		..	20	20
Turkey	6	..	28	28
average	*13.6*	*8.6*	*21.9*	*19.9*

Source: OECD (2007), Pensions at Glance and Whitehouse (2007), Pension Panorama, World Bank

Thus, for example, Denmark, with a typical Beveridgian system with a flat social pension for those above 65, has never introduced a public mandatory pension insurance system. However, there is a broad coverage of occupational plans in Denmark. Similarly to Denmark, there is no formal mandatory pension system in the Netherlands, but it does in fact exist as a quasi-mandatory scheme with coverage of more than 90% of employees.

Apart from the above-mentioned countries, in almost all OECD countries, as well as in Serbia, this component of the pension system is organized as a public defined benefit scheme, pay-as-you-go (PAYG) financed[40]. Classic defined-benefit schemes prevail, while 7 countries including Serbia have the so called point system (Germany, Croatia, Norway, Estonia, Slovakia, France). Four countries (Sweden, Italy, Poland and Latvia) have introduced notional defined contribution in their public systems (described in section *3.1. (II)*).

In Latin America and Eastern European countries, where reforms were conducted with the World Bank's support, funded defined-contribution schemes ran by private companies appeared lately as a part of the mandatory pension insurance (the mandatory component providing income replacement). In this way a new group distinguished itself, comprising slightly less than 20 countries. In addition to the existing PAYG system, they introduced a mandatory individual saving scheme managed by private pension funds – the so called World Bank model[41].

Consequently, public defined-benefit pension schemes dominate pension systems of high-income countries, while transition countries employ a combination of the schemes[42].

Only four high-income OECD countries have some kind of a statutory funded private arrangement, and it is usually very small in size. Three of them are defined-contribution schemes (Australia, Denmark and

[40] Of the 53 countries, 32 have public, defined-benefit (DB) plans, making that by far the most common form of pension insurance provision (Whitehouse, 2007, p.8)

[41] The continuation of the study will practically dwell on this model, this component in particular.

[42] Whitehouse E. (2007), *Pension Panorama*, World Bank, p.6

Sweden), while Switzerland has a specific system of defined credits, which resembles more a defined benefit scheme[43].

For example, as early as 1964, Denmark introduced a mandatory private funded pension scheme (ATP), similar to pillar II in the World Bank terminology. However, it is very small, both in terms of contributions and pension benefits it generates (Table 3-5). Contribution amount is set in absolute terms and is less than 1 percent of average earnings[44]. This scheme is distinguished by very law operating costs.

In 1998, Sweden introduced a small mandatory and funded top-up, with a contribution of around 2.5 percent (Premium Pension - PP). Financing transition costs did not pose a problem considering that the Swedish public system is partially funded (buffer fund)[45]. Management of the funded component is only partially assigned to private companies, and this is only in the investment phase, while the state agency (PPM) runs all other phases/functions[46]. Interestingly, more than 70 percent of the funds collected as Premium Pension are invested abroad.

On average, mandatory pension insurance in EU-15 countries provides an average earner with income replacement of approximately 80% of net earnings (including basic/flat pensions where applicable); slightly less in EU-8 (approximately 70%), while the percentage in Canada, USA, New Zealand and Australia is significantly lower (approximately 50%)[47]. Table 3-3 illustrates the net replacement rates for new entrants that will retire around 2050.

Observing privately funded schemes in high-income OECD and EU countries, it is noticeable that occupational schemes are far more prevalent than mandatory private arrangements, which practically do not exist in these countries, or are negligible. These schemes are often organized as collective

[43] Ibid, p.9

[44] Dimitri Vittas, A short note on the ATP Fund of Denmark, February 2008

[45] The concept of the transition cost has been explained in section *4.5.1.*

[46] Management of individual accounts in general and the specific organization of management in Sweden will be discussed in section *4.2. System organization.*

[47] As well as in the UK and Denmark which belong to this group of countries according to the nature of their pension systems.

Table 3 3 **Net Replacement Rates by Earnings Level**

	Individual earnings, multiple of average			
	0.5	**1**	**1.5**	**2.5**
High-income OECD countries				
Australia	77	52.4	43.1	31.3
Canada	89.4	57.1	39.5	25.1
New Zealand	77.1	39.5	27.9	18.2
USA	61.4	51	44.9	35.5
Average	***76.2***	***50.0***	***38.9***	***27.5***
EU-15				
Austria	91.2	93.2	93.5	63.2
Belgium	82.7	62.8	50.6	34.2
Denmark	95.6	54.1	42.5	30.8
Finland	90.7	78.8	79.2	79.3
France	98	65	58.7	53.4
Germany	61.7	71.8	79.2	54.2
Greece	99.9	99.9	99.9	99.9
Ireland	63	36.6	27.4	18.3
Italy	89.3	88.8	88.4	89
Luxembourg	125	109.8	105.6	100.1
Netherlands	82.5	84.1	85.8	82.8
Portugal	115.9	79.8	84.4	86.9
Spain	88.7	88.3	88.4	68.8
Sweden	90.2	68.2	70.1	75
Switzerland	71.4	67.3	53	34.3
United Kingdom	78.4	47.6	38.2	24.7
EU-15 average	***94.9***	***79.7***	***76.3***	***66.3***
Eastern Europe and Central Asia				
Czech Republic	67.1	75.2	74	52.9
Estonia	59.9	60.9	61.3	61.7
Hungary	86.6	90.5	99.1	81.8
Latvia	89.2	81.8	76.7	72.5
Lithuania	81.7	71.3	67.2	63.5
Poland	69.6	69.7	69.8	71
Slovak	58.2	60.2	63.1	*67.8*
Bulgaria	67.1	75.2	74	52.9
Romania	66.7	61.6	59.7	58.9
Croatia	66.7	61.6	59.7	58.9
average	***71.3***	***70.8***	***70.5***	***64.2***
Serbia 2008	**72.3**	**72.3**	**72.3**	**72.3**
Serbia 2047 (CPI since `09)	***39.2***	***39.2***	***39.2***	***39.2***

Source: APEX methodology (Pension Panorama, World Bank); for Serbia Stanić (2008)
NOTE: RR calculated for those entering labour market in 2002. That basically mean retiring in 2042-47, according to current legislation. For Serbia current replacment rate (2008) and prospective replacement rate for those retiring in 2047.

Table 3 4 **Occupational Scheme Coverage**

	High coverage-quasi-mandatory system	Medium coverage	Low coverage
Austria		✔	
Belgium		✔	
Canada		✔	
Denmark	✔		
France			✔
Germany		✔	
Greece			✔
Iceland			
Ireland		✔	
Italy			✔
Japan		✔	
Luxemburg			✔
Netherlands	✔		
New Zealand			✔
Norway			
Portugal			✔
Spain			✔
Sweden	✔		
Turkey			✔
United Kingdom		✔	
SAD		✔	

Source: OECD Global Pension Statistics.

(for an entire sector or several sectors), enabling the use of economy of scale, thus reducing administrative costs. Initially, occupational pension schemes were set up as DB schemes. However, there is a tendency to switch to DC schemes, noticeable over the last couple of years.

Occupational scheme coverage considerably varies across countries (Table 3-4). As a rule, there is no legal obligation for employers and employees to join pension schemes.

Three countries (the Netherlands, Sweden and Denmark) have quasi-mandatory pension schemes, where coverage is not statutory, but near-

universal coverage is achieved through central collective agreements. For example, occupational scheme coverage is 80-90% in Denmark, and more than 90% in Sweden and the Netherlands.

Sweden introduced occupational pension schemes back in 1970s. These pension schemes are distinguished by the sector where employees work. Therefore, there are four schemes – blue collar workers' scheme, white collar workers' scheme and the public sector: central and local government employees' schemes. Until recently, pension benefits in all four occupational schemes were calculated according to the defined-benefit method. However, as of 2007, it has changed to the defined-contribution.

The Swedish occupational plans are an important source of income replacement for high earners. For an average earner, more precisely for those earning not more than the amount covered by the public system (the so called "ceiling")[48],[1] occupational plans are just a small top-up on the public pension, amounting to approximately 10% of the total gross replacement rate[49].[2] An average contribution rate amounts to 3-4% of earnings. However, occupational plans are the main source of income replacement for the part exceeding the ceiling for workers who are earning more than that. For pay above the ceiling – up to 20 basis amounts, the occupational plan provides a (gross) replacement rate of 65%, and the contribution rate for this part is approximately 30%. Therefore, it is safe to conclude that occupational plans are first of all important because they ensure a certain standard of living for high earners, while for all the other retirees they are a small top-up. Furthermore, occupational plans are an important source of old-age income for privileged groups (beneficiaries entitled to special credits for their service).

In almost all EU countries the major share of pension income of an average earner is derived from the public PAYG schemes. Only in the Netherlands and

[48] The ceiling in the public system totals 7.5 base amounts. In 2008, this equaled SEK 307,500 (EUR 30,000) annually, which approximates an average wage. This information comes from several sources and differs from the information given in Table 3. The possible reason is that the average wage used in calculation of the replacement rate in Table 3 is higher than 7.5 base amounts (economy-wide earnings are not used as an indicator in Sweden).

[49] The total gross replacement rate includes the public system pension and the occupational scheme benefit.

Ireland is the income under a funded pension scheme significant. And these countries have never had a public pension insurance system (the typical Beverigde model). It is also quite significant in the United Kingdom, Sweden, Denmark, Germany and Belgium (Table 3-5), though to a slightly lesser extent than in these two countries. When we add the pension coverage to this information (Table 3-4), it ensues that the public PAYG system has a pivotal role to an average worker in almost all high-income countries.

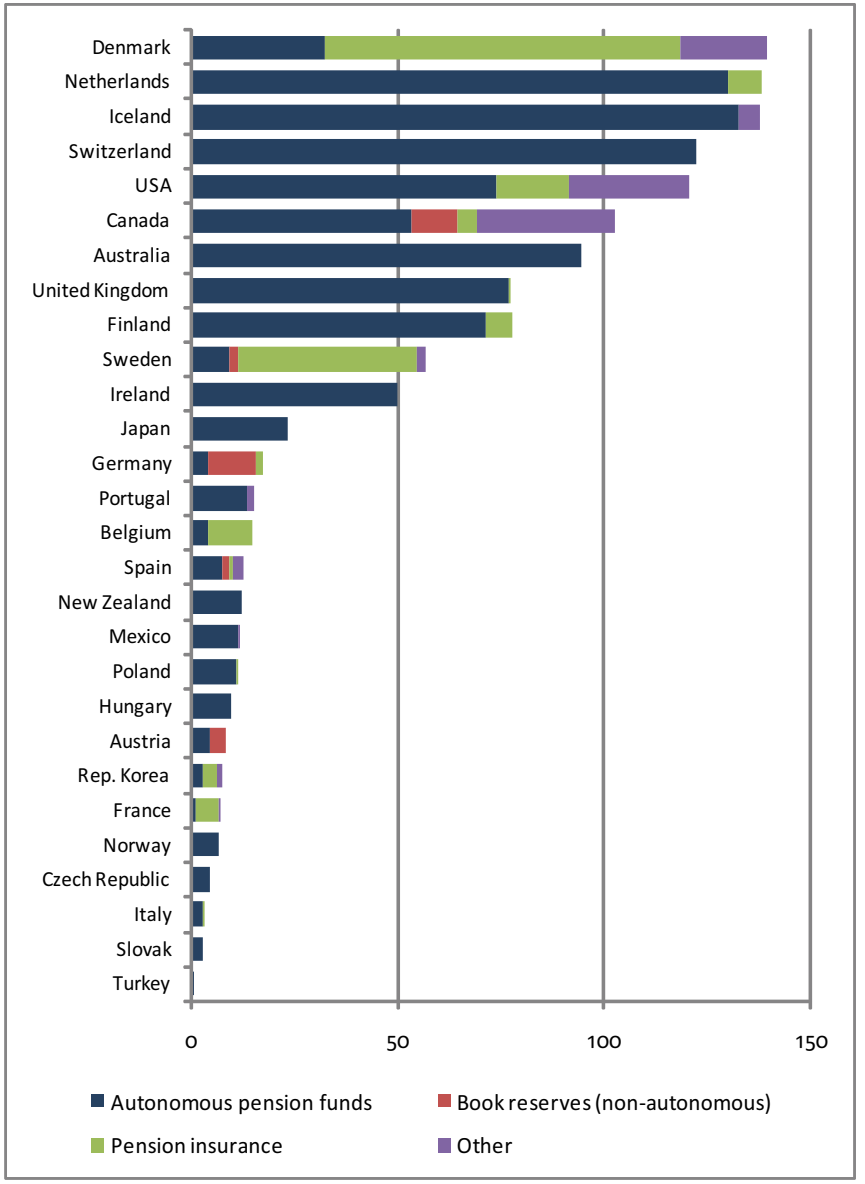
Table 3-5 **Contribution of Various Pension Schemes to Theoretical Replacement Rate**

	Current pensioners *(retiring in 2006)*			Future pensioners *(retiring in 2046)*		
	PAYG	funded	occupational	PAYG	funded	occupational
EU-15						
Austria	100%	..	..	100%	..	..
Belgium	91%	..	9%	80%	..	20%
Denmark	84%	6%	10%	75%	..	25%
Finland	100%	..	..	100%	..	..
France	100%	..	..	100%	..	..
Germany	90%	..	10%	75%	..	25%
Greece	100%	..	..	100%	..	..
Ireland	46%	..	54%	57%	..	43%
Italy	100%	..	..	80%	20%*	
Luxembourg	100%	..	..	100%	..	..
Netherlands	40%	..	60%	40%	..	60%
Portugal	100%	..	..	100%	..	..
Spain	100%	..	..	100%	..	..
Sweden	78%	..	22%	65%	12%	23%
United Kingdom	78%	..	22%	68%	..	32%

* A special scheme (TFR) serving as a severance indemnity payment scheme)
NOTE: Average earner with 40 years of service

Interestingly, it is anticipated that this proportion will be retained in the future as well. "While coverage of funded schemes is projected to increase

Figure 3-3 **Financing Vehicles Used in Funded Pension Arrangements (%GDP), 2006.**



Source: Pension Markets in Focus, Issue 4, OECD 2007

in coming decades, the share of pension replacement rates provided by those schemes is generally expected to remain constant. The share of occupational and voluntary pensions is expected to increase significantly in Germany (Riester pensions) and to a lesser extent in Belgium"[50].

All high-income countries have individual schemes - savings or annuity contracts. However, coverage is typically low within such arrangements.

Consequently, coverage of funded schemes across OECD countries is quite heterogeneous, as illustrated in Figure 3-3. The accumulated capital in private pension schemes varies considerably from country to country. In 2006, countries with the greatest accumulated assets (more than 100% GDP) were Denmark, the Netherlands, Iceland, Switzerland, US, Canada, while at the same time many countries had accumulations of not more than few percents of GDP.

The latest researches show a steep decline of pension assets viewed against the backdrop of the ongoing global financial crisis. In the period between January and October 2008, private pensions in the OECD have registered losses of nearly 20% of their total assets (about USD 5 trillion).[51]

3.3. Serbian Pension System[52]

Mandatory pension and disability insurance in Serbia is based on the PAYG financing, as a safeguard against three main types of risks: old age, disability and spousal survivor risks[53].

As in most of the OECD countries, there are two components within the mandatory public pension system – redistributive and old age income

[50] EC-The Social Protection Committee (2008), **PRIVATELY MANAGED FUNDED PENSION PROVISION AND THEIR CONTRIBUTION TO ADEQUATE AND SUSTAINABLE PENSIONS, p.20**

[51] Pension Markets in Focus, Issue 5, OECD 2008

[52] This section has been written based on the background paper of Ms Gordana Matkovic, PhD. *Characteristics of the Pension system in Serbia, USAID/SEGA and CLDS.*

[53] This study focuses on old-age pensions that is, old-age insurance.

replacement[54]. The mandatory component providing the minimum adequate old-age income (absolute standard of living) is based on the *minimum pension*. The component providing replacement of old-age income is set up on the *point system*. Since end-2006, voluntary pension saving in private pension funds has become a part of the system.
Such a design of the pension system is a result of a comprehensive reform conducted in the period 2001-2003. However, certain changes were introduced at the end of 2005 as well.

The pension system component providing the absolute standard of living in Serbia is achieved by the minimum pension. If pension benefit falls under the statutory level, a fully vested contributor is entitled to the minimum pension. The retirement eligibility criteria are comprised of the relevant retirement age and the minimum years of service.[55]

Currently, the minimum pension in Serbia is somewhat higher than RSD 11,000, *approximately 20% of an average gross salary.* As a part of the statutory changes conducted in the period 2001-2003, a uniform minimum pension was guaranteed (20% of average wage), replacing different-level minimum pensions which reflected the length of service. As a result of the changes at the end of 2005, the minimum pension was increased formally to 25% of wage, however, because of the biannual indexation, it spanned between 20-22%. If the minimum pension falls under the 20% threshold by 2011, an extraordinary indexation is planned. The level of the minimum pension lies within the averages of the minimum or social pensions in the region, and it is somewhat lower than the benefits of the same type in high-income countries (Table 3-2).

When it comes to the absolute living standard of pensioners "in 2007, poverty index for pensioners was 5.5%. The value of the index is statistically significantly lower than the general population poverty index (6.6%). In 2002, pensioners were under a higher poverty risk than the average population. The poverty index of pensioners totaled 15.9%, statistically significantly

[54] Compulsory insurance covers employees, employers, the self-employed and the farmers. Until recently, insurance was organized into three separate state funds, which have been consolidated administratively since January 1, 2008, while the complete merging of the funds is planed for 2011, according to the statutory solutions.

[55] The same goes for the disability pension.

higher than the general population average (14.0%). Hence, it is safe to conclude the trend regarding pensioner poverty reduction in the period 2002-2007 is more pronounced than with the general population"[56].

When it comes to the ***design of the old-age income replacement pension tier***, the traditional defined-benefit system was reformed in April 2003, when the so called *point system* was introduced. The calculation of pension benefit takes into account the entire working service and income of not more than five average wages. The point system is very transparent and closely links life-time earnings with pension benefits.

The pension benefit level is calculated by multiplying the number of personal points and the general point value on the day of becoming fully vested. The personal point is determined according to the length of service and the level of paid contributions approximated on the basis of the personal wage to average wage ratio in applicable years i.e. years of contribution. The nominal value of pensions is determined by multiplying personal points by the general point, which was designed to ensure, on average, an equal level of pension benefits of both old and new pensioners. The law stipulates the general point should be indexed in the same way as pensions, in order to eliminate the differences among pensioners with the same service history, regardless of the moment they retired.

Instead of the "10 best years", the entire service is taken into calculation, strengthening the link between the level of pensions and paid contributions, and eliminating redistribution towards those who either had a career breakthrough, or had significantly higher earnings just in one part of their career history. Furthermore, the method increases and more precisely determines differences in pension levels stemming from the length of service. The new 2003 law also envisages increases of retirement entitlements for persons who have worked for more than 40 years, which was not the case earlier, aiming to encourage employees to work as many years as possible.

[56] David-Baronijan, H. (2008), „Siromaštvo među penzionerima i starim licima sa 65 i više godina" (Poverty among pensioners and old persons above 65 and more years of age), *Research conducted for the Deputy Prime Minister Team for Implementation of the Poverty Reduction Strategy*, The Statistical Office and the Ministry of Science and Technological Development of the Republic of Serbia, Belgrade

[55] Such as Germany, France (in part), Norway, Croatia, Estonia and Slovakia;

The statutory changes also expanded the mandatory pension insurance coverage. The obligation of paying contributions was introduced for short-engagement compensations (such as royalties and special service agreements), as well as for the work performed through student and youth cooperatives, except for those younger than 27 who are full-time students. Arrangements through service contracts and cooperatives were a widespread practice for contribution avoidance. This brought about increases in pension fund revenues and equity to the system.

The law also introduced a possibility for those who opted so, to contribute to the pension insurance system regardless of their employment or ownership status. In this way, a voluntary pension insurance option was introduced into pillar I. The method used for calculating pensions for special merit categories was also reformed; it became more explicit and less privileged.

The new method employed for pension calculation, point system, provides a close link between paid contributions and the future pension. In that sense, it could serve as an incentive against gray economy and/or provide perception of contributions as savings rather than taxes. However, the problem is the public is not adequately acquainted with the characteristics of the Serbian pension system, and people are frequently under misapprehension about the pension system[57].

The indexation method of general point and pensions in payment has also been changed on a number of occasions following the year 2000. After the wage-indexation which was applied until 2001, quarterly indexation was introduced combining equal weights: increase in wages and costs of living (50%:50%, the so called Swiss formula). Subsequently, the wage weight was gradually decreased by 2005 changes, while *it was planned to index pensions to costs of living only, as of 2009*[58]. As of the end-2005, pensions in payment have been adjusted twice a year.

[57] Misconceptions about the pension system in Serbia were discussed in the presentation given by Ms Gordana Matkovic, PhD at the conference "Pension system reform in Serbia", CLDS, November 2008.

[58] Due to the extraordinary indexation of 10% at the end of 2008 and the global economic crisis, it has been decided not to adjust the pensions during 2009 at all.

The net replacement rate – the amount of the first pension relative to the last salary– for those who contributed full service, equals somewhat above 70% of the last salary (Table 3-3). In the international context, the replacement rate is currently at the EU-10 countries' level, and it is somewhat lower than in EU-15. In the long run, however, the replacement rate in Serbia, calculated on the basis of current legal provisions, is significantly lower than in all other European countries, even when compared to countries with typical Beveridgian systems. This is a consequence of the general point indexation to costs of living only, which is a solution not to be found in any other country. Concurrently, separation of general point indexation and pensions in payment would give rise to substantial inequalities[59].

The replacement rate in Serbia does not differentiate between various levels of earnings (that is, it is different only for those who earn more than five average salaries), which speaks about the nature of the system where a person's pension benefit is related to his/her lifetime earnings (*earnings related system*).

According to 2008 data, the *average pension* stood at approximately 19 thousand dinars for pensioners of the self-employed and of the employee pension insurance, while it was somewhat more than 7 thousand for retired farmers. However, a significant percentage of pensioners from the employee pension insurance – approximately 60% - receive below-average retirement benefits.

Average pension relative to average wage ratio was 58% in 2008. Bearing in mind the hypothetical replacement rate of approximately 70%, one could expect a higher ratio.

There are several reasons why the ratio is quite low. Firstly, it should be noted that the average pension includes not only old-age pension, but disability and survivor pensions as well. Disability and survivors` share is high, and these benefits are, according to the nature of this type of insurance, lower than old-age benefits. In 2007, the total number of pensioners outstripped 1.5 million.[60]. *Old-age pensioners, although the most numerous, participate*

[59] For further details refer to K.Stanić (2008), "Old-Age Income Replacement by Pension System in Serbia – Measurement and International comparison", *Quarterly Monitor of Economic Trends and Policies in Serbia*, No.13, FREN

[60] Most of contributors and pensioners belong to the employee pension insurance – more than 80%.

by slightly more than 50% in the total number of pensioners. Participation of disability pensioners is 24% and remains overly high, partly owing to the past extremely liberal criteria for disability retirement[61].

Furthermore, the number and share of full-career workers who have really "earned" their pensions, is not high in Serbia. Not more than 223,000 pensioners of the employee insurance have more than 40 years of service, i.e. 35 years of service for women. Their share in old-age pensioners amounts to 37.8%, and in the total number of pensioners (of the employee pension insurance) only 17.6%. Among these pensioners, even those who earned their pension entitlements under special conditions are taken into account.

If data concerning old-age pensioners and especially those with full careers[62] are analyzed separately, a different end result is obtained. Pensioners of the Employee Fund who have worked not less than the full service, received on average a pension benefit that amounted to 90% of average wage in 2006.

According to the current statutory solutions (from 2005), the retirement age is going to gradually increase. In 2011, it will be 60 years for women and 65 for men, with at least 15 years of service. This retirement age has been set following numerous changes in law after 2000. The retirement age in earlier regulations was five years lower, determined by the old 1965 law. It has not been changed for 35 years, in spite of the rising longevity, better healthcare and general working and business conditions. One of the key reform initiatives in 2001 was the retirement age increase from 55 to 58 years for women, and from 60 to 63 for men (concurrently, the minimum pension eligibility age was increased from 50 to 53 years of age).

The contribution rate for pension and disability insurance is 22%. Pensionable income – the base according to which contributions are calculated – is gross wage for employee insurance, while for the self-employed and farmers it is taxable income i.e. the amount for which taxes are paid. International comparison of contribution rates is more complicated than usually thought

[61] These figures, however, are not relevant for international comparison considering that in most of other countries disability retirees are categorized as old-age pensioners as soon as they meet the old-age pension eligibility criteria – as soon as they reach the statutory retirement age.

[62] Men 40, women 35

and surpasses the scope of this Study[63]. Nonetheless, the preliminary general comparisons demonstrate that the contribution rate is not high viewed in international context. It is actually lower than in other transition countries, especially bearing in mind that it covers all three risks, not just the old-age) and other benefits (such as carer's allowance) in addition to the health insurance of pensioners[64]. Moreover, it should be noted that the contribution rate is a variable determined not only by aspects of the pension system, but of the labor market as well – employment and earnings level, which are unfavorable in Serbia.

One of the misconceptions regarding the Serbian pension system concerns the way it is financed – *the PDI Fund deficit* issue. In addition to failing to distinguish between the PDI deficit and the pension system deficit, which is a separate topic[65], the very notion of the deficit within a DB system is actually an indicator which has little sense. As already pointed out on several occasions, the point system is a type of the defined benefit system. In DB system, the contribution rate is an endogenous variable, while the level of pension benefits is exogenous and defined by a known formula. Therefore, the contribution level is determined in such a way which enables financing of pension insurance by liabilities. Consequently, the pension system deficit in essence bears no significance; rather, it is more adequate to analyze the level of contributions. This is especially so, because the contribution rate has been initially set rather arbitrarily with an aim not to over-burden salaries. Even in 2001, when set, it was not sufficient to cover liabilities, which immediately created the need for budgetary transfers.

When it comes to the ***supplementary component on a voluntary basis***, voluntary savings in Serbia originated within insurance companies and based on the Insurance Law back in 2001. Formally, this component of the pension system was not regulated before 2005. The concept of specialized

[63] Comparison with other countries should be based on the OECD methodology, and not the contribution rates expressed as percent of gross wage. Furthermore, it is important to bear in mind that many other countries have budget transfers financing deficits, as well as social pensions which are typically not financed from contributions.

[64] Most of the countries do not cover health care of pensioners by pension contributions. In transition countries, for example: Hungary, Slovakia, Czech Republic, Romania, Bulgaria, Croatia, Lithuania, Estonia.

[65] See: J. Bajec and K.Stanic (2005), "What is the Real Pension System Deficit in Serbia?", Quarterly Monitor of Economic Trends and Policies in Serbia, No.13, FREN, p. 2

pension companies managing pension funds` assets, without engaging into any other activity, is applied. The system is regulated and supervised by the National Bank of Serbia. First pension companies received licenses in 2006. The law stipulates maximum fees (3% front-end load cap and 2% for asset-under-management fees).

This component of the Serbian pension system is still in its infancy, with the total number of approximately 155,000 contributors (at the end of 2008), out of which only 65 thousand are regular contributors[66].

Funds are permitted to invest in a limited number of options (investment limits) set forth in statutory provisions. The portfolio structure is very unfavorable – most of it is invested in government securities and kept with a custody bank. As a direct repercussion of the financial crisis, the structure has deteriorated even more. Consequently, pension funds keep more than 50% of their assets in custody bank accounts.

Finally, it is also necessary to mention that during the period when the pension reform was conducted (2001-2003) the possibility of designing the pension reform following the model of other transition countries was considered. The intended end-result was to avoid the system resting only on the pay-as-you-go financing of pensions, as the only pillar of the system, and to introduce pillar II and pillar III (using the World Bank terminology) as well.

The idea of an express introduction of pillar II was discarded for a number of reasons. In circumstances where huge debts to pensioners were inherited, in addition to an already high pillar I deficit, it was estimated the transition cost of introducing pillar II would be overly high. There was no space for financing the transition cost neither by pension cuts, nor by contribution increases, which already over-burdened the wages. Furthermore, projections were made that the opportunity costs of financing the transition cost from privatization revenues would be high, bearing in mind the numerous alternative purposes.

The other important reason was certainly the underdevelopment of the

[66] An active contributor is a person who has paid the contribution in its individual account in the last month of the observed period, (NBS, Voluntary Pension Fund Department, Report Q3 2008).

financial markets in Serbia and the fact that funds would have poor investment options. In addition, at the time, not only did the state lack administrative capacity to conduct supervision and control, but there was also a very important impediment - the general lack of trust and reluctance to save, even in banks. It was politically incorrect to force people to save compulsorily in private funds, taking into account the hyperinflation experience, seizure of foreign currency deposits, the Ponzi schemes, all supported vigorously and officially by the state itself.

At last, at the time, the first doubts occurred about end-results of pillar II and first analyses unconvincingly presented its advantages and experience of other transition countries.

4. Model with Mandatory Individual Savings in Private Pension Funds

What is usually considered the "recipe" for pension reform in Serbia is the so-called three-pillar model of the World Bank. The main features of the model are mandatory private pension funds that exist alongside the PAYG system and voluntary private savings. The component of mandatory individual savings in private pension funds is often referred to as the *system of individual accounts*.

Although even the World Bank has revised its model, it is still widely believed in our country that pension system reform has not been implemented because "all three pillars" do not exist. In this part of the study, we will present the history of the model and elaborate on some of its main features.

Following the model of Chile that conducted privatization, i.e. liquidation of the public pension fund in 1981, and replaced it with the system of mandatory private funded funds, the World Bank designed its own pension reform model – the system with *three main pillars* whose advantages were illustrated in the study *Averting the Old Age Crisis* (1994)[67]. The model consists of the following pillars:

First pillar – Mandatory public pension

The first pillar is a mandatory, pay-as-you-go, defined benefit pillar, financed by contributions or general taxation. The pillar is publicly, i.e. *centrally* managed. This pillar serves the redistributive function – intergenerational solidarity.

Second pillar – Mandatory private pension

The second pillar represents mandatory savings managed by private pension

[67] See: *Averting the Old Age Crisis, Policies to Protect the Old and Promote Growth,* The World Bank and Oxford University Press, 1994.

funds. Management of the second pillar is usually *decentralized* to private companies. Second pillar pension is based upon the *defined contribution* system - pension benefits depend on the contribution rate and the capacity of the selected fund to additionally increase these contributions through investment returns,, while the risk is borne by the beneficiary[68].

Third pillar – Voluntary private pension

The third pillar comprises voluntary savings managed by private pension funds i.e. companies. It supplements first and second pillar pensions. Financial risk is also borne by the beneficiary.

Relying on the Chilean experience, other Latin American countries also reformed their pension systems. The World Bank study *Averting the Old Age Crisis* appeared at the time when countries in Central and Eastern Europe and the former Soviet Union carried out extensive structural reforms trying to adjust their economies and society to the free market concept. The World Bank played a very active role in initiation and provision of financial and professional support to pension reforms in countries of Latin America and Central and Eastern Europe.

As illustrated in Section 3.2, such pension systems can be found only in several countries in the world where the World Bank and other financial institutions played a prominent role – in Latin America and Central and Eastern Europe (Hungary, Slovakia, Poland, Estonia, Latvia, Kazakhstan[69], Ukraine, Croatia, Bulgaria, Romania, Kosovo, Macedonia).

At the time of pension reform in Serbia, the possibility of designing the system following the model of other transition countries was considered. The aim was to avoid reliance on PAYG financing as the only pillar of the system, and to introduce second and third pillars as well. The idea of swift introduction of the second pillar was abandoned for several reasons that we mentioned in the previous Section.

[68] As the PAYG system was definitely abandoned in Chile, this country introduced the institute of guaranteed return. Originally, the World Bank did not envisage such form of protection in its three-pillar system, but some countries introduced certain guarantees (in the form of guaranteed return).

[69] Besides Chile, Kazakhstan is the only country that has fully replaced the PAYG pillar with the second pillar.

Such cautious approach seems to have been justified because the World Bank itself, after more than one decade of experience in applying the three-pillar model in some countries, has become more flexible in proposing concrete solutions in its recent reports (2005 and 2006)[70].

The World Bank's main message today is that country-specific conditions should be taken into account in attempts to solve the crisis of mandatory public pension system. The World Bank no longer considers its model a blueprint of reforms that client countries should implement, but a benchmark that should account for specific circumstances in a given country, including the volume and characteristics of the existing public model, administrative capacities of the Government, fiscal and other economic and social circumstances. What is even more important and interesting, the World Bank has responded to criticism of theoretical and empirical nature, and has relativized and somewhat changed its conceptual suggestions. In countries with a large unfunded PAYG system with high population coverage and substantial implicit pension debt[71], such as Serbia, the soundness of switching to the second funded pillar is no longer undeniable. The report states that "the net benefit of major progress towards funding does not have to be positive"[72].

Instead of the three-pillar model, the World Bank proposes the *five-pillar framework*:

(o) ***Zero pillar*** – all aged citizens (e.g. after 65 years of age) receive a basic or social pension (e.g. at the level of 20-25% of average earnings);
(I) ***First pillar*** – mandatory public pension component financed in the usual way - through contributions and on a pay-as-you-go-basis;
(II) ***Second pillar*** – mandatory saving in private pension funds;
(III) ***Third pillar*** – voluntary saving in private pension funds, including individual savings and occupational schemes;
(IV) ***Fourth and fifth pillars*** – provide for additional social security and other forms of assistance to the aged who are particularly vulnerable.

[70] J. Bajec, *The World Bank Model – Three or Five Pillars*, Business and Finance.

[71] The implicit pension debt represents the sum of obligations of the state (and its pension fund) towards active insured members for pension rights that they have already acquired (years in service and contribution payments), and towards retirees in respect of pensions that they should receive until the end of their lives.

[72] *Old Age Income Support in the 21st Century*, The World Bank, 2005, p. 50.

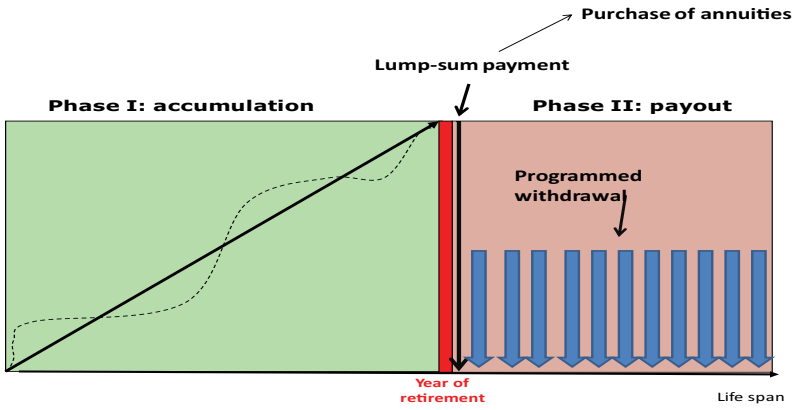
The World Bank has redesigned its basic/initial three-pillar model to the *five-pillar framework*. This does not mean that the World Bank insists on applying all five instead of three pillars. Instead, each country, given its specific conditions, should opt for the most favorable solution regardless of the number of pillars.

In continuation of the text, we shall explain some of the main elements of the so-called second pillar and specific circumstances regarding its introduction.

4.1. Defined Contribution

Each private pension scheme contains two separate phases – the accumulation phase and the payout phase. The end-result of the pension scheme – the level of pension, depends on the end-results of both these phases.

Figure 4-1 **Cycle of Defined Contribution Pension Scheme**



In a defined contribution system, these two phases are separated. During the accumulation phase, the fund member pays a defined contribution. These funds are invested and, together with the return, accumulated in the member's individual account. The level of pension benefits depends on the

level of contributions made, investment returns earned and the level of fund costs i.e. charges. Financial, i.e. investment risk is borne by the fund member.

This is practically the most important difference between defined contribution and defined benefit schemes where the risk is borne by the sponsor of the pension plan (the state or the employer in case of occupational plans). It means that by a massive shift from DB to DC schemes, the risk is not eliminated, but transferred from the sponsor to the individual beneficiary.

The consequences of complete "transfer" of financial risk to an individual may be rather dramatic, which is especially evident in the current financial crisis. It is therefore not unusual for a state to take over a portion of risk in the form of guaranteed minimum pension or guaranteed minimum return (Table 4-1).

Following the accumulation phase when the fund member becomes entitled to pension, the payout phase takes place. Most countries that have introduced private pension funds focus more on the accumulation phase, because the payout phase is more complex, and there are practically no beneficiaries at the time of inception of private funds. Policymakers therefore place a priority on the need to ensure that the accumulation phase is administratively efficient and well regulated. "But for a successful new pension system the decumulation phase must also be well organized and efficient"[73]. Because individual accounts in most countries are relatively new, very few are currently paying out significant sums to retirees. Policy-makers have therefore not yet faced some of the serious challenges associated with the payout stage, which can become particularly complex.[74]

There are three main options available for the withdrawal of accumulated funds in the payout phase: lump-sum payments, programmed withdrawals, and purchase of annuities. A combination of these three options is also possible.

[73] Estelle James and Dimitri Vittas, *The Decumulation (Payout) Phase of Defined Contribution (DC) Pillars: Policy Issues in the Provision of Annuities and Other Benefits*, *World Bank Policy Research Working Paper No. 2464*, World Bank, 1999.

[74] Murthi, M., Orszag, J.M and Orsayag, P.R. (1999), *Administrative costs under a decentralized approach to individual accounts: lessons from the United Kingdom*, Discussion Paper, Birkbeck College, London.

Table 4 1 **Statutory Requirements for Mandatory Private DC Schemes**

	Guaranteed minimum return
Europe	
Bulgaria	✓
Croatia	✓
Estonia	×
Hungary	✓
Latvia	..
Lithuania	..
Poland	✓
Romania	✓
Slovak	...
Switzerland	✓
Latin America and the Caribbean	
Argentina	✓
Bermuda	×
Bolivia	×
Chile	✓
Columbia	✓
Costa Rika	×
Dominican Republic	✓
El Salvador	✓
Mexico	✓
Peru	✓
Uruguay	✓
Asia and Pacific	
Australia	×
Hong Kong, China	×
Kazahstan	✓

Source: Complementary and Private Pensions throughout the World, OECD/ISSA/IOPS, 2008.
NOTE: "x" means there are no statutory requirements, whereas ". . ." indicates there are no data.

The choice among them depends on the balance to strike between flexibility and protection from longevity risk. Only annuity provides for longevity insurance and protects from myopia (which are the main arguments for mandatory pension insurance), while lump-sum and programmed withdrawals are rather flexible, but do not offer any kind of insurance.

In defined contribution schemes based on the purchase of annuities, the payout phase resembles defined benefit systems. When purchasing annuities, the risk from the individual beneficiary is shifted to the insurance company. There are different ways of buying annuities: depositing the single premium lump-sum, gradual purchase of annuities during the career, or lump-sum purchases with deferred annuities. "A defined benefit pension plan can in some ways be viewed as an example of slowly accumulating annuity"[75]. In defined contribution systems, the annuity is purchased by a lump-sum payment. The annuities market is replete with problems both on the supply and demand side. It is very expensive (for more detail see Section 4.2) even in developed economies. Annuities markets in developing countries are particularly problematic, i.e. underdeveloped.

There are numerous dilemmas regarding the design of this phase: Should annuitization be mandatory?; Who can offer annuities (separate legal entities or life insurance companies)?; Should annuities be indexed and how (nominal vs. real annuities)? Should unisex life tables be applied?, etc.
These are the issues still awaiting good or best practices[76].

4.2. System Organization

The first question to be asked in organization of an individual accounts system is who will manage the system. The choice can be narrowed down to a government institution/agency vs. private companies. This is directly related to the dilemma over centralized vs. decentralized management, where centralization is usually associated with a government institution, and decentralization with private companies, although centralized management can be carried out in combination with a private agency.

[75] Brown, J, Mitchell, O., Poterba, J. and Warshawsky, M. (2001), *The Role of Annuity Markets in Financing Retirement*, MIT Press.
[76] Holzman, R. And Hinz, R. (2005), *Old-Age Income Support in the 21st Century*, The World Bank, p. 114.

The next important question regards private companies – should these be financial institutions that specialize exclusively in management of individual pension accounts, or this task can be entrusted with some other existing financial institutions.

The majority of Latin American and Central Eastern European countries that reformed the system under the auspices of the World Bank, adopted a model of open-ended and specialized funds, with either centralized or decentralized contribution collection and record keeping systems. These models have produced relatively high management fees.[77]

Centralized vs. Decentralized Management

Management of individual accounts comprises the following functions:
– Contribution collection;
– Record keeping;
– Reporting and marketing;
– Investment;
– Benefits payment.

The dilemma over centralized vs. decentralized management may regard each individual function, which means that management of the individual accounts system may be wholly or partially privatized. The centralization/ decentralization issue is usually raised in relation to contribution collection and record keeping functions, whereas investment and benefits payment are usually entrusted with private companies, at least in countries that introduced individual accounts under the auspices of the World Bank.

The main argument for centralized collection contribution and record keeping is cost reduction and easier control of the collection process.

The main argument for decentralization is a greater choice for the member. Decentralized contribution collection and record keeping is much quicker to implement, which was probably the main reason why some countries opted for such a model (e.g. Hungary). However, such a model is very complicated

[77] Rutkowski, M, *Key issues in debates on modern pension systems*, World Bank.

for the employer. Instead of having to deal with one or two potential collectors (tax and social insurance agencies), employers must sort out second-pillar contributions among a larger number of second-pillar companies[78]. Furthermore, decentralization leads to higher costs because the effects of the economies of scale are lost.

An interesting specific example is management of the Swedish Premium Pension. Apart from investment, all functions in Sweden, including the annuities payment, are centralized and entrusted to the government agency – PPM.

Centralized management enables the use of economies of scale, whereby costs are reduced and marketing expenses of private financial institutions are completely avoided due to the so called "blind account". The PPM intermediates between employees who pay contributions and financial institutions that only obtain the information on the total investment of pension contributions, and not who the individual investors are. In addition, the PPM calculates and pays out annuities.

Such a centralized management system, and particularly the principle of "blind accounts" enables saving and economies of scale in the investment phase as well. As a big investor, the PPM receives a discount from financial institutions on the customary investment fee, and investment costs therefore equal, on average, around 0.4% of total assets. As even such costs are considered rather high in Sweden, effort is invested in their further reduction.

As regards administrative fees, it is interesting that the PPM, although significantly cheaper than it would be the case if private companies managed the system, has not realized the expected savings. The fixed administrative fee charged by the PPM is of 0.3% of assets (0.2% in 2008), which is rather high compared to some other relatively similar schemes. For example, the administrative cost of the US government's Thrift Savings Plan equals mere 0.1 percent of assets[79]. However, the PPM also pays out annuities within this fee, which implies that the saving is much higher than initially thought.

[78] Holzman, R. And Hinz, R. (2005), *Old-Age Income Support in the 21st Century*, The World Bank, p. 118.
[79] Sunden, A. (2004), *HOW DO INDIVIDUAL ACCOUNTS WORK IN THE SWEDISH PENSION SYSTEM?* An issue in brief no. 22, Center for Retirement Research at Boston College.

Table 4-2 **Centralized vs. Decentralized Management of Contribution Collection and Individual Accounts Record Keeping**

	Collection of contributions		Record keeping	
Countries	Centralized vs. Decentralized	Who collects contributions?	Centralized vs. Decentralized	Who keeps records?
Zemlje Latinske Amerike				
Argentina	Centralized	Federal Administration of Public Income (AFIP)	Decentralized	Pension companies
Bolivia	Decentralized	Pension companies	Decentralized	Pension companies
Columbia	Centralized	Banks and information operators	Decentralized	Pension companies
Chile	Decentralized	Pension companies	Decentralized	Pension companies
Costa Rika	Centralized	Social Security Institution (CCSS)	Centralized	Social Security Institution (CCSS)
El Salvador	Decentralized	Pension companies	Decentralized	Pension companies
Mexico	Centralized	Mexican Social Security Institute	Decentralized	Pension companies
Peru	Decentralized	Pension companies	Decentralized	Pension companies
Uruguay	Centralized	Social Security Bank (BPS)	Decentralized	Pension companies
Central and Easter European countries				
Bulgaria	Centralized	National Revenue Agency (NRA	Decentralized	Pension companies
Estonia	Centralized	Central Registrar for Securities (CRS)	Centralized	Central Registrar for Securities (CRS)
Hungary	Decentralized	Pension companies	Decentralized	Pension companies
Kazakhstan	Centralized	State Pension Payment Center (SPPC)	Centralized	State Pension Payment Center (SPPC)
Latvia	Centralized	State Social Insurance Agency (SSIA).	Centralized	State Social Insurance Agency (SSIA).
Poland	Centralized	Social Security Institution	Decentralized	Pension companies
Slovak	Centralized	Social Administration Agency (Socialna Poistovna)	Decentralized	Penzijske kompanije
OECD				
Australia	Decentralized	Pension companies	Decentralizovano	Pension companies
Sweden	Centralized	Premium Pension Authority (PPM)	Centralized	Premium Pension Authority (PPM)

Source: Tapia, W. and J. Yermo (2008).

Type of Private Financial Institutions

All countries that implemented pension reform under the auspices of the World Bank adopted the concept of specialized pension funds and companies whose sole responsibility is management of these funds.

The main advantage of such highly specialized institutions is that they can be effectively supervised by independent authorities[80].

However, operational costs of specialized funds are higher than it would be the case with financial institutions such as banks and insurance companies that provide other financial services as well, and that could have benefit from synergy effects. Furthermore, if individual accounts are not mandatory but voluntary, as is the case in Serbia, such institutions have much less potential to attract beneficiaries, unlike banks and insurance companies that already have their sales networks and client contacts. Costs of such specialized funds thus become even higher.

In Sweden, the country that we take as an example of specific and different management of the individual accounts system, all financial institutions were allowed to participate (with a valid license), but there were no specialized institutions that would solely invest pension contributions stemming from the mandatory funded component (Premium Pension). A choice offered to beneficiaries is even too broad (over 700 financial providers), while at the same time, a state *default fund* was established for individuals who did not want to entrust their funds with private companies or did not want to make an active investment decision. However, such a broad array of possibilities made investment decisions of average beneficiaries rather complicated. Participants made an active investment decision only in the first 2-3 years, while for example in 2003 more than 90% of new participants opted for the state default fund.

4.3. Administrative Costs and Fees

As explained in Section 4.1, the level of pension in the individual accounts system depends not only on the level of contributions made and investment

[80] Holzman, R. And Hinz, R. (2005), *Old-Age Income Support in the 21st Century*, The World Bank.

returns, but also on fees that private companies charge for their fund management services.

Measuring these costs and examining their effect on pension benefit is rather complicated. At the same time, they can make potential pension significantly lower. We will therefore try to explain the types of costs and fees and their influence on future pension, especially in view of specific features of the private pension market.

"While competition is normally expected to bring down costs, individual account pension markets behave in a counterintuitive manner. Marketing and sales agents have been used in the past to encourage members to switch providers, leading to an increase in operational expenses and fees. As members are not very responsive to higher fees, systems that a priori seemed very highly competitive, with many players, have actually turned out to do rather poorly in terms of fees"[81].

Administrative costs are related to the main functions of mandatory private pension fund organization and management: contribution collection, administration of individual accounts, investment of fund assets and benefits payment. Marketing costs can be related to all three functions[82].

As illustrated in the previous section, costs of individual accounts administration depend largely on the system organization, i.e. on whether the model is centralized or decentralized.

Besides costs of private funds, there are also costs of state supervision and regulation. In case of decentralization, hidden employer costs should also be accounted for.

It is again important to make a clear difference between the accumulation and payout (decumulation) phase. Costs in the payout phase vary according to whether the payment takes the form of a lump-sum payment, programmed withdrawal or annuity. Special fees are charged in the payout phase for

[81] Tapia, W. and J. Yermo (2008), *Fees in Individual Account Pension Systems: A Cross-Country Comparison*, *OECD Working Papers on Insurance and Private Pensions*, No. 27, OECD.

[82] Bateman, H., Kingston, G. and Piggott, J. (2001). *Forced Saving: Mandatory Private Retirement Provision*, Cambridge University Press.

annuities purchase. As mentioned in Section 3, most countries that introduced private pension funds do not focus on the payment phase. "Pension reforms normally focus on the accumulation phase, while decumulation appears to be far off in the future".[83] This study analyzes charges in the accumulation phase.

Accumulation Phase Fees

Fees of management companies may reflect management costs in relation to the function. In this sense, there are several types of charges.

Up-front fees reflect the costs of the first management function - contribution collection and administration of individual accounts. These fees can take the form of a *fixed up-front fee*, and/or *contribution fee* that is usually expressed as a percentage of contributions, and that reflects current costs of contribution collection and administration of individual accounts.

The *asset under management fee* reflects the management function, i.e. investment of fund assets, and is expressed as a percentage of total fund assets. Some countries also have *fees on returns*.

The *exit fee* reflects the withdrawal of funds and is usually expressed as a percentage of total accumulated assets. It marks the end of the accumulation phase.
In short, there are one-off fees that comprise up-front and exit fees, and there are also ongoing fees that consist of contribution and asset under management fees[84].

In practice, these fees do not necessarily reflect the exact costs structure according to management functions. Yet, the existence of different types of fees expressed relative to different bases complicates the analysis and understanding of the level of costs. This is because the level of charges considerably varies depending on whether it is expressed as a percentage of contributions or percentage of total assets. In addition, the asset under

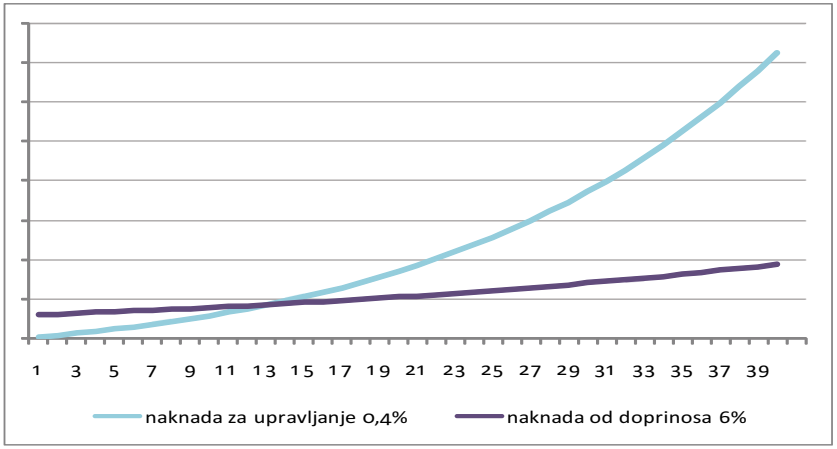
[83] James, E. And Vittas, D. (1999), *Annuity markets in comparative perspective: do consumers get their money's worth?*, World Bank Policy Research Working Paper No. WPS 2493.

[84] Whitehouse, E. (2001) *Administrative charges for funded pensions: comparison and assessment of 13 countries*, *Insurance and private pensions compendium for emerging economies*, OECD.

management fee, expressed as a percentage of total fund assets, adds to the confusion because it seems to be much lower than it really is.

For the sake of illustration, we shall use an example of a 6% contribution fee and 0.4% asset under management fee. At first sight, the contribution fee seems to be high, whereas the asset under management fee seems acceptable. However, each fee calculated on total assets, even if only a portion of percentage, is actually very high.

Figure 4-2 **Level of Asset under Management Fee and Contribution Fee during Accumulation Over Years**



NOTE: The asset under management fee is expressed as a percentage of total fund assets. The up-front fee is expressed as a percentage of up-front contributions. Assumed annual earnings growth is 3%, and gross fund return is 5%85. Assumptions about the rate of return and earnings growth have been taken from the Whitehouse's study (2001).

Figure 4-2 illustrates more clearly the nature of charges – contribution-based charges are "front-loaded", that is, they are relatively heavy in early years,

[85] The difference would not be great even if we assume that there is no earnings growth – the contribution rate in absolute amount would then be a constant value, and the asset under management fee would be somewhat lower in absolute amount, but higher in relative amount (of total contributions).

whereas asset-based charges become more "back-loaded" in time[86]. In our example, in the first 13 years, contribution fees are higher than asset under management fees, but after this period, this relation changes significantly. In case of a higher asset under management fee, the contribution fee is the main source of revenues of fund management companies only in the first several years.

The nature of charges is such that their transparency and impact on the future pension are, although very important, at an exceptionally low level. Comparison of charges requires the standardization of the metric under which they are calculated. Unless all charges are expressed as a percentage of the same base – of contributions, benefits, or of assets under management, it is difficult to gain any sense of their relative magnitude[87].

There are three main potential measures of charges: – reduction in yield, reduction in premium and charge ratio[88]:

The reduction in yield – all charges are expressed relative to fund assets, i.e. as asset-based charges. This measure shows the difference between gross and net return, i.e. what the return on member's funds would be if no fees were charged at all.

The reduction in premium – all charges are expressed as contribution charges. It shows total charges, including charges expressed as a percentage of fund assets, as if they were expressed as a percentage of contributions.

The charge ratio – it measures the impact that any type of administrative charge can have on the final balance of an individual account compared to the hypothetical balance that could be obtained if no administrative fees were charged at all[89]. This measure is very often used in literature.

[86] Whitehouse, E. *Administrative charges for funded pensions: comparison and assessment of 13 countries*, *Insurance and private pensions compendium for emerging economies*, OECD, 2001.

[87] Bateman, H., Kingston, G. and Pitggot, J. (2001), *Administrative costs and charges*, Chapter 7 in Bateman, H., Kingston, G. and Piggott, J. *Forced Saving: Mandatory Private Retirement Provision*, Cambridge University Press, 2001.

[88] Whitehouse (2001) mentions the fourth measure as well – MP1, which we did not consider important for our analysis.

[89] Tapia, W. and J. Yermo (2008), *Fees in Individual Account Pension Systems: A Cross-Country Comparison*, *OECD Working Papers on Insurance and Private Pensions*, No. 27, OECD.

Table 4-3 **Impact of Charges on the Level of Pension and Rate of Return**

Fee	Charge ration	Reduction in yield
Contribution fee		
1%	1%	0.02%
2%	2%	0.09%
3%	3%	0.14%
4.5%	4.5%	0.20%
5%	5%	0.23%
7%	7%	0.32%
Asset under management fee		
0.1%	2.3%	0.1%
0.2%	4.5%	0.2%
0.5%	10.8%	0.5%
1%	20.1%	1.0%
2%	35.5%	2.0%
3%	47.3%	3.0%

NOTE: Assumed 3% earnings growth and 5% rate of return. The charge ratio would be higher in case of lower earnings growth and/or higher rate of return. The contribution period is 40 years.

The charge ratio is sensitive to assumptions. The higher the rate of return relative to the earnings growth rate, the higher the charge ratio. The charge ratio rises with higher return. The higher the return, or more precisely - the greater the difference between earnings growth and return, the higher the charge ratio. As such, higher charge ratio implies that the pension member is worse off, when in fact they are substantially better off. This is a significant disadvantage of the charge ratio as a measure.[90] However, although the pension member is in fact better off in case of a higher rate of return, the charge ratio is useful because it shows to what extent the member could potentially be even better off if no fees were charged.

[90] Whitehouse, E. *Administrative charges for funded pensions: comparison and assessment of 13 countries, Insurance and private pensions compendium for emerging economies*, OECD, 2001.

Table 4-4 **Charge Ratio and Reduction in Yield for Combination of 3% Contribution Fee and 2% Asset under Management Fee***

Contribution fee	*Asset under management fee*	*Charge ratio*	*Reduction in yield*
3%	2%	39.3%	2.15%

NOTE: Assumptions – 3% earnings growth, 5% return, 40 years of contributions.
* Maximum fees stipulated by the Law on Voluntary Pension Funds and Pension Plans in Serbia.

Asset under management fees that are charged as a percentage of fund assets can create the greatest confusion among beneficiaries. Furthermore, they are charged from fund assets (from the member's individual account) even in periods of employment and periods of negative returns, which produces a clear loss for the fund member.

Experience to Date

Funded individual accounts have proven to be very expensive. Simply put, pension fund charges (to cover sales and marketing costs, administrative costs and annual costs of managing funds) "consume" a great portion of total contributions and investment returns.

We are faced here with two problems. The first regards the costs level. Such a system, especially if decentralized, is expensive because the effect of economies of scale is lost. Specialized institutions, recommended primarily due to easier supervision, make the system additionally expensive. Moreover, this market behaves rather specifically – instead of reducing costs, competition increases them.

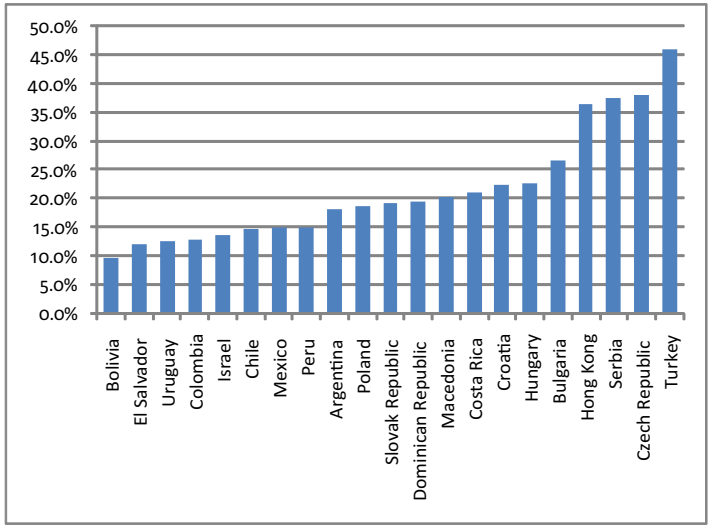
The second problem is whether charges really reflect costs. The pensions market is usually characterized by oligopolistic structure.

Practice shows that administrative costs are very high and they significantly reduce potential pensions, even in developed countries. As an illustration,

Murthi, Orszag and Orsayag have ascertained that "between 40 and 45 percent of the value of individual accounts in the U.K. is consumed by various fees and costs"[91].

The level of administrative costs substantially varies depending on the country and features of institutional arrangements. At the same time, the nature of charges makes the comparison even more complicated. In a recent study, the authors calculated the charge ratio taking into account the charges of each concrete fund. Although voluntary funds which, as a rule, have higher charges, are also covered by the analysis, we can conclude that charges vary significantly according to the country and that they are generally very high.

Figure 4-3 **Charge Ratio**



Source: Hernandez and Stewart (2008).

It is possible to reduce costs with centralized system organization. A state clearinghouse and "blind accounts" are expected to reduce cost,.

[91] Murthi, M., Orszag, J.M and Orsayag, P.R. (1999), *Administrative costs under a decentralized approach to indidividual accounts: lessons from the United Kingdom*, Discussion Paper, Birkbeck College, London.

Furthermore, the level of charges could be controlled through legally stipulated limits, or as in Sweden, by means of "blind accounts" that give the state clearinghouse the negotiating power to reduce fund charges.

However, this may call into question the private administration of individual accounts. As one of arguments for private administration is avoidance of corrupted state in pension system management, we can ask the question whether the same state could be trusted with stipulation of adequate limits on charges, particularly under the pressure of great capital accumulated in pension funds.

4.4. Investment Strategy and Risks

The principal argument in favor of a funded pension scheme compared to the PAYG is higher return on securities than the growth of wages. This actually all boils down to a shortfall of the capital relative to labor force. Under the assumption the past trends would continue in the future as well (this will be discussed in the section 6), this is in fact one of the main advantages of the funded schemes.

However, investing in securities implies a financial risk which is borne by the individual beneficiary. That is why one of the important investing principles of pension funds is safety.

Therefore, the purpose of investing is to increase the total return, in line with the basic principles of investment activity[92]:

– *Portfolio safety* – the major portion of a portfolio should consist of safer classes of assets, which implies investment in low-risk securities and securities with high credit rating;

– *Portfolio diversification* – it is desirable to invest into as many diverse securities as possible.

– *Portfolio liquidity* – a portfolio must consist of securities that can be quickly and efficiently purchased and sold at relatively stable prices;

[92] The are the general principles of operation of pension funds, set forth in the Law on Voluntary Pension Funds and Pension Plans, "The RS Official Gazette", No.85/2005

In order to ensure the safest investment possible, special regulatory investment restrictions are being introduced – the *investment limits* or the *prudent person rule* is applied.

The World Bank strongly suggests applying investment limits[93]. The majority of countries, especially the emerging economies, prescribe what maximum percentage of fund assets can be invested into securities of a single issuer. On the other hand, such limits cause problems on less developed markets where, due to a small number of investment alternatives that meet regulatory conditions, pension funds quickly reach the set limits. The high concentration of their demand entails the risk of creating price bubbles.[94]

Considering the *prudent person rule*, this is a key regulatory safeguard of pension fund members in approximately 1/3 of the OECD countries.[95]

Pension funds need to strike a balance between investing in safe i.e. less risky securities, and at the same time making as much as possible net returns (net, without fees), equaling at least the level of real growth of wages in order for the funded system to seem sensible at all. "While regulation must protect the insured against exposure to excessive market risk, it must also enable participants to reap the potentially higher returns by not imposing too severe constraints on fund managers"[96].

This is not an easy task at all. The main concern is that shares historically exhibit significantly higher rates of returns than bonds, but at the same time being more volatile. True, pensions are a long-term investment; hence the larger portion of the volatility is absorbed over the long term. However, over the short term the financial crisis might have a devastating effect on pension funds, especially concerning those retiring in the course of the crisis. A separate concern is the problem of unequal status of persons who for example retire

[93] Holzman, R. And Hinz, R. (2005), Old-Age Income Support in the 21st Century, The World Bank, p.129

[94] More detail in: Jorge E. Roldos – "Pension Reform, Investment Restrictions, and Capital Markets", Working Paper, International Monetary Fund, 2004, p. 9

[95] World Bank Pension Reform Primer: *Portfolio Limits*

[96] Nickel, C. and Almenberg, J. (2006), Ageing, pension reforms and capital market development in transition countries, EBRD

in the year preceding a market crash and earn an adequate pension, while persons who contributed the same or more, might virtually end up without a pension for retiring in the year of a financial collapse. It all affects uncertainty regarding the level of pensions. One of the ways for mitigating the problem is to apply the life-cycle investment strategy. However, the strategy is yet to take hold.

In addition, there is a problem of investment options in general. This is illustrated by the following two tables. In countries with bank-dominated financial systems, the share of loans is significant. The share of real estate is relatively low.

Table 4-5 **Pension Funds' Portfolio Composition in Developed Countries, 1998 (in % of Assets)**

	Cash	Loans	Bonds	Shares	Real estate	Foreign assets
United Kingdom	4	0	14	52	3	18
USA	4	1	21	53	0	11
Germany	0	33	43	10	7	7
Japan	5	14	34	23	0	18
Canada	5	3	38	27	3	15
France	0	18	65	10	2	5
Italy	0	1	35	16	48	0

Source: Davis E. P.: "Institutional investors, financial market efficiency, and financial stability", ***European Investment Bank Papers***, 1/2003, p. 84.

In developing countries without viable financial markets, the possibility of portfolio diversification is particularly limited. Stock markets of these countries are burdened by high risks. Hence funds' high exposure to investment in government bonds.

Table 4-6 **Pension Funds' Portfolio Composition in Latin America, 2002 (in % of Assets)**

Country	Government bonds	Financial institutions	Corporate bonds	Shares	Investment funds	Foreign assets	Other
Argentina	76.7	2.6	1.1	6.5	1.8	8.9	2.4
Bolivia	69.1	14.7	13.4	0.0	0.0	1.3	1.5
Chile	30.0	34.2	7.2	9.9	2.5	16.2	0.1
Columbia	49.4	26.6	16.6	2.9	0.0	4.5	0.0
Mexico	83.1	2.1	14.8	0.0	0.0	0.0	0.0
Peru	13.0	33.2	13.1	31.2	0.8	7.2	1.5
Uruguay	55.5	39.6	4.3	0.0	0.0	0.0	0.5

Source: The World Bank:˝Pension Reform and the Development of Pension Systems˝, Washington, 2006, p. 32

Table 4-6 illustrates to what extent diversification is efficient. In countries of East and South East Europe share of government bonds in portfolios is even more pronounced. Owing to such portfolio composition, there are actually no significant differences between private pension funds and PAYG pension funds.

Specific characteristics of investing in Serbia are presented in section *7.2. Capital Market in Serbia – Investment Opportunities.*

Finally, there is a debate in the literature whether the returns in funded schemes are indeed higher than the PAYG system return when account risk is taken into account (risk-adjusted returns).

4.5. Transition Cost and Slow Phase-in

Introduction of a funded element in a country that already has a pension system brings about the double-payment burden, the problem of financing both of the systems and the so called transition cost – a financial gap that requires additional financial resources. "Countries debating a switch from a PAYG system to a funded system should carefully asses the size of the transition problem. The evidence suggests that in the past, countries have

tended to underestimate the cost of transitions and overestimate their ability to cover the cost through fiscal adjustments"[97].

The second characteristic and a concern is the slow phase-in of a funded component that is, implications of its long-term introduction. „Advance funded pension plans – particularly those that take the form of individual, defined benefit accounts – are not a particularly adequate response to current deficiencies in a country's retirement income system, because they take so long to mature". Three or four decades will elapse between the inauguration of a system of individual, funded accounts and a significant change in the economic status of the retired population[98].

4.5.1. Concept of Transition Cost

The transition cost arises upon the introduction of the mandatory funded tier, because two pension systems have to be financed over a long period of time: the existing PAYG system – the state has to disburse benefits to current pensioners, and the new system, based on accumulation of contributions for future benefits. Additional funds for financing liabilities towards current and future pensioners are therefore necessary.

The double financing is usually manifested as a diversion of a portion of contributions, paid into the public PAYG system until then, into mandatory private funds and/or increase in the contribution rate.

How high the transition cost will be depends also on the way it is defined. We would like to point to possible differences in the definition and the manner of transition cost calculation. In order to avoid the confusion stemming from various definitions of the transition cost, we introduce the terms *explicit* and *implicit* transition cost.

The implicit transition cost occurs as a result of the introduction of the funded system, at given contribution levels and under the assumption of maintaining the pensioners' current standard of living.

[97] Thompson, L. H. (2001), *Social Protection in Asia and the Pacific, edited by* Isabel Ortiz, *Asian Development Bank, p.240*

[98] Ibid.

The explicit transition cost is the financial gap created upon the introduction of the funded component, and it requires additional financial resources. Possible savings in the PAYG system, stemming from reduced living standard of pensioners have already been accounted for in this definition of the transition cost.

The definitions used here are in compliance with the terms defined in the latest report of the European Commission[99] – gross and net transition costs. *Gross transition cost* is defined as the amount of pension contributions transferred to the funded tier, at given contribution levels to the PAYG scheme. *Net transition cost* is defined as the difference between post-reform PAYG contribution revenues and expenditures on benefits of the remaining PAYG pension scheme.

Various sources in literature use different methods for calculating the transition cost. When introduction of a funded component in developed countries is mulled over, definition of the implicit (gross) transition cost is generally used. On the other hand, the method of explicit (net) transition cost has been used in countries in transition which have introduced the funded component (the so called pillar II).

For example, calculating the hypothetical transition cost for the USA, Feldstein and Samwick (1996) make an assumption that pension benefits from their state system would remain at the same level as without privatization, i.e. the current law benefit path would be applied in the future (*the current law benefit path scenario*). According to this scenario, the transition cost starts declining with the first disbursements from the private capitalized system, that is, when first savings on account of privatization/capitalization are made in the public system.

In another scenario, Feldstein and Samwick assume that pension benefits will be lower after 2030, so that it is possible to finance them from the existing contribution rate. The majority of actuarial calculations have shown that under the current contribution rate of 12.4%, the US Social Security Trust Fund

[99] EC-The Social Protection Committee (2008), PRIVATELY MANAGED FUNDED PENSION PROVISION AND THEIR CONTRIBUTION TO ADEQUATE AND SUSTAINABLE PENSIONS

will be exhausted after 2030.[100]. In this scenario it is assumed that after 2030 pillar I pensions will be lower than envisaged by the current law, and such savings were therefore also taken into account. Feldstein and Samwick use this scenario as the baseline scenario and refer to it as to *baseline benefit path* scenario. According to this scenario transition cost is lower, as besides savings from privatization/capitalization of the system, savings from reduced PAYG benefits after 2030 are taken into account as well.

Miles and Iben (1998) start from the current replacement rate when calculating transition costs for Great Britain and Germany, and they assume the rate will remain unchanged in the future. Thus, they keep a fixed replacement rate. They also underscore that such an assumption contradicts the current law in Great Britain whereby pensions are indexed to the cost of living, which inevitably pushes the replacement rate down, especially over such a long term for which the transition cost is calculated. However, they believe such a decrease in pensions is an untenable assumption, and add that "if pensions are paid in 2100, it is most unlikely to have the same real value as that paid today. We therefore believe a fixed replacement rate is a natural assumption."

On the other hand, the definition used in calculations for neighboring countries that have already introduced pillar II usually includes one way of financing the transition cost – savings in the PAYG system not directly linked to reduced obligations in respect to the introduction of pillar II. For instance, "the transition cost in Croatia is defined as a difference between total contributions to pillar II and total savings in the PAYG pillar". Total savings in pillar I emerge from the direct decrease in future benefits due to the introduction of pillar II (the so-called basic pension for those participating in both pillars – it is around 50% lower than for other retirees) and indirect benefit reduction that results in various changes in other PAYG parameters.

The explicit transition cost, as calculated for Croatia, points only to the "burden" that is left to the current generation of workers, whereas the burden borne by the generation of current pensioners and those who

[100] The state US pension program OASDI runs a surplus (Trust Fund). It is forecast that the OASDI program will stop recording a surplus in 2016, and that it will register a deficit which will be covered from the Trust Fund until 2030. The Trust Fund will be exhausted in 2030. Feldstein's assumes that the contribution rate will not be raised, neither pensions will be financed from some additional revenues (transfers, other tax revenues, etc). Instead, pension benefits will decline in a manner that would provide for the constant equilibrium of the OASDI program.

will retire soon, remains hidden. The generation of current pensioners in Croatia largely participates in financing the transition cost, which was the initial idea: "The underlying financing principle promoted by the Government was to achieve a high level of intergenerational equity by spreading the transition cost similarly across generations, suggesting a mixed strategy for filling the pillar I financing gap."

We believe it is important to obtain an insight into the whole "burden" of transition, including those who bear, i.e. finance it. "It is well known that in general transition from an unfunded to a funded system, some generations will be worse-off"[101]. Despite debates over the adequacy of the term, as it is believed the transition cost is not a cost but a saving, which is a separate topic, funding certainly requires at least one generation to lower their consumption. How that burden of lower consumption is allocated matters (Miles and Timmerman, 1998).

We therefore believe the implicit transition cost is an analytically desirable measure as it indicates to the overall transition burden, irrespective of the manner the cost is financed. On the other hand, the explicit cost is important in respect of information about necessary funds the state would have to provide, if it decides to introduce pillar II. However, it blurs the picture about the allocation of the lower consumption burden among different generations. In addition, using the definition of the explicit transition cost often leads to underestimation of the transition cost, which creates problems in financing transition and might even lead to reversal of reforms. That is why the definition of the *implicit (gross) transition cost* is strictly used throughout the continuation of the Study.

The transition cost occurs when part of the current contributions is diverted into the funded component of the pension system (pillar II), because of which a shortfall in the PAYG system is created. **The transition cost decreases only with the first savings in the PAYG system, due to the introduction of pillar II**. These savings are created when the first generations *that paid contributions into both pillars begin to retire*. The aim of introducing a multi-pillar system is to scale down the role of the PAYG system, so that future retirees – those who contributed to pillar II as well – could receive their pension benefits from

[101] MILES, D. and IBEN, A. (2000) "The Reform of Pension Systems: Winners and Losers Across Generations in the United Kingdom and Germany", Economica, Volume 67, pages 203-228

several sources. One portion would be generated from the state PAYG system, with appreciably lower pensions than those today, whereas another portion would be financed from pillar II. **The transition cost ends when savings in the PAYG system due to the introduction of pillar II exceed the revenue loss in the form of diverted contributions (the *cross-over* date)**. When the transition cost is observed as a higher contribution rate, the *cross-over date* occurs when the overall contribution rate on the transition path falls and equalizes with the pure PAYG rate. The transition cost is therefore associated with a very long period of time.

4.5.2. Methods for Calculation of Implicit Transition Cost

The implicit transition cost can be calculated in different ways, depending on the assumptions on PAYG law design following pillar II introduction. We have singled out two methods that produce very similar results.

Method 1 Fixed Prospective Replacement Rate

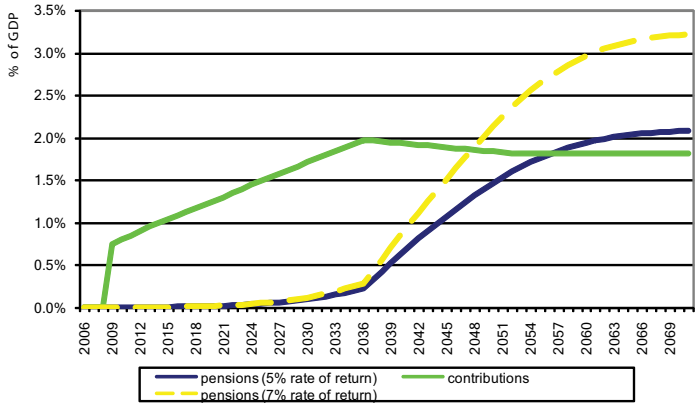
The starting point in this method is predefined fixed total replacement rate. The assumption is that the PAYG system is designed in such a way that savings equal the benefit payments from pillar II. This practically means a guaranteed replacement rate, so the lower the amount realized in pillar II, the higher PAYG benefit and vice versa. Accordingly, guarantees usually provided by the state regarding pillar II performance are implicitly embedded in transition cost with this method. In relation to that, the level of transition cost is sensitive to the amount of pillar II return and fees.

According to this method, transition cost is defined as the amount of contributions transferred to pillar II, excluding benefits disbursed from pillar II, since PAYG savings are assumed to be equivalent to pillar II benefits.

Figure 4-4 displays the dynamics of the introduction of funded component, assuming that private pension funds' net returns exceed growth in economy wage-bill, over several decades following pillar II introduction.[102] The annual amount of contributions increases over years commensurately with the rise

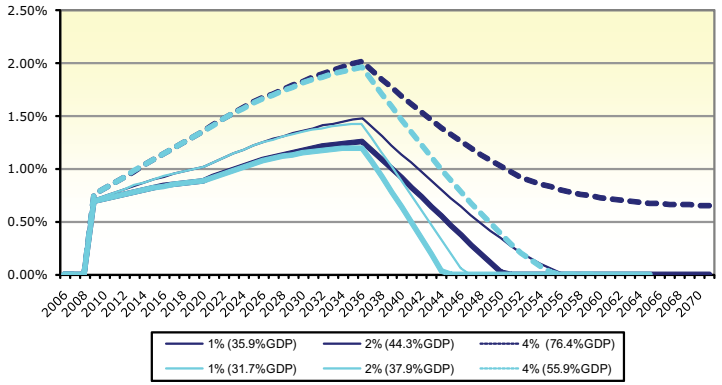
[102] The example is set for Serbia. Decline in payments around 2036 results from projected shrinking of the working population.

Figure 4-4 **Pillar II – Contributions and Benefits Flow**



NOTE: variant 7% contributions and 35 age limit
Source: PMP, USAID/BearingPoint (2006)

Figure 4-5 **Transition Cost until 2071 – Sensitivity to Various Rates of Wage Growth and Return**



Source: PMP, USAID/BearingPoint (2006)

in the total number of pillar II contributors. Pillar II disbursements start only after first generations of pillar II contributors have retired.[103] Over the years, the

[103] In the period up to 2036, disbursements from pillar II are negligible – exclusively on the basis of pre-retirement deaths of contributors. The baseline design of pillar II assumes that a deceased contributor's family receives accumulated contributions, which is not always the case, e.g. in Swedish Premium Pension system deceased contributor's contributions are allocated to all the contributors in the form of a bonus.

level of benefit payments constantly increases and at one moment reaches the annual level of contributions into pillar II, which marks the end of the transition cost – the co-called cross-over date, after which point pillar II is capable of providing a partial fiscal relief to PAYG system.

As can be seen, the rate of return determines how close the cross-over year is Figure 4-5. Therefore, assuming net real return of 5% (at 4% wage growth and later 3%), the cross-over date, i.e. cessation of transition cost occurs in 2056, and with 7% net return rate in 2048[104].

Figure 4-5 demonstrates sensitivity to different wage growth rates in combination with different contribution rates. The higher the rate of return and lower the wage growth, the lower the amount and length of transition cost and vice versa. Lower rate of return and higher wage growth results in extended and higher transition cost, with possibility of pillar II introduction turning out as a complete failure if net returns of pillar II fall below the wage bill growth.

It should be noted here once more that the assumptions on rate of return are arbitrary as they primarily serve to illustrate possible different rates scenarios. For example, the baseline scenario assumes 5% net return, which might seem conservative compared to the rate Feldstein used in his simulations (9% net of all the fees), though on the other hand, bearing in mind experiences of neighboring countries, it is actually quite optimistic. Therefore, rather then going into discussion about what is realistic to expect, we will simply illustrate possible scenarios for potential rates of return.

The method of fixed prospective rate of return is highly useful in analytical terms, since it precisely indicates the costs and savings generated by the introduction of pillar II, clearly illustrating the effect of returns and fees and taking into consideration a potential failure of pillar II which would become the responsibility of the state. This is the reason for presenting this method of calculating transition cost in the case of Serbia (Section 7.1.), since we believe it is important to present exactly the "burden" borne under different circumstances.

[104] Net return is understood to mean net return on all the fees calculated on total assets, while the fee is calculated as 3% of paid in contributions.

Method 2 Fixed Savings in Pillar I

The method relies on the practice of countries which have introduced pillar II and the practices they have applied in redesigning their PAYG systems.

When pillar II was introduced, the PAYG laws were changed to reflect that each individual participating in both pillars would have a lower PAYG pension. The pension benefits received from pillar I are calculated in accordance with a predefined formula, and they are independent of the level of pillar II returns. Furthermore, the pillar I pension benefits are usually independent of the number of years a person contributes to pillar II, resulting in different (total) replacement rates per cohort.

This is the general approach employed by the countries which have introduced pillar II in regulating their PAYG systems - such as Croatia, Hungary, etc. For example, the Croatian law envisages: "For the average earner participating in both mandatory pillars, the total accrual rate from the first pillar in the new system would stand at 0.5 percent, i.e. about 50 percent lower than the accrual rate for those participating in the first pillar only".[105] The accrual rate in Hungary for the persons contributing to pillar I only amounts to 1.65%, and it is 1.22% for those participating in both pillars - including the years during which the insured contributed to the PAYG system only. This represents a 25% reduction in PAYG pension benefits, equaling the share of contributions paid to pillar II.

The transition cost defined in such a manner is independent from the level of rate of return in pillar II. At the same time, this, however, means the risk of a low return in pillar II has been passed on to pension beneficiaries. Consequently, the savings in pillar I are defined, but what the prospective total benefit will be is not certain, i.e. it depends on the rate of return.

However, the practice shows that, generally, the risk is not completely transferred to beneficiaries, but the state remains a provider of certain guarantees. Thus defined transition cost does not account for potential cost burden to the state in such case. This method therefore assumes that the state will not have any financial responsibilities in the future to private

[105] Anušić, Z. *et al* (2003) "Pension Reform in Croatia", *Social Protection Discussion Series*, No. 0304, The World Bank, 2003

pension funds and their pensioners, e.g. there will be no guarantee pensions, social benefits and similar.

The method therefore demands utmost caution, given that even conservative assumptions on return underestimate transition cost. Therefore, it is necessary to take into consideration some statutory provisions related to guarantees and calculate the expenses the state would have to bear if those guarantees were to be activated under certain circumstances, which complicates the analysis. That is yet another reason why we opted for calculations of transition cost according to the method 1.

4.5.3. Transition Cost Financing

The key question is *how* the transition cost is financed, and a related question is *who* finances it. Also, the manner of financing the transition cost influences the potential effect of introduction of pillar II on national savings.

Schmidt-Hebbel defined "two fundamental ways of financing the transition deficit". First, the implicit PAYG debt can be swapped for another public-sector asset (by selling government assets like public enterprises) or liability (by issuing explicit government debt). The second way to finance the transition deficit is by lowering public expenditure or raising taxes (contributions) for a period that lasts as long as the transition deficit lasts[106].

I Debt-Financed Transition and Privatization Revenues

The transition cost may be debt-financed, and it may be financed by means of privatization revenues in transition countries. In the event of debt financing, the *implicit pension debt* (future liabilities of the PAYG system towards current retirees) is actually *transformed* into an *explicit pension debt*.

In this case, the transition is financed by the current and future generations of employees. The effect on national savings is almost neutral, since the increase of the explicit debt has been neutralized by a decrease of the implicit debt.

[106] SCHMIDT-HEBBEL, K., (1998), "Does Pension Reform Really Spur Productivity, Saving, and Growth?" World Bank manuscript

Moreover, this method of financing the transition cost may have an adverse effect on government savings, if the interest rate on repayment of the explicit debt is higher than the rate of the implicit debt (the so-called rate of return in the PAYG system), which actually is the case. Furthermore, a sudden surge of the explicit debt and claims by the government might also have an adverse effect on the increase in interest rates. Besides, in countries that have introduced pillar II, these private pension funds are the ones purchasing government securities. Thus, the contributions diverted to pillar II practically finance the explicit debt, but now, private funds operating with rather high fees emerge in the chain, as well.

Utilization of privatization revenues appears as a common method for financing transition, in fairness, only in the first years following the introduction of mandatory private funds. As time goes by, this source of financing becomes scarce. At the same time, it is essential to calculate the foregone interest in the form of the opportunity cost if these funds were to be used for other purposes.

In addition, when considering this financing method for Serbia, it should be noted that it is largely exhausted – bearing in mind that the privatization of the commercial sector is nearing its end, and the future proceeds from the sale of public companies have been already burdened (in part) by the distribution of free shares.

II Financing by PAYG Savings/Increased Contributions

The most common way of financing the transition cost is by savings generated in the PAYG system. As a rule, countries that have introduced pillar II immediately start a rather rigorous parametric reform of the PAYG system. This creates the explicit transition cost only in the first years following the introduction of pillar II. After a while, upon creation of a surplus in the PAYG system, the transition cost becomes partially or fully funded by PAYG savings (or rarely, by some other budgetary savings). Therefore, the explicit transition cost disappears. In this way, the double-payment burden of the current working generation is transferred gradually, and then entirely, to the current generation of pensioners.

It has already been mentioned that Croatia largely used this method to finance its transition cost. Croatia made projections that PAYG system savings would outgrow the transition cost by 2016, followed by a drastic deterioration in the replacement rate. The total transition cost in Croatia was consequently calculated to amount to 9% of GDP (lasting 14 years)[107]. However, that country's almost 10 years' experience indicates serious social problems that threaten to annul some of the key PAYG system reforms.

There are also other ways to finance the transition cost. Instead of diverting current contributions (*carve-out* method), pillar II can be financed by raising the contribution rates (the so-called *add-on* or *top-up* method), and then the transition cost problem i.e. the PAYG revenue shortfall does not appear as a cost at all, that is, the financial gap does not occur.

However, this method surely puts a strain on the current generation of workers – in terms of consumption reduction and possible labor market distortions. The add-on method is politically highly unpopular, as it increases taxes levied on the economy. Nonetheless, a combination of the add-on method with the carve-out method is often used. Estonia, for example, introduced pillar II in this way - contributions amounted to 6% of salary, out of which 4% were diverted from the existing state PAYG system, and the contributions were increased by an additional 2% of salary. This could hardly be the case in Serbia, since any increase in the contribution rates would be used, quite logically, for financing the existing PAYG system deficit.

Financing transition cost by means of PAYG savings or by an increase in contributions represents, in fact, a restrictive fiscal policy. Therefore, it might bring about growth of national savings accompanied by increases in state savings. The crucial point is whether it really represents a restrictive policy, or the consumption reductions in the PAYG system are just offset by increased government spending on the other side. The experience so far indicates that, deprived of other investment options combined with conservative rules applicable to the pension funds, private funds have no options to invest in other than the most commonly used - government bonds.

[107] Anušić, Z. *et al* (2003) "Pension reform in Croatia", *Social Protection Discussion Series*, No. 0304, The World Bank

5. Experience in Selected Countries[108]

5.1. Hungarian Experience with Mandatory Private Pension Provision to Date

5.1.1. Introduction

Unlike some other countries in transition (e.g. Poland), Hungary initiated its gradual pension reform at the beginning of the 1990s. Firstly, changes within mandatory public PAYG system were introduced – prolonging years of service, introducing the Swiss formula and reducing the contribution rate. Then in 1993, Hungary introduced voluntary private pension savings (pillar III), and only at the end of 1997, did it embrace mandatory private pension provision (pillar II).

The decision on the introduction of pillar II in Hungary was not adopted easily. For a while, two proposals were simultaneously discussed.

The first regarded a comprehensive reform of the PAYG system, with the aim of making a clear division between the social assistance and the social insurance element. This practically means that pension benefits would comprise two parts: The basic flat pension, exclusively redistributive - all older citizens would be entitled to the basic pension, and it would be financed from general taxation. The other, larger part would be based on the insurance principle, with contributions directly linked to the pension benefit. It was estimated that such pensions in two parts would ensure replacement rate of approximately 60%, hence the insured would be fully motivated to regularly contribute.

[108] The World Bank terminology has been used throughout this part of the Study (Please see Annex 2, Terminology of Pillars and Tiers).

However, the latter line of reasoning, led by the Finance Ministry, prevailed. A new, "mixed" pension system, comprising pillars I and II, was defined (besides the existing pillar III which was less important judging by the volume of accumulations). The well-known arguments, put forward by the World Bank at the beginning of the 1990s, were espoused as advantages of the new system.

5.1.2. Pension System and Pillar II Statutory Solutions

Reform of the PAYG System and Transition Cost

In 1997-1998, Hungary introduced pillar II, as the financial situation in the PAYG system was relatively favorable at the time. Although, the system support ratio was rather law at the time of the introduction of pillar II, the Pension Insurance Fund (through which the major portion of pensions is disbursed - over 80%)[109] was in balance, primarily owing to a very high pension contribution rate, which amounted to not less than 30% at the time.

The reform of the PAYG system included the new method for pensions calculation. For every year of service an accrual rate is 1.65%, and 40 years of service are required to obtain the full accrual rate. This gives the coefficient 66 (1.65x40), whereby the 66% replacement rate is earned by each person who worked 40 years and had average earnings during the entire career. In case a person exceeds the retirement age (62 years for men), a bonus of 6% is granted for each year (up to the age of 65). Therefore, the total bonus for persons retiring at the age of 65 is 18%. These bonuses are even higher for women.

Since 2001, pensions have been indexed according to the Swiss formula. This measure was expected to bring about a 1.5% of GDP saving in the PAYG system over the 10-year period.

However, in the short- and mid-term, this effect was postponed by the introduction of the 13th-month pension in 2002, while its payment started in

[109] The payment of pensions in Hungary – the most of it (83%) is done by the Pension Insurance Fund. However, part of the pensions are paid by the Health Fund (disability and survivor benefits), while pensions for special categories (artists, miners, farmers etc.) are not funded by the social insurance funds (Central Administration of National Pension Insurance, Statistical Yearbook)

2003. The 13th-month pension was introduced with the aim of mitigating (or even eliminating) the burden of transition towards the multi-pillar system. The value of this pension further rose (in 2004, it stood at 50% of the November pension, and in 2005 it reached 75%), and starting from 2006, it amounted to 100% of the 2006 November pension. This practically means that some effects of the 1998 reform were postponed, probably until the time when future pensioners start receiving pillar II pensions.

Table 5-1 **Basic Pension System Indicators in Hungary**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Pension expenditures (% BDP)	8.6	9.0	9.1	8.4	8.6	9.2	9.1	9.3	9.8	10.0
Employment (total, 000, LFS)	3,598	3,671	3,792	3,829	3,868	3,871	3,922	3,900	3,902	3,930
Employment rate (15-64, LFS, %)	52.5	53.7	55.6	56.3	56.2	56.2	57.0	56.8	56.9	57.3
Unemployment rate (%) - ILO def.	8.8	7.8	7.0	6.4	5.7	5.8	5.9	6.1	7.2	7.5
Number of pensioners (u 000)	2,843	2,847	2,816	2,786	2,772	2,764	2,754	2,741	2,744	2,746
Net pension to net wage ratio (%)	56.3	59.0	60.9	61.1	61.1	59.3	59.0	62.4	63.6	65.0
Consolidated general gov. balance* (% GDP)	-6.25	-8.2	-5.5	-2.9	-4.0	-8.9	-7.2	-6.5	-7.8	-9.2
Pension fund deficit (% GDP)	..	0.40	0.59	0.60	0.87	1.68	1.51	1.74	1.81	2.37
of which transition cost (% GDP)	..	*0.29*	*0.50*	*0.57*	*0.62*	*0.65*	*0.84*	*1.02*	*1.10*	*1.16*

NOTE: A) Data on pension expenditures regarding pensions financed from social insurance funds; please se footnote 100. Other expenditures have not been included here. In 2006, for instance, they equaled additional 0.6% of GDP, comprising around 300,000 beneficiaries; B) Data on the fund deficit refer to the Pension Fund only (excluding pensions paid through the Healthcare Fund); C) 13th pension is included in all data on pensions.
* Balance corrected by the deficit incurred by to the pension reform, i.e. the transition cost not calculated into the deficit.

Sources: CANPIH (Central Administration of National Pension Insurance in Hungary) – statistical yearbooks; the Hungarian Central Bank (Magyar Nemzeti Bank); for the transition cost – author's estimate after verification of available official data for 2005/2006.

Table 5-2 **Contributions of Employers and Employees into Pillars I and II**

	Employer	Employee		Total
	I pillar	I pillar	II pillar	
1997	24	6	..	30
1998	24	1	6	31
1999	23	2	6	31
2000	22	2	6	30
2001	20	2	6	28
2002	18	2	7	27
2003	18	1.5	8	27.5
2004	18	0.5	8	26.5
2005	18	0.5	8	26.5
2006	18	0.5	8	26.5
2007	17	0.5	8	25.5
2008	17	0.5	8	25.5
2009	16	0.5	8	24.5

Source: Gabor and Palotai, 2005

Furthermore, the contribution rate to pillar I decreased significantly, only partially due to the introduction of pillar II, and partially with the aim of reducing the burden on wages. In 1997, before the introduction of pillar II, 30% of gross wages went into pillar I, whilst in 2007-2008, this figure stood at mere 17%.

This accounts for practically no savings in pillar I, and the complete transition cost is transformed into an explicit debt, financed from the budget. It now exceeds 1% of GDP annually (Table 5-1).

At the same time, Hungary ran a substantial fiscal deficit in excess of 9% of GDP (in 2006, Table 5-1), and the deficit does not even include the

amount of the transition cost. With transition cost included, the total 2006 deficit overshot 10% of GDP! After the EU Stability and Growth Pact approved of the exclusion of the transition cost from the balance of the consolidated general government, as defined by ESA 95, the transition cost is not included in calculation of deficit, so as not to "punish countries that reformed their pension systems"[110]

By contrast to Croatia (more about Croatia in the following chapter) and other transition countries, Hungary did not opt for the strategy whereby retirees bear pension reform costs. In Hungary "nearly the entire population older than the official retirement ages is with some form of income security in old-age"[111]. The minimum pension equals around 20% of the average wage or 40% of the average pension (although its abolishment is forecast in 2009). The 13th pension doubtless diminishes the savings created by the Swiss formula. Even besides the official 50% indexation to growth of wages, pensions practically keep up with the wages.

Table 5-3 **At-Risk-of-Poverty Rate at 65+ (%)**

	2000	2001	2002	2003	2004	2005
Hunbary	8	12	8	10	:	6
EU-15	17	18	:	19	19	20
EU-25	17	16	:	17	18	19

NOTE: The share of persons older than 65 whose equalized disposable income, before social transfers, is 60% of the national median equalized disposable income. Pensions are taken into account as old-age income not as social transfers.

Therefore the average living standard of pensioners did not deteriorate (the average pension relative to average wage ratio is above 60%, Table 5-1). It even improved in the past years. Accordingly, poverty indicators for persons above 65 in Hungary are therefore rather favorable, even compared to EU developed countries (Table 5-3).

[110] Gabor Orban, Daniel Plotai, (2005) »The sustainability of the Hungarian pension system: a reassessment«, MNB (Hungarian Central Bank), Occasional Papers 40

[111] CANPIH (Central Administration of National Pension Insurance in Hungary) 2007. *Information on the major benefit regulations and organizational structure of the pension insurance system in Hungary.*

Legal Framework and Design of Pillar II

First statutory solutions considering operation of pillar II were adopted in 1997. According to these solutions:

- Entry into pillar II is obligatory for persons under 42, employed after 1988, and it is optional for persons who joined pillar I before 1988.
- The contribution rate for employers is brought down to 22%, and increased to 9% for employees, whereof 8% goes into pillar II.
- The level of the initial capital was not prescribed
- The law did not limit the level of fees and charges for operation of pillar II
- Pensions are taxed with a 50% tax credit (PAYG pensions will be taxed until 2013, retaining the 50% tax credit for pensions from both pillars)

Some of these solutions were temporarily abolished by the subsequent Government (1998-2002). For example, the pillar II contribution rate was lowered to 6%, instead of the envisaged 8% (while the employers' part was reduced as planned). Membership in pillar II became practically voluntary (it was mandatory only for the new entrants, i.e. for those who entered the labor market in 1998, which implies that all other were able to choose), and employees could switch back to pillar I. This sparked confusion and a temporary stagnation of the number of pillar II fund members. Nevertheless, after 2002, the new socialist Government restored all previous solutions from 1997, which are still in force.

As regards pillar I pensions, they will be calculated at the 1.22% accrual rate for each year, for persons in the mixed pension scheme - contributing both to pillar I and pillar II. This practically implies a 48.8 % PAYG replacement rate for each person who worked 40 years and had average earnings during the entire career. This applies if bonuses for persons retiring after the retirement age are excluded.

Legislation and regulation mechanisms of pillar II operation in Hungary were copied mainly from solutions adopted in 1993, when voluntary private pension insurance was introduced. They are based on principles whereby, more or less, all private pension funds operate. Hungary, however, has some specific characteristics.

As regards the *minimum return guarantee* on personal accounts of fund members, it is linked to the level of return on the "basket" of government long-term securities. Here, the defined band between the upper and lower limit of the rate of return on the securities is rather wide. If the fund's rate of return outstrips the upper limit of government securities return, the surplus is then placed into liquidity reserves. On the other hand, if the fund's rate of return is below the lower limit, the return on personal accounts is then increased to the guaranteed minimum (that is, the lower limit benchmark), reducing liquidity reserves[112]. In practice, this obligation did not markedly affect portfolio strategies of funds, as the interval between the upper and lower limit was defined rather broadly.

Such a solution pools risk, in a way. For instance, an individual is worse off if he/she contributed to the system in the period of high returns (as one portion of the return would go into reserves) and vice versa.

Considering the payout phase, besides insurance companies, pension funds can pay annuities as well, if licensed by the HFSA (The Hungarian Financial Supervisory Authority), which implies they have at least 25.000 members, a reserve fund, an actuary etc. A pension fund may offer to its members annuities on the basis of a collective agreement signed with an insurance company. Of course, each person can choose a life insurance company on their own. In the first 15 years, until 2013, a pensioner may opt between withdrawing the whole accumulated sum and buying annuities, afterwards, annuity payments become mandatory. All annuities are fixed (they do not vary depending on market returns), and their growth is adjusted with the Swiss formula. This might be a problem in the annuity payment period, because high premiums might be expected, whereby funds will be protected from the risk of sudden changes in wage and price trends in the future. This again has a direct downward impact on initial annuities/pensions[113]

5.1.3. Structure of Pillar II

Initially, there were 38 mandatory private pension funds. However, this number quickly dwindled, and in 2004 only 18 funds remained. Moreover,

[112] Liquidity reserves may not exceed 4% of the fund's total asset value.

[113] Edward Palmer, »Pension Reform and the Development of Pension Systems: An Evaluaton of World Bank Assistance«, Hungary Country Study, The World Bank, 2007.

pillar II market is rather concentrated. From the very beginning, six biggest private mandatory funds controlled over 80% of pillar II funds. Therefore, the decrease in the number of pillar II funds did not fuel further concentration of assets because funds that left the market (mainly through mergers and acquisitions) were rather small.

Table **5-4 Pillar II Structure**

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Number of funds	38	39	-	21	19	18	18	18	19	20
Assets (% of GDP)	0.29	0.79	1.33	1.86	2.35	2.97	3.87	5.11	6.28	7.99
Members (in 000)	na	1,339	2,020	2,279	2,239	2,270	2,376	2,477	2,617	2,754
Share of 6 largest funds (%)	83	84	84	86	87	..	83	..	..	..

Source: HFSA; WB i IMF (2005)

Founders of pillar II funds were banks, insurance companies, employers and unions that provided funds for the beginning of pillar II operations, whilst the previously defined initial capital was not mandatory. By and large, the market is highly segmented, and founders may be grouped into 3 groups: financial institutions; employers (usually public companies) and independent founders. In 85% of cases, the sponsor was a financial group, whereas the third group consists of only 3 funds with less than 10% of share[114].

It should be noted that employees demonstrated the greatest interest for this group (where founder was a financial institution), even though their operational fees and expenses were the highest. The probable reason is trust in recognizable names (brands) of financial companies, as well as the fact that members poorly react to levels of charges, bearing in mind that their effect on pensions is usually not clear.

The number of pillar II members hiked, although the period 2001-2002 witnessed stagnation as the then Government abolished some of the earlier

[114] World Bank and IMF, December 2005. Financial Sector Assessment Program Update, HUNGARY, *Technical Note: Pension – Competition and Performance in the Hungarian Second Pillar*

reform solutions. Following 2002, the number of the insured upped again from previous 2 million to 2.7 million of employees (in 2007).

Reasons for embracing the new system or remaining in pillar I depended primarily on the length of service. More years of service implied lesser reasons for entering pillar II. On the other hand, the expected movements of future higher wages were an important decision-making factor for employees with a higher level of education to enter the new system. When opting for the new mixed system with pillar II, many made a wrong estimate.

Assets of funds surged – by end-2000 the two largest funds accumulated substantial EUR 150 million. This was driven by the rapid increase in the number of the insured and their wages, and then in 2003 and 2004, the contribution rate was raised from 6% to 7%, and then to 8%. Since 1998 until end-2007, pillar II fund assets saw an approximate increase to 8% of GDP (Table 5-4). The initial sluggish rise in assets stemmed from the lower number of members and modest contributions. At the same time, operational fees and expenses additionally decreased the return over time.

Fees and Charges

Operational fees (up-front fees) climbed from the initial 5.6% to around 6.5% of contributions in 2004. Independent funds and funds sponsored by employers charged for operational fees somewhat more than funds sponsored by financial institutions (probably due to economy of scale savings, as these costs are included in total operations of these companies).

Table 5-5 **Operating Fees (% of contributions), Weighted Average, 1998-2004**

	1998	1999	2000	2001	2002	2003	2004
Total	5.6	5.7	5.5	6.4	6.8	6.8	6.5
Scheme sponsor							
Employers	6.1	5.9	5.8	6.4	6.6	6.6	6.6
Financial institution	5.5	5.6	5.5	6.4	6.7	6.7	6.5
Independent	6.3	6	6	7.2	7.5	7.3	6.9

Source: IMF and WB, 2005

Nonetheless, this difference is compensated by lower asset-under-management fees (Table 5-7).

Account administration and management represents the major portion of **operational costs** – over 60% (Table 5-6). This is followed by wages of pillar II employees, the supervision fee paid to the state Agency, and the guarantee fee. It is possible that costs regarding collection of contributions are not fully expressed in administrative costs, as they were partially shifted to employers. It is interesting that marketing costs are very low in Hungary, in contrast to Latin American countries, albeit it is possible that a portion of these costs is "hidden" in the part of the asset-under-management fees.

Table 5-6 **Operational Costs, 2001-2004**

	2001	2002	2003	2004
Material expenses	0.9	0.6	0.6	0.4
Wages	6.8	8.2	7.9	8
Pension fund staff compensation	1.7	1.4	1.4	1.4
Fees related to recruitment of new members	5	3.7	3.5	2
Administration and record keeping	54.5	61	60.3	65.5
Audit	0.8	0.7	0.6	0.3
Actuarial fees	0.3	0.4	0.3	0.4
Consulting fees	0.3	0.9	0.5	0.4
Marketing expenses	0.5	1.4	2	2.1
Supervision fees	5.1	8	8.6	4.7
Guarantee fees	5.9	5.7	6.1	6.4
Other	18.1	7.9	8.2	8.3
% of contribution (weighted average)	N.A.	6.8	6.8	6.5

Source: HFSA

Asset management fees are, as a rule, expressed as a percentage of total assets managed by the fund. Table 5-7 shows that average asset management fees saw a mild decline since the beginning of operation of pillar II, now approximating 1% compared to total assets. The highest fees are charged by funds sponsored by financial institutions, whereas funds sponsored by employers charge the lowest fees.

Table 5-7 **Asset Management Fees (% of Assets),**
Weighted Average 1998 –2004

Sponsor	1998	1999	2000	2001	2002	2003	2004
Total market	1.13	1.42	1.06	1.03	0.95	0.92	0.97
Employer	0.05	0.62	0.44	0.37	0.32	0.23	0.28
Fin. institutions	1.29	1.51	1.14	1.09	1.00	1.00	1.05
Independent	0.21	0.94	0.60	0.81	0.84	0.57	0.53

Source: WB and IMF, 2005

The lack of transparency in Hungarian pillar II arises not only from the inadequate reporting of returns and fees (costs), but also from the impossibility of making comparisons, as operational costs are paid from contributions of fund members, while management fees are expressed as the percentage of fund assets (this problem was elaborated on in *section 4.3)*. In 2004, funds were obligated to publish gross and net rates of return for the first time. However, operational fees and asset management fees are still disclosed as a function of two different numerators, making comparison rather difficult[115].

One should be very cautious when assessing real costs and fees of pillar II operation. On the one hand, operational costs (administration and management of user accounts) are charged against contributions, and they went up from 5.5% in 2000 to 6.5% in 2004, on average. On the other hand, asset management costs are deduced from gross return, and are calculated relative to total fund assets. In the observed period, this percentage ranged between 1% and 1.5%. In the period under review, total fund costs advanced from 6% to around 10% compared to total contributions, or to around 2.5%-3% if calculated as the ratio to total assets. This is rather expensive, especially bearing in mind that fees deduced from the total accumulated amount of a fund member (the future pensioner). For a period of 30 years and more, these costs can diminish the accumulated amount for over one third (Please see *section 4.3* for details).

[115] World Bank and IMF, December 2005. Financial Sector Assessment Program Update, HUNGARY, *Technical Note: Pension – Competition and Performance in the Hungarian Second Pillar*

Besides, the collection of contributions in Hungary is inefficient because employers pay contributions to accounts of 20 different funds, and they spend ample time and resources for the purposes (unlike Croatia, for instance, where this function is performed by REGOS, financed from the state budget).

5.1.4. Experience to Date – II Pillar Performances

Initially, fund portfolios were such that 70-80% of assets were invested into government securities, i.e. a conservative low-risk approach was favored. Over the last couple of years, the share of government securities declined to 60% increasing the percentage of shares and investment fund units.

Table 5-8 **Pension Fund Portfolio Composition (%), 1998 – 2007**

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cash	14.3	3.1	1.4	1.2	4.0	1.0	1.0	1.0	2.4	0.9
Government bonds	76.7	83.4	77.6	80.0	67.9	69.9	73.0	73.5	67.3	58.5
Corporate bonds	1.7	1.7	2.3	3.0	4.3	3.1	2.0	2.3	1.7	2.9
Equities	6.6	9.8	14.8	11.6	8.9	9.3	7.8	7.7	9.6	15.5
Investment funds	0.3	1.7	2.6	2.3	7.1	7.2	8.6	9.8	14.1	17.3
Other	0.4	0.3	1.3	1.9	7.8	9.5	7.8	5.7	5.0	4.9
Total	100	100	100	100	100.0	100.0	100.0	100.0	100.0	100.0

Source: HFSA; IMF and WB (2005)

From the viewpoint of beneficiaries – the future retirees, the most pertinent question is whether they are better off in the new mixed system that contains pillar II than some other form of old-age savings. In particular, would beneficiaries have realized a higher return had they invested their gross contributions in pillar I only?

In the first three years of operation, pillar II earned a negative real return on contributions. This is corroborated by the following calculations made for the 1998-2000 period [116].:

[116] E.Fultz, p.85

- In the first three years, members paid approximately 10% more assets into pillar II funds, compared to the balance on their personal accounts at the end of the period.
- The same period witnessed an absolute 5.4% loss on fund members' accounts, which would not have happened had their contributions been revalued by the CPI.
- The relative loss would have spiked to even 8.2% if payments had been indexed to the wage increase rate, as in pillar I.

In 2000, performances (gross returns) of around 50% of funds were worse than planned. The nominal return slipped below inflation, which lowered the real value of fund assets. After 2002, operations of pillar II funds slowly ameliorated. The number of members went up, and in 2004 the contribution rate was somewhat higher than the previous period. Pillar II investment policy continued being conservative, and in 2004, 73% was still invested into government securities, which, due to fiscal unadjustment, fostered a hike in public debt. The reason is that the capital market is still shallow, lacking the so-called "culture of investment" into private securities, irrespective of the favorable rating of the country in terms of investment risks.

Table 5-9 **Net Rates of Return, Wage Growth and Inflation Rates, 1998 – 2005**

	1998	1999	2000	2001	2002	2003	2004	2005[e]
Net nominal rate of return	15.7	17.1	7.9	8.0	7.4	3.4	16.3	13.0
Nominal wage growth	16.8	12.1	12.7	13.2	15.0	12.7	6.3	6.2
Inflation rate (average)	14.2	10.0	9.8	9.2	5.3	4.6	6.8	3.9
Inflation rate (Dec-Dec)	10.3	11.2	10.1	6.8	4.8	5.7	5.5	3.0

NOTE: Net applies to asset under management fees, while operating fees (contribution fees) are not excluded
[e] estimation

Source: IMF and WB, 2005

Table 5-9 illustrates that not earlier than 2004 was the net real rate of return higher than the growth of wages. Although we do not have the latest data, it is clear that in 2008 the trend was reversed again.

Table 5-10 **Average Gross and Net Rates of Return and Real Wage Growth, 1998 – 2005**

Average (weighted) real net rate of return	Average (weighted) real gross rate of return	Average real wage growth
3.85%	4.85%	5.27%

Source: IMF and WB, 2005

Overall, in the 1998-2005 period, the average return on invested pillar II assets was rather disappointing. The real annual rate of net return (management costs excluded, but operational costs are not excluded) averaged only 3.9%, and it was even negative in some years. If operational costs are included as well, the return would be even lower (as previously mentioned, funds still did not file reports on returns net of all expenses). If this return is compared to the real wage growth of 5.3% in the same period, which represents return in the balanced PAYG system, the comparison itself would not be in favor of pillar II. True, it should be highlighted that wage growth in that period accelerated primarily due to a flare up in public sector wages. At the same time the pillar II return does not really reflect capital market conditions as more than 60% was invested in government securities.

It is interesting that investors (fund members) were rather uninformed and ignorant about the option of switching to another fund, as they stayed in funds that had greater expenses and the same returns, whereby the assets on their accounts were reduced.

It is possible to say that pillar II performances recorded so far in Hungary are much more modest compared to Latin American countries. Despite the country's favorable rating, such results in Hungary are the consequence of majority investment into government securities, whereas portfolios of private pension funds in Latin America were much more diversified, which fed back into higher rates of return (with increased risk). Likewise, Latin

American countries present mostly gross returns (management expenses included), and rates are therefore not fully comparable.

5.1.5. Conclusion

Given all the above said, it is hard to forecast the future of pillar II. There are no long-term projections in Hungary that are reliable enough, and the latest developments at the global financial market do not provide real grounds for optimism when it comes to pillar II. The beginning was doubtless difficult, results were unsatisfactory, and legislation changed in the course of years.

Performances somewhat improved in 2004, which probably incited World Bank experts to assess that operation of pillar II in Hungary is positive, that such a solution enjoys a wide political support, and that pillar II has become an integral part of the overall old-age saving system[117].

In view of these unfavorable, initial pillar II performances - primarily exorbitant operational costs and modest returns on funds invested - it seems that the said assessment is justified in the light of the full-fledged institutional solutions of pillar II, while the World Bank made a significant contribution to the process itself.

As regards Hungarian experiences with pillar II up to now, and lessons for Serbia, the following can be underlined:

Introduction of pillar II in conditions of numerous unsolved problems in pillar I is not a worthwhile strategy;
Introduction of pillar II against the backdrop of a high pillar I deficit, pushes up fiscal deficit due to the transition cost;
The market of private pension funds is very quickly monopolized;
Operational costs of these funds are very high, which directly decreases accumulated contributions (individual accounts) of their members – future pensioners;

The real rate of return of these funds is very modest;

[117] E.Palmer, 2007

The portfolio strategy is rather conservative and concentrated on government securities, with the upward pressure on public debt;
Influence on economic growth through widening of the private capital market is negligible.

Last, but not least, there is no clear proof that the introduction of pillar II will enable current employees to obtain safer and adequately high pensions, or that this aim could be achieved rather through further reforms of pillar I (e.g. by separating the social pension element and the classic insurance element) and by encouraging additional forms of saving and various forms of social care for particularly vulnerable older persons.

5.2. Introduction of Mandatory Private Pension Funds in Croatia

5.2.1. Introduction

In contrast to Hungary, where Pillar II was implemented only after a huge controversy, such a dilemma was not faced by Croatia. On the other hand, the period of preparations, adoption of new laws and fine-tuning of the legislation lasted for seven full years (1995-2002). The new three-pillar system – the reformed PAYG system (pillar I), mandatory private pension funds (pillar II) and voluntary private pension funds (pillar III) – was announced at the pension reform conference, back in 1995, with active participation of the World Bank. The laws essential for the regulation of the new system were adopted in 1998, the whole regulative framework was completed in 2000, whilst the application of the new system started at the beginning of 2002, after postponements in the Parliament in 2000.

The arguments for introduction of pillar II were based on unsustainability of pillar I in conditions of the aging population and a growing state pension fund deficit. Indicators about the aging population in Croatia show that the age dependency ratio (older than 65/15-65) in 2005 stood at high 26%, with further deterioration perspective to 59% in 2050. Within the same period, the participation rate (participation of working population) will drop from 67% to 59%, that is, the number of working persons will have decreased by almost 30% during the observed period.

At the same time, the contribution rate of 19.5% (since 2001, increased to 20%) from gross salaries, was sufficient to cover only 60% of the public pension expenditures, while the rest was financed from the budget, absorbing 6% of GDP.

5.2.2. The Pension System and Pillar II Statutory Solutions

PAYG-System Reform and Introduction of Pillar II

Before introducing pillar II, it was necessary to reform pillar I, and to make the necessary adjustments to the requirements of the new mixed (state and private) system. Having that in mind, the 1998 legislation changes provided for the following:

- From 2010 a rule will be applied whereby pension entitlements are determined on the basis of an individual's lifetime earnings (meanwhile, the number of years of service that were used for calculation increased gradually from the initial 10);
- Up to 2008 the retirement age was to reach 65 years for men and 60 years for women, with at least 15 years of pensionable service[118];
- Early retirement age should be 60 years for men and 55 years for women, with 35 and 30 years of pensionable service for men and women respectively;
- Pension benefits for the early retired are set at a lower level depending on the number of months before the full retirement age;
- The growth of pensions should be indexed to the Swiss formula;
- More stringent requirements for grant of disability pensions;
- Instead of separate laws for particular groups, all the rights are regulated by a general law and the three funds for employees, farmers and entrepreneurs were substituted by a newly founded single fund - Croatian Pension Insurance Institute.

[118] Pensionable service includes years of service and years that are under the law calculated as pensionable service (years of insurance with extended duration – accelerated years if service, special privileged service etc)

The Basic Rules of the New Two-Pillar System

The mentioned changes in pillar I apply to those who opted for the mandatory state pension insurance only (pillar I), along with the over-50 population who were thus mandated by the law. The choice was optional only for the insured aged 40-50, while the mixed system of pillar I and pillar II was compulsory for those under 40.

A two-segment pension calculation formula is applied for the new two-pillar system entrants. The (German) points system is used for years of service in the old system, in the same way as for the insured remaining in pillar I only. Pillar I benefit in the new two-pillar system, the so called *new pension,* consists of two tiers: *the first* is tied to the earnings level and the length of service; the *second* relies more heavily on the years of service following pillar II introduction, and less on the earnings level, which means that it is relatively more favorable for low-earning contributors (redistributive component).
All of these changes are summarized in the following table:

For an average contributor who participates in both pillars, the total annual accrual rate is around 0.6% for the vested pillar I component. The accrual rate is higher for lower earning contributors and lower for higher earners. For individuals whose earnings were three times above the average, the rate is lowered to some 0.4 %.[119] This is almost half the accrual rate of 1.1% foreseen for beneficiaries remaining in pillar I only. In addition, the payment of pension supplement since 2007 (from 4% for pensions realized in 1999 up to 27% for pensions realized as of 2010) has pushed up the accrual rate for the insured under pillar I only. The purpose of the supplement is to increase pensions realized after pillar I reform, since they are quite low and to smooth the differences between pensions realized in different periods. Pensioners entitled to a benefit under both pillars are not eligible for the supplement, and, as a result, the position of current and prospective pensioners from both pillars has worsened compared to the ones realizing their pension under pillar I only.

[119] According to international regulations on minimum social standards (European Code of Social Security and International Labour Organization Convention No. 102), only mandatory social security benefits based on the defined benefit principle are taken into account when establishing whether a certain country meets the stipulated standards. That means that pillar II benefit based on the "defined contribution principle" is not taken into account, which entails the problem of basic pension being too low compared to the standards.

Table 5-11 **Summary of Pension Contributions, Determination and Indexation Rules in the System with Pillar I and Pillar II (from 2002)**

	Older than 50 and 40-50 in pillar I only	Below 40 and 40-50 in pillar II
Contributions	19.5% (20%) in pillar I	14.5% (15%) in pillar I and 5% in pillar II
Determination- Valorization	Actual pension value (APV) x personal points x pension factor	The same for the pillar I pension + basic pension (years of service and earnings realized in the new system) + pillar II annuity.
Minimum – Maximum benefit	Minimum benefit: 0.825% of average gross 1998 wage for each year of service Maximum benefit: 3.8 personal points per each year of service	No minimum and maximum benefits
Indexation	APV and growth of pension are indexed to the Swiss formula	APV and pillar I pension segment are indexed to the Swiss formula Pillar II annuities are indexed to CPI

Source: Pension Reform in Croatia, p.29

NOTES:

– Actual pension value (APV) is a monetary amount per year of service of RC average wage earner
– The pension factor for the old age pension, early old-age and disability due to loss of work capability is 1. For other cases the factor is decreased: disability due to loss of professional capability 0.6667 (as of 2003 raised to 0.8 etc)
– Personal point – in 2002, the average personal point was determined for calculation period of 19 consecutive best years (from 2010, the entire service is going to be taken into account) and then multiplied by the total years of service.
– Pensions are taxed but with a tax reduction almost twice higher than that for employees (as of 2004, monthly reduction has been HRK 3,000)
– From 2004, the growth of pensions had been indexed to wage growth; however, the Swiss formula was reintroduced on January 1, 2006.

It was expected that the pension system reform will result in a decline of the pillar I expenditures as a share of GDP from 11.29% in 1998, to 10% in 2020, and to 6% in 2040, creating room for pillar II development. The main short to

Table 5-12 **Basic Pension System Indicators in Croatia**

	1999	2000	2001	2002	2003	2004	2005	2006
Pension expenditures (% GDP)	12.92	12.77	13.45	12.74	12.15	11.94	11.66	11.28
Contributors [a)]	1,406,091	1,380,510	1,402,102	1,421,981	1,443,995	1,460,105	1,498,877	1,538,170
Pensioners [b)]	1,017,801	1,018,504	1,032,120	1,042,192	1,054,549	1,065,655	1,080,571	1,100,086
Contributors/ Pensioners	1.38	1.36	1.36	1.36	1.37	1.37	1.39	1.40
Average net wage (HRK)	3,055	3,326	3,541	3,720	3,940	4,173	4,375	4,602
Average net pension (HRK)	1,309	1,382	1,592	1,648	1,702	1,758	1,829	1,876
Average net pension relative to average net wage (%)	42.8	41.6	45.0	44.3	43.2	42.1	41.8	40.8
Consolidated general government balance	-7.1	-7.5	-6.8	-4.9	-6.2	-4.8	-4.0	-3.0

a) All insured included (equivalent to the insured of all three funds in the RS – employees. self-employed and farmers)

a) All pensioners included (equivalent to the pensioners of all three funds in the RS – employees. self-employed and farmers)

Source: Croatian Pension Insurance Office, National Bank of Croatia

medium term savings in pillar I would come from a slower inflow of pensioners and the new method of indexation (introduction of the Swiss formula). In the long run, reduced pillar I (PAYGO) benefits related to basic pensions would also be a significant source of savings[120]. The data indicate that this share has indeed started declining, in spite of the increased number of pensioners (Table 5-11). The decline is a result of the calculation and indexation method used, due to which the growth of an average pension benefit was significantly slower than the GDP growth in the observed period.

It is interesting that the expectations were the new system will improve the financial position of lowest income pensioners owing to a positive combined effect of the Swiss formula and minimum benefit determination for each year of service (0.825 % of the average gross wage from 1998 for each year of service, which is regularly adjusted, like other benefits). The projections have proven that in this manner only 1% of those retiring in the period 2009 – 2018 would be below the poverty line[121].

This projection seems hard to accept since Croatia poverty analysis on the basis of 2004 Household Consumption Survey showed that the poverty risk for the people older than 65 is two times higher than the average. What is more, the poverty risk for nearly 100,000 of those over 65 who are not entitled to pensions or social assistance mainly residing in rural areas is five times the national average[122].

Transition Cost and its Financing

For Croatia, transition cost financing was a huge problem, given the already high total budget deficit of 7% of GDP (excluding privatization revenues) concurrent with pillar II introduction. The underlying idea was to spread the transition cost evenly across generations. The notion was that a great deal of the transition cost should be financed by pillar I savings – a burden to be

[120] Anušić, Z. *et al* (2003) "Pension reform in Croatia", *Social Protection Discussion Series*, No. 0304, The World Bank, p.31

[121] Anušić, Z. *et al* (2003) "Pension reform in Croatia", *Social Protection Discussion Series*, No. 0304, The World Bank, p.3

[122] World Bank (2006) *Croatia. Living Standard Assessment, Volume 2: Background Papers*, Report no. 37992, p.70

carried by the current generations of pensioners while the rest would fall on the working population. Expenditure savings in pillar I, as a result of the 1998 reforms, were envisaged as a key element in financing the transition cost .[123]

Thus, for the first decade of pillar II (period 2002-2012), the transition cost – defined as a difference between the total pillar II contribution and the total pillar I savings[124] - actually the part that remains to be financed explicitly, was estimated at 7.85% GDP[125]. Savings from the PAYG system were estimated to reach 1% of GDP by 2012, due to introduction of the Swiss formula and to peak at 3% of GDP in 2035. The expected volume of savings in pillar I, according to these projections, was estimated to exceed the contributions transferred to pillar II around 2016, meaning that the need for explicit financing of the transition cost would wear off by that time. The total cumulative transition cost defined in such a way is projected at 9% of GDP.

It should be noted that the initial transition cost estimates (1999) were much higher – ranging between 20-30% of GDP in the first two decades of pillar II operations. The difference in estimates occurred due to lower participation of generation aged 40-50, who had the right to choose (23% instead of the expected 50%), and the overestimated gross wage – the base for pillar II contribution[126].

In the period before 2006 the explicit cost which was to be financed amounted to 1.2 % of GDP annually (Table 5-12). However, pension supplement to pillar I benefit introduced in 2007, at a rate ranging from 4% for pensions realized in 1999 up to 27% for pensions realized as of 2010, as well as the increase of anticipated old-age and minimum pension, has pushed up pension expenditures under pillar I and therefore explicit transition cost, by approximately 0.4% of GDP annually.

[123] Anušić, Z. *et al* (2003) "Pension reform in Croatia", *Social Protection Discussion Series*, No. 0304, The World Bank, p.69

[124] This is, in fact, a definition of "explicit" transition cost that takes into account - already in calculations of the expenditures - a part of its financing as well. Please see Section 4.1. for the definition and different ways of financing the transition cost. Pillar II introduction costs – "transition cost"

[125] Anušić, Z. *et al* (2003) "Pension reform in Croatia", *Social Protection Discussion Series*, No. 0304, The World Bank, p.71

[126] Anušić, Z. *et al* (2003) "Pension reform in Croatia", *Social Protection Discussion Series*, No. 0304, The World Bank, p.72

Table 5-13 **Transition Cost Assessment for the Period 2002-2006**

	2002[a)]	2003	2004	2005	2006	2002-2006
1 Average annual wage (HRK)	29760	47280	50076	52500	55224	..
2 Average annual contribution to pillar II (5%)	1488	2364	2503.8	2625	2761.2	..
3 Number of contributors	983,310	1,070.932	1,170.092	1,248.931	1,322.010	..
4=2X3 Transition cost (% GDP)	0.88	1.40	1.48	1.52	1.58	6.86
5 Savings in PAYG (% GDP)	-0.71	-0.59	-0.21	-0.28	-0.38	-2.17
6=4-5 Explicit transition cost (% GDP)	0.17	0.81	1.27	1.24	1.20	4.69

a) Data for 8 months (since May 2002)

Source: The author's estimation

The funds necessary for financing the "explicit" part of the transition cost are transferred from the budget. Around 38-40% pillar I expenditures are financed from the budget. If it were not for pillar II introduction, the budget would have to cover roughly 25% of costs. Pillar II financing cost is a large burden for Croatia in any case, especially now at the time of the economic crisis, and would have been even bigger if pillar II contribution rate had been raised like the World Bank and fund managers proposed.

More than 70% of pension funds assets are invested in government securities, which indicates that the complete transition cost up to now has been financed by public debt increases, more precisely, by the government borrowing from pension funds.

Legal Framework – Regulation and Procedures

The procedures and conditions for the beginning of operation of pillar II (and pillar III) were similar to other transition countries which accepted the three-pillar system:

- Pillar II participation is mandatory for all under 40 years of age;
- Private pension funds are not legal entities;
- Fund's assets are managed by a separate company;
- The entire procedure involving setting up and operation of pension fund is overseen by the Croatian Agency for Supervision of Pension Funds and Insurance (HAGENA) which later evolved into HANFA (Croatian Financial Services Supervisory Agency);

– The minimum initial/charter capital amounts to $ 8 million (HRK 40 million) and 80 000 members in the period of three years. High initial capital and large number of fund members are stipulated with a view to limiting the number of pension funds in the market and ensuring that only reputed (rich) investors enter the market. In 2007 the requirement on minimum number of fund members was removed, with the explanation that it hinders the entry of new funds in the market.

One distinctive feature of the Croatian model is the Central Registry of Insured Persons – REGOS. It was founded in 1999, as a clearing house with a task of collecting and transferring mandatory contributions to the funds and record-keeping of individual accounts. REGOS is financed from the budget, not by contributions. The general opinion was that a central registry would be a good solution, not only because of lower administration costs and higher quality information, but also as a way to improve contributions and wage tax collection and relieve employers of excessive reporting. Together with other organizational changes regarding collection of taxes and contributions, the new system brought about a rise of all contributions already in the first year.

However, REGOS did not exercise the clearing house role such as the one of Sweden's PPM for example (see *section 4.2*). The initial idea, with a view to ensuring cost reduction, higher quality and more consistent information, as well as disincentivising pension companies from spending money on aggressive marketing and direct communication with fund members, was for pension companies to have only aggregate financial data (the so called "blind accounts"), instead of information on each fund member. However, the idea was not translated into regulations with sufficient precision, so as early as 2002, REGOS started submitting individual account data to pension companies which begun to use them in marketing, communication with members etc. Pension companies naturally wanted to have the information on their members and eventually this option was more convenient for REGOS (the state) as well, since it reduced the costs of sending written information to fund members,. Accordingly, instead of the initial legal requirement for REGOS to submit annually written information to fund members on turnover and balance of individual accounts, the law was amended in order to shift the responsibility to pension companies.

Therefore, the future role of REGOS remains an open issue, especially

in the context of the entire public revenue collection system.[127] REGOS' scope of work was reduced in 2006 (it ceased to collect data on health and unemployment insurance contributions, as well as on the wage tax).

Guarantees in Pillar II

The return on individual accounts is guaranteed in relation to the reference rate of return, which is calculated as the annual (as of 2007, three-annual) pension funds' weighted rate of return, decreased by two percentage points. The rate is calculated once a year. The intention behind it was actually to reduce the probability of exercising the guarantees.

In this manner, the guaranteed rate of return was even more lowered in comparison to other countries with similar guarantees of minimum return in pillar II (in Hungary for example, the guaranteed real rate of return was 15% lower than the average yield on government long-term securities). Croatia applied a principle whereby the guaranteed rate of return was one third of the reference rate of return if higher than zero, that is, it amounted to a three time higher figure if the reference rate was below zero. It was an intentional move in order to avoid a situation where overly high guarantees (actually paid by fund members) would decrease effective rate of return on their individual accounts, that is, incentivize too aggressive and similar investment strategies by portfolio managers.

Since 2007 the guaranteed return is exercised if a fund's return falls by 6 percentage points below the reference return (weighted average of funds' returns in the last three years).

If the fund's less than guaranteed return triggers the guaranteed return, individual accounts will be increased up to the guaranteed rate of return. The return is covered from the guarantee deposit, part of the initial/charter capital (up to 20%) and the state budget. However, as can be seen, the entire guarantee system is set to avoid the activation of guarantees in the first place.

Once a person is fully vested, all of his/her assets are transferred to a pension

[127] Anušić, Z. *et al* (2003) "Pension reform in Croatia", *Social Protection Discussion Series*, No. 0304, The World Bank, p.74

insurance company chosen by the individual account holder, and the form of pension and the manner of withdrawal are agreed upon[128]. The annuities are indexed by CPI in accordance with the law, during a person's lifetime. The lifetime annuities are treated in the same manner with both sexes (universal sex tables), which virtually means a redistribution of 10% of total assets from men to women because of different life expectancies. Pillar II annuities are fully guaranteed by the state[129] (which is not the case with pillar III annuities), as opposed to accumulation stage when, as said, the whole investment risk is borne by individual account holders, with a certain minimum protection ensured through guaranteed return.

5.2.3. Structure of Pillar II

Pillar II Participation and Market Concentration

Implementation of pillar II was very efficient. All the contributors under 40 years of age were required to enter pillar II; 87% of them chose a pension fund by themselves. However, in 2002, only 24% or around 70,000 of the contributors, aged 40-50, opted for pillar II. In 2006, 77,492 joined the pillar II, out of whom 78.5% did not chose the pension fund by themselves, but instead REGOS made a choice for them, on the basis of its legal competence.

In 2002, mandatory inclusion in pillar II for contributors below 40 years of age, and optional entry for those between 40 and 50 years of age, following an intensive public campaign launched by the government and pension funds of course, brought about only 25% (120,000) new system participants instead of expected 50% of opting beneficiaries (in Hungary the participation was much higher - even 80%). The reason was that the projections had shown the

[128] Pillar II pension types are as follows: *single benefit* (paid to the beneficiary for the rest of his/her life), *joint-and-survivor* (paid to the beneficiary for the rest of his/her life and after his/her death, minimum 60% of the amount to the spouse for the rest of his/her life), *single with guarantee period*, *joint-and-survivor with guarantee period*. The guarantee period, if agreed upon, cannot be shorter than 5 years. The guaranteed period covers the case where beneficiary or both beneficiaries of joint pension die before the expiration of the guarantee period. In that case, minimum 50% of the benefit is paid to the designated beneficiary until the end of the guarantee period. The designated beneficiary can be a child, spouse or some other person.

[129] In case that the company responsible pillar II benefits is incapable of payout, the responsibility is taken on by the state, the pension company ceases to operate, while the remaining technical reserves and benefit payout contracts are transferred to another company.

pensioners would not be in a more favorable position in the new system.

The frequency of switching was relatively low. Fund concentration is very high - 88% of all II pillar participants belong to three pension funds.

In 2006, a total of HRK 3.5 billion were contributed to pillar II. Payouts, due to individual account closing, amounted to HRK 51.5 million. Although in the following period withdrawals will gradually increase in relation to the age structure of fund members, further growth of pillar II contributions and pension funds assets is expected.

Table 5-14 **Contribution Rates and Number of Contributors in Pillar I and Pillar II, and the Number of Pillar II Funds**

	Contribution rates		Number of contributors		Number of funds
	pillar I	pillar II		pillar II	pillar II
1999	21.5	..	1,406.091	..	..
2000	21.5 (19.5)*	..	1,380.510	..	..
2001	19.5	..	1,402.102	..	..
2002	14.5 (19.5)	5	1,421.981	983,310	7
2003	15 (20)	5	1,443.995	1,070.932	4
2004	15 (20)	5	1,460.105	1,170.092	4
2005	15 (20)	5	1,498.877	1,248.931	4
2006	15 (20)	5	1,538.170	1,322.010	4

* The rate was changed on June 1, 2000

** The rate for contributors who are not participating in pillar II is presented in brackets

NOTE: The contribution level is not comparable to the one in Serbia. Generally, it is not recommendable to compare nominal contribution amounts given the difference in pension financing in the two countries. In this specific example (Serbia and Croatia), Serbia's contributions are intended for financing not only pension expenditures, but also many other expenses under old-age and disability benefits, as well as pensioners' health insurance, while in Croatia the contributions are earmarked exclusively for pension financing.

Source: Vukovic, 2005; Croatian Pension Insurance Institute, HANFA

It needs to be mentioned that the assets of mandatory private pension funds in Croatia compared to other developed countries still remains modest. The assets amounted to 3.7% of GDP in 2004, and in 2005 and 2006 saw 5.1% and

6.34 % increase respectively. In Hungary, Poland and the Check Republic the percentage ranges between 4 and 8%.

Costs and Fees

Management company fees are capped by the law.

Table 5-15 **Mandatory Fund Management Fee Structure**

	Up-front fee (% of contributions)	Assets under management fee (% of fund assets)	Success fee (% of return)	Exit fee (% of assets)	Brokerage fee	Custody bank fee (% of fund assets)
Jan-02	0.8	0.8	25	✓	✓	0.1
Jul-03	0.8	1.2	✓	✓	✓	0.1

Source: Anušic, ILO presentation, and the Law

Pension fund management companies can charge four services (expenses) deducted from the fund assets:

Up-front fee, an entry charge, calculated as 0.8% of total paid-in contributions (net contribution paid on an individual account in a custodian bank);
Asset-under-management fee - 1.2 % of total fund assets per annum, while Hanfa may prescribe a lower rate (as of July 2003). In 2007, according to HANFA decision, this fee amounted up to 0.95%;
Switching fee (if the transfer is conducted in the period shorter than five years; in 2003 reduced to 3 years);

Beneficiaries have an additional charge (exit fee), when transferring to a pension payout company which is entitled to charge a one-off payment for the rendered services, amounting to 5% of the total accumulated sum (as of 2007, this fee amounts to 10%, while HANFA may prescribe a lower rate).

However, there were some changes regarding this issue in 2003. In the beginning (with the first law in 1998) up-front fees were capped to 0.8% of paid-in contributions and the asset management fee to a maximum of 0.8 % of fund's asset value. It was stipulated that "all expenses regarding acquisition and transfer transactions of mandatory fund assets are to be borne by the

pension company", therefore brokerage expenses should have been covered with fund management fees. However, in 2003, not only the cap for the management fee was raised, but also the transaction costs were charged to the fund assets. However, the previously applied "success fee" (one third of fund's real annual return) was abolished, as it was seen as inclining fund managers to take riskier investments and chase higher returns, which are unpopular in mandatory pension insurance.

During the initial period, the marketing costs were high (around 32% of charter capital) or around $ 15 million, although the future members primarily based their decisions upon the name of the bank of the pension fund founder. Marketing expenses were 5.4% of average annual inflow to an individual account[130]. As can be seen, the expenses are high, especially bearing in mind the fact that REGOS undertakes all the costs of administering payments into funds.

The calculations indicate that as a result of such high expenses, the average annual real decline of return would be 1.4% in the next 40 years. Calculated relative to contributions, the expenses would exceed 15% in 2015 and reach almost 20% in 2033. REGOS administrative costs should be added to his as well (financed from the budget) which as early as the beginning of 2002 amounted to 1.5% of pillar II accumulated assets. In the long run, pillar II expenditures would stand at two percent points of the annual return on invested assets.[131] The fee charged from fund assets now amounts to 0.95%, so the adverse effect of fees to the amount of pillar II benefits remains high, though somewhat lower than stated.

5.2.4. First Experience – Pillar II Performance

Portfolio Strategy

Statutory solutions imposed a very conservative portfolio strategy. Minimum 50% of fund assets are to be invested in long term government securities, foreign investment should absorb maximum 15%, maximum 30% can be invested in

[130] Anušić, Z. *et al* (2003) "Pension reform in Croatia", *Social Protection Discussion Series*, No. 0304, The World Bank, p.60

[131] Anušić, Z. *et al* (2003) "Pension reform in Croatia", *Social Protection Discussion Series*, No. 0304, The World Bank, p.47

domestic corporate bonds and not more than 30% in equity and investment funds. A maximum of 5% can be invested in securities of a single issuer.
In 2007, legislation was harmonized with the EU regulations, and part of the amendments will start to apply after Croatia's entry into EU. Specifically, the requirement that minimum 50% of pillar II funds assets must be invested in Croatian government securities will no longer apply, instead, that percentage will also include EU countries' government bonds. The restriction on investments in foreign markets will also be abolished.

Investments into government bonds are far beyond the statutory requirement, which can be explained by a lack of (quality) securities the funds could invest in.

Table 5-16 **Mandatory Pension Funds Total Assets Investment structure (%)**

Type of assets	2002	2003	2004	2005	2006
DOMESTIC ASSETS	*95.2*	*91.5*	*92.8*	*89.0*	*90.9*
of which					
Securities and deposits	89.0	86.3	88.7	85.8	89.2
Shares	4.8	3.3	3.5	2.8	5.3
Government bonds	77.9	68.0	76.8	72.6	71.3
Municipal bonds	0.0	0.0	0.8	0.5	0.4
Corporate bonds	0.0	3.0	6.5	3.7	3.0
Closed-end investment funds	1.1	0.0	0.0	0.0	0.0
Open-end investment funds	0.0	0.0	0.0	2.2	7.2
Short-term securities	5.1	10.9	0.7	1.4	0.1
Deposits	0.1	1.1	0.5	2.7	2.0
Cash	3.7	2.5	2.7	1.2	0.9
Receivables	2.5	2.7	1.3	1.9	0.8
FOREIGN ASSETS	*4.8*	*8.5*	*7.2*	*11.0*	*9.1*
TOTAL ASSETS	100	100	100	100	100

Source: HANFA

In 2002, pension funds invested around 78% of their assets in government bonds, because the state had issued Euro bonds in order boost the pension market. The bonds were set to mature in 12 years' time, worth EUR 500 million, in three semi-annual tranches, with the annual return of 6.875%. Furthermore,

a discount of 30bps was offered for the first issue, which produced a pronouncedly high return on these bonds (gross 11.1% on average in 2002). The success fee was also high, and stood at 2.1% of NAV. This initial success was obviously forced by the state in order to popularize pillar II (of course, at taxpayers' expense).

Following 2002, pillar II funds continued to mainly invest in government bonds - 71.3% of all assets were invested in these securities in 2006 (Table 5-15), the only distinction being an increase of investments in domestic corporate shares (3-6%) and open-end investment funds (7.2% in 2006).

Profitability of Pillar II - Net Real Return

The following table shows the average weighted return of four mandatory private funds (measured by MIREX) for the period 2002-2006. Exempting the initial year 2002, when the state, as already mentioned, artificially forced high returns in these funds, the real return or growth of contributions in all the other years was more than modest. One could argue that alternative investments (including interest on long-term saving deposits) rather than contributing to pillar II, would yield higher returns. However, the return of mandatory funds is comparable to the return of pension funds in developed countries, mostly characterized with conservative investment policy (with large portion of portfolio invested in government securities) due to which their return is generally lower than the return of investment funds.

Table 5-17 **Real Growth of MIREX and Net Real Growth of Paid-in Contributions in Concurrent Year**

	MIREX[1]			Net real growth of contributions paid-in during the current year [2]	
	MIREX	Inflation	MIREX - Real growth	Up-front fees	Net real growth
2002	9.12	1.7	7.30%	0.8	6.44%
2003	7.3	1.8	5.40%	0.8	4.57%
2004	7.37	2.1	5.17%	0.8	4.33%
2005	6.78	3.3	3.37%	0.8	2.55%
2006	7.78	3.2	4.44%	0.8	3.61%

1) Net of assets under management fee
2) Net of all fees - assets under management fee and up-front fee (from contributions)

Pensions Realized under Both Pillars

Around 200 women realized the early old-age pension under both pillars, on average 25% lower than the supplemented pension exercised under pillar I only. The average anticipated old-age pension under both pillars is HRK 1,965 (pillar I – HRK 1,885, pillar II around HRK 80, December 2008). Low level of benefits can be attributed to:

- This first two-pillar pension beneficiaries are women who contributed only a short period into pillar II and exercised the right to early retirement at a relatively young age, 55-57 years;
- The basic pension that pillar II contributors realize under pillar I is low: 35-60% of the benefit which would be realized under pillar I only for the years of service since 2002;
- Beneficiaries of the basic pension are not entitled to the supplement which belongs to beneficiaries of pensions exercised under the Law on Pension Insurance, ranging from 4% for pensions realized in 1999 to 27% for pensions realized since 2010;
- Pillar II benefit is relatively low (averaging HRK 80), due to the short accumulation period, beneficiaries' young age and long life expectancy tables (higher than the average statistical data) used for pension annuity calculations;
- Pillar II benefits are only indexed to CPI, while pillar I benefits are both wage growth and consumer price adjusted, in 50:50 proportion (the Swiss formula);
- Unfavorable trends in the capital market in 2008 and 2009 have adversely affected pillar II benefits.

5.2.5. Projections for the Following Period

The following projections are based on legal solutions from 2002, hence, prior to 2004 amendments which introduced some innovations in determination of pension benefits.

The structure of pensioners in relation to their number in pillar I and pillar II will gradually shift to the benefit of the new mixed system. The end of 2006 saw the initial withdrawals of anticipated old-age pensions under both pillars, while from 2012 the first group of pensioners (women) will start receiving old age pensions from pillar I and II. Around 2036, the number of retirees who receive their pension entitlements from both pillars will be higher than the number of pensioners who will stay/be in the PAYG system.

According to moderate macroeconomic projections, the total PAYG expenditures will have dropped to 8.2% GDP by 2040 (5% for PAYG pensions only and 3.2% for basic pensions in the two-pillar system). In 2040, total annuities will increase to 3.6% of GDP.

Given that PAYG benefits are indexed to the Swiss formula, the average pension relative to average wage ratio will decline from 42.1% in 2004 to 38% in 2012. This is the year when pillar II will start paying old age pensions (payout of anticipated old age pensions begun in the end of 2006). However, with an assumption of real gross return of 4% in the accumulation stage of pillar II and 3% in the payout phase, the aggregate replacement rate (the ratio of average pension under both pillars relative to average wage) will not improve much, and in 2040, it will amount to not more than 37%. That is why the analysts have set the requirement that a higher pillar II rate of contributions is needed in order to have adequate pensions. Thus, for example, with 7% contributions to pillar II and with the same macroeconomic assumptions, in 2040 the average pension would reach 47% of the then average wage.

Based on these calculations, Croatian analysts have reached the following conclusions[132]:

- Regarding pillar I, it is generally believed that the minimum pensions are too generous and in actuarial imbalance with the minimum level of contributions. When it comes to early retirement, actuarial calculations show that real annual decrement should be 5-6% instead of the current 3.6%.
- Concerning pillar II, it is thought that the contribution rate should be raised from 5% to 7% at the cost of an increased fiscal deficit, because otherwise, it is not possible to have a minimum acceptable replacement rate and pension/wage ratio.
- It is necessary to decrease the legally limited (capped) fees and expenses

[132] Anušiæ, Z. *et al* (2003) "Pension reform in Croatia", *Social Protection Discussion Series*, No. 0304, The World Bank, p.73-75

and to facilitate the entry of new funds and portfolio managers.
- HANFA is required to oversee portfolio concentration, in part to have a better view of the effect of delegating the primary responsibility for guarantees on portfolio managers.
- A combination of pillar I and pillar II is only possible if sufficient adjustments in pillar I are feasible.
- A central clearing house, if well designed and efficient in operation, poses a good solution for pillar II and for better public revenue reporting as well. Nonetheless, administrative costs are not automatically decreased in such a way, if the legislated fees are incorrectly set or overly rigid. In addition, REGOS did not assume all the functions that a clearing house of that type should perform.
- The legislated (capped) fees are high.
- There is a strongly manifested problem of pension fund concentration regarding portfolio investing due to shallowness of the capital market.

Croatian analysts claim, that in the long run, a combination of income stemming from pillar II annuities and the basic pension from the reduced pillar I, results in higher total pension benefits. However, these estimations have not been presented anywhere. Furthermore, low contribution and return rates at the outset of pillar II, relatively low basic pillar I pension, as well as the changes in legislation in 2004, do not support such conclusions. In addition, pillar II pension benefits realized so far are approximately 30% lower than the pensions projected in the cited studies of the Croatian analysts. One of the reasons is for example, the method used for calculation of pension annuity by the Raiffeisen insurance company which is based on significantly longer life expectancy compared to the official statistics, and without taking into account the real return in the payout phase.

One additional projection is presented in Table 5-18[133]. The projection was also made on the basis of statutory solutions from 2002, under assumption no other changes in legislation occur. According to the projection, the total replacement rate of an average earner receiving a pension from the mixed system (from both pillar I and II), will be 61.6% net earnings for those who have just entered the labor market and retiring in 2047 (men). The ratio for women will be significantly lower (around 50%) because of their

[133] Whitehouse E. (2007), *Pension Panorama*, World Bank

shorter length of service. However, these projections are overestimated as well– in most recent analyses pensions from the both pillars are projected more unfavorably. It is possible that one of the reasons for this discrepancy is the assumption concerning the real wage growth rate which amounts to not more than 2% per annum, while in reality higher rates are expected. The other reason is that unrealistically long years of service are assumed (45 years)[134].

In a mixed pension system, the replacement rate is lower for higher earners, owing to the fact that the basic pension from pillar I is calculated more favorably for lower earners, therefore there is a level of redistribution (Table 5-18). However, these differences are not significant - the mixed system is still mainly earnings related, and only in part redistributive.

Table 5-18 **Prospective Replacement Rate for Workers with Different Earning Levels***

	Individual earnings, multiple of average					
	0.5	0.75	1	1.5	2	2.5
Male						
Gross replacement rate	47.3	41.3	38.4	35.4	33.9	33
Net replacement rate	66.7	63.1	61.6	59.7	59.6	58.9
Female						
Gross replacement rate	39.1	33.7	31.1	28.4	27.0	26.2
Net replacement rate	55.2	51.5	49.9	48.6	48.8	48.3

*Hypothetical replacement rates for those that joined the labor market in 2002 and that will retire in 2042 (women) and in 2047 (men). Pension from pillar I and pillar II included. Assumption about the pillar II return is 3.5% real net of all expenditures.

Source: APEX model (Edward Whitehouse), published in the WB Pension Panorama

As mentioned, all these projections relate to legal framework prior to 2004. In that year, changes in legislation set out the stipulation that pensions should be indexed to growth of wages only ("The Law Amending the Pension Insurance

[134] For further details on methodology of the projections, please refer to: Whitehouse, E. (2007) *Pension Panorama* or K. Stanic (2008), "Old-Age Income Replacement by Pension System in Serbia – Measurement and International Comparison", *Quarterly Monitor of Economic Trends and Policies in Serbia*, No.13, FREN

Law"). This one, and a series of other 2004 changes, aimed at enhancing the status of pensioners (adding HRK 100 bonus, plus 6% supplement) followed by additional supplements intended to eliminate differences in pension levels earned in different periods, are all a consequence of huge political pressures exerted by the pensioners. Upon realizing that in 2004, the average pension relative to average wage ratio declined to 42%, the state recognized the necessity of adjusting the system by means of various interventions and legislative tuning. That is why there still remains an open question, whether the 2006 return to the Swiss formula is only a temporary measure or the new government will change it again, if the average pension relative to average wage ratio should continue to deteriorate.

5.2.6. Conclusions

Croatia braced itself to introduce pillar II for a long period of time – seven years – and pillar II was brought in following the notorious problems of a growing PAYG system deficit and aging population, with the initiative and large support by the World Bank.

In the meanwhile, Croatia undertook some vital parametric pillar I reforms.
The idea on forming a single clearing house added to the rationality and general enhancement of contribution collection. It also modulated the wage-reporting process.

In the period 2002-2006, effects of pillar II investments in the capital market were inconsiderable. More precisely, the pillar II contribution inflow of more than EUR 0.5 billion annually, certainly added to the volume of trading and development of the capital market. However, due to relatively limited supply of securities and conservative investment policies, most of it was invested in government securities. Hence, the effectiveness of the funds' allocation through the capital market is questioned.

The real rate of return was modest in spite of an intensive campaign and incentives provided by the state at the initial stages of the new system.
Fund concentration is immensely high (only 4 funds).

Relative costs and fees of Pillar II operation decreased relative to the period

2002-2006. However, they are still high. The asset-under-management fee amounts to 0.95% of total fund assets, per annum. Combined with other charges and fees (such as the contribution fee, exit fee, custody bank fee and transaction costs) the costs reach approximately 1.3% of assets annually.
In addition, in case when 70-80% of pillar II assets are invested in government securities, there is no mention of increased savings and investments – one of the most important arguments for introducing pillar II.

Because of the problems regarding the transition cost financing, enduring times of hardship caused by the financial crisis and weak performances of pillar II, Croatia is at the moment considering (the political decision has not been reached yet) the possibility of allowing those who voluntarily joined pillar II to switch to pillar I only. In this way, the problem of these pensioners would be solved (the problem of pensioners younger than 40 remains), and therefore the transition cost would be lowered.

Judging by the experience to date, it is safe to conclude that introduction of the mandatory private pension insurance did not resolve any of the essential problems of the Croatian pension system nor did it promise a safe and socially acceptable future for the growing generation of pensioners. The aspiration to shorten the transition cost period and hence decrease budgetary pressure result in a low average pension relative to aware wage ratio. Such a situation creates and will continue to create constant tensions and requests from pensioners for "extraordinary indexations" of pensions to the growth of wages, as it already happened in 2004. As in Hungary, real rates of return on pillar II invested assets are low and its operational costs are overly high.

The initial period of the pension reform (2002 – 2006) speaks in favor of some positive effects of the parametric reforms (increase in retirement ages, changes in determining and indexing pensions etc) and organizational changes regarding collection of contributions, but not of a headway made by introduction of pillar II. Finally, let us mention that private voluntary pension saving/insurance has good results (higher real return rates), because of a growing legal flexibility in terms of portfolio strategies, as well as fiercer competition, state incentives given to members of voluntary pension funds (to HRK 1,250) and tax breaks. Therefore, it is not surprising that in 2006, in relation to 2005, the number of contributors in pillar II increased by 47%, although assets in the funds still remain modest.

Perhaps these tendencies indicate that a thorough PAYG system reform and additional incentives for different forms of retirement savings present a more acceptable solution, particularly for the pensioners, rather than introducing the costly, low-return and uncertain mandatory private pension insurance.

5.3. Chilean Experience

The Chilean pension reform experience is precious for at least two reasons. In the first place, this was the first world-wide reform, with a completely new concept of a reform foundation – privately managed pension insurance – afterwards to be repeated in other countries. The system became a strong competitor to classical public insurance. The other reason is that the system works. It has endured and proved that a pension system made of a combination of private initiative, capital market and state regulation can avoid many perils and provide pension benefits to its affiliates. The way it works will be presented in the continuation of the paper.

The Chilean reform has been more or less emulated in almost all Latin American countries, with some modifications. Therefore, it might be interesting to see their experience, as well. An overview of experience of several countries which have followed the same or a similar model can indicate some difficulties or results, which would be otherwise elusive. This is that much more important, since the Chilean model boast of an excellent regulation and supervision of private pension funds, while some other Latin American countries have weaker administrative capacities than Chile.

Prior to 1981 reform, the Chilean pension system was state-run, based on the pay-as-you-go (PAYG) system generating a deficit of a couple of percents of GDP per annum (3.1% in 1978, and 1.7% in 1980). In 1980, there were only two active contributors per pensioner. There were 150 different pension regimes and 35 different pension funds. And in spite of this, the participation of workers in pension insurance was far from satisfactory, while the projected budgetary fiscal burden rapidly swelled. Therefore, a radical reform was carried out, instigated by the Minister of Labor - José Piñera.

5.3.1. Introduction - The New Chilean System

The Chilean pension system is composed of three pillars. *Pillar I* is a government-run pension system with three components: (1) public-assistance pension provided for the aged poor; it is not dependent on earlier payment of contributions, and its amount is contingent on the other sources of income citizen have at their disposal;(2) the government guarantees a minimum pension to contributors of mandatory private pension funds, which is allotted as a supplement, if the pension benefit from the funds is lower than the minimum pension; it is significantly higher than the social security pension; and (3) the old-system remnant, comprising the insured who did not opt out of the government-run pension system in 1981.

Pillar II, comprises mandatory insurance in private pension funds. This kind of insurance is mandatory for all employees, while it is optional for the self-employed. Essentially, this is a system of mandatory savings, where a person's individual contributions are assigned to his/her individual pension account in one of the private funds, and then invested, in order to generate more capital, and to increase pensions at the end of working years. The legislated contribution rate is not less than 10% of monthly salary, but limited to US$ 2,000 in 2007, plus 2-3% for the administration costs of disability and survivor insurance. Workers are allowed to be members of one fund only, however, they can switch between funds.

The minimum retirement age is 65 years for men and 60 years for women. Early retirement is possible, if the accumulated funds on a person's individual account are sufficient (to provide for 110% of the minimum pension). As in every defined-contribution plan, the actual pension received depends on the level of contributions paid-in, investment returns and costs of operation of the fund. The life expectancy is also taken into account (in accordance with the tables) and the number of family members entitled to receive the survivor's pension benefits.

There is also *pillar III* of pension insurance, which is represented by voluntary insurance in private funds. It is called *pillar III* in accordance with the World Bank terminology, although it mostly represents an extension of pillar II. Namely, the pillar II insured may place additional amounts into their accounts in the same funds (more than the statutory 10%), induced by tax incentives.

Therefore, pillar III shares the same institutions (the same funds) and government regulation with pillar II. In 2007, there were approximately 7.4 million insured people in mandatory pension insurance system and around 1.5 in the voluntary.

During the reform period, the insured were given an opportunity to choose whether to remain in the old state system, or to transfer to a new one. If the second option was chosen, the state recognized past contributions made to the public fund, i.e. the rights that would not be used, granted the government bonds and deposited them in the workers individual accounts in private funds. The bonds were paid in full upon retirement. They depended on the number of years of service and life expectancy, and were financed from the budget. In this way, the state managed to cope with the transition cost of the reform. The pensioners who had already retired, remained in the old system financed by the state budget, but the new workers were under obligation to joint the new system.

The most important and revolutionary part of the Chilean pension system is pillar II with its mandatory savings accounts and private funds. The individual savings accounts were administered by pension funds managed by private pension companies, known as AFPs. Competition was given the highest priority in the reform, since it was expected to lower the administrative costs, to boost investment returns and provide for better client services. At the outset of the new system, there were 12 AFPs.

In 1994, it peaked at 21 and in 2007 their number, after consolidation, shrank to 6.In the beginning, pension fund investment restrictions were very tight. As the starting point was the inexperience of their managers with the (world) capital market and the need to divert the money to safer placements, therefore investments in corporate and foreign securities were not allowed. In the mid-1980s, investments in domestic equities were allowed, although limited volumes, and during the middle 1990s in foreign securities, as well. Since 2004, the foreign securities cap has been 30% of total investments. However, an increase to 80% is considered nowadays, due to higher returns compared to the domestic market. In 2003, the investment structure was as follows: Government securities 24%, deposits and certificates guaranteed by financial institutions 26%, foreign securities 24%, stocks 15%, corporate bonds 8% and mutual funds 3%.

Pension companies (AFPs) charge various fees from contributors: fixed up-front fees, proportional fees on contributions, exit fees etc. These fees cover the real costs and they provide for AFPs revenues.

5.3.2. Effects and Issues

Savings and transition cost The first issue is the relation of the Chilean pension system to the economic growth. Proponents of this pension model claim that the pension reform has significantly contributed to the significant increase in national savings and economic growth, while opponents disagree.

The saving rates hiked during the pension reform and from 12% of GDP in the 1970s, reached 23% in the 1990s, and remained at the level.[135] Economic growth too, experienced rapid expansion during the last decades. However, whether the pension reform has produced increased savings still remains to be seen. Namely, as even Orszag and Stiglitz[136] cautioned, the fact that this type of the pension system represents savings *per definitionem*, does not necessarily mean the total savings of a country are growing, since it can induce a decline in another component of total savings – for example, of persons who will save less for old age on their own. As Gill, Packard and Yermo estimate, the foremost part of the national savings increase in Chile is a consequence of government saving growth (budgetary surplus etc.), while the contribution of the pension reform in that respect is, at best, modest.[137]

Anyhow, even if the pillar II savings were not accompanied by a decrease of voluntary/private savings, the entire Chilean system generated a saving deficit since a considerate part of the pension system expenditures were covered by the budget. As in the period 1981-2004, the pension expenditures covered by the budget amounted to an average of 5.5% of GDP, and the accumulated savings in the new system totaled only 2.5% of

[135] K. Niemietz - From Bismarck to Friedman, 15th IEA Discussion Paper, January 31, 2007

[136] P. R. Orszag and J. E. Stiglitz - **Rethinking Pension Reform: Ten Myths About Social Security Systems,** Presented at the conference on New Ideas about Old Age Security, September 14-15, **1999**

[137] I. Gill, T. Packard and J. Yermo – Keeping the Promise of Social Security in Latin America, Stanford University Press and World Bank, 2005

GDP in average, consequently the total result is negative. This means, the pension system generated an average net deficit of 3.0% GDP per annum, during the observed period.[138]

Thus, we have arrived at the fiscal cost of the pension reform, which has been unexpectedly high in Chile, or at least higher than planned during the design and implementation of the reform. If military pension benefits are deducted from the pension fiscal cost, it still remains that the state budget, deprived of any pension contributions, supported the reformed pension system with not less than 4.3% of GDP, in between 1981-2004. This is a high transition cost, comprising several elements:

1. Old-system pensions, i.e. pensions of those who already retired in 1981, and of retirees who opted to stay in the state pension system.
2. Bonds issued in recognition of the entitlements gained in the state system prior to 1981, which the insured transferred to private funds (pure transition cost)
3. Minimum pension guarantees for the pillar II insured.

The deficit diminished over time, but very slowly. Even during the following years, it amounted to 3-4% of GDP. However, the participation of old-system pensioners declined (due to a decrease in the number of pensioners), while participation in financing bonds and minimum pensions increased.

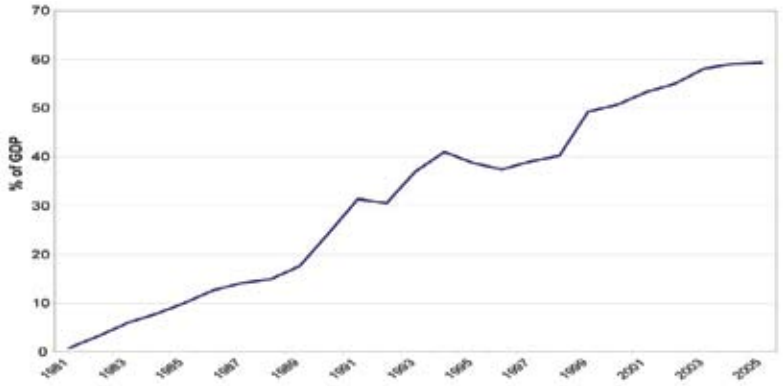
Chile was able to endure such high transition costs over a long period of time, due to a very strict fiscal policy, which in the observed period managed to create an average central budget surplus of 8.5% (net of pensions). All the countries pondering on the similar pension reform must, of course, bear in mind the high transition cost and must find the way to address the problem: whether to finance it from the state budget, which demands huge strains on the fiscal policy and surpluses, or to decrease the entitlements of the insured, a solution many countries resort to, including countries in Latin America, as will be seen.

Investments and returns. The main source of power of the reformed Chilean system lays in the rapid capital growth of private pension funds,

[138] A. A. De Mesa and C. Mesa-Lago – The Structural Pension Reform in Chile: Effects, Comparisons with other Latin American Reforms, and Lessons, Oxford Journal of Economic Policy, 1/2006, p.152-154 152-154

the foundation for future payments of pensions as well as in high returns of private funds' investments. Namely, until 2005, the level of their capital shot up to 60% of GDP, as the following chart shows:

Figure 5-1 **Asset Value of Pension Funds, 1981-2005 (% GDP)**

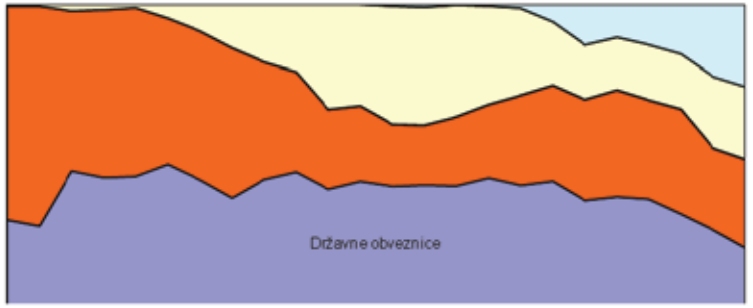


Source: Social Security: The Chilean Approach to Retirement, CRS Report for Congress, May 17, 2007

Chile is the third country in the world considering its share of pension fund capital in GDP, following USA and Great Britain.

The global structure of pension funds' capital investments is illustrated in the following chart.

Figure 5-2 **Investment Structure of Pension Funds, 1981-2004**



Source: G. Reyes – Development of Pension Reform in Chile, Superintendency of Pension Funds Administrators of Chile, 2006

The present global outline does not reveal fully the internal structure of investments. Thus, in 1983, 51% of the total amount was invested in mortgage bonds and 44% in government bonds, while only 3% in bank deposits, 2% in corporate bonds with no investments were made in corporate securities. Overly high risks of such an intense concentration induced relaxation of investment restrictions and usage of a wider list of instruments: Private corporate stock and bonds (companies and financial institutions), foreign instruments, exchange rate fluctuations hedging instruments, shares in investment funds, convertible bonds etc. This resulted in a gradual diversification of investments and consequently a much more balanced situation in 2004: 18.7% in government bonds, 28.5% in financial institutions, 15.7% in stocks, 26.8% in foreign securities and 10.3% in non-financial institutions and mutual funds. This helped reduce the risk funds are exposed to and boost the profit potential.

The real returns (following the inflation) to investments of the capital were high and reached 10.3% in the period 1981-2004, which is a huge success though difficult to sustain in the long run or duplicate in other countries. With time, Chile itself experienced a decline in the rates of return: from 14.2% in the period 1981-1991, to 8.7 in the period 1991-2004. Furthermore, the said 10.3% represents a gross return of funds, while the return on individual saving accounts (gross return net of administrative costs) was significantly lower and amounted to, still decent, 6.2% for the lower-income groups of insured and 8.2% for the more affluent,[139] with further reductions in recent years.[140]

The returns would probably be higher, if it was not for the detailed investment regulation for private funds. In spite of constant relaxation of rules, even now, there are approximately one hundred investment restrictions. The purpose of the regulations is by all means positive – to reinforce safety of long-term investments – but the price paid for it was rather expensive, bringing down the rate of return in the long run. However, regulatory controls of operation of pension funds (not only regarding investments but also supervision, creation and management of reserves etc.) undoubtedly contributed to the fact that in the last quarter of century there were no frauds or failures of funds with losses of the insured persons' capital.

[139] The difference stems from the fixed costs which eat up greater proportions of smaller savings.

[140] A. A. De Mesa and C. Mesa-Lago, ibid

Administrative costs. Sizeable administrative costs of private funds are one of the least favorable features of the Chilean reform, and accordingly the fees they charge. Certainly, the funds have costs and primarily costs of insurance sale agents and advertising. At first glance, they are not overly high – a couple of percents of a contributor's salary – nonetheless, they absorb one-fifth of pension contributions, approximately.

To put it more precisely, the net pension contribution of an insured person, made to his/her personal retirement account, amounted to 10% in all decades of existence of the new system. Two charges are then added to the figure: The first one is a fixed amount, not overly high (around 5% of total costs). However, it has an adverse effect to the insured with lower contributions. The second one is variable and in average, totals 2.5% of the insured salary, including the premium towards survivors and disability insurance of 0.75-0.76%, meaning that administrative costs absorb approximately 18.5% of net contribution of an insured person, or around 15% of total deductions for pillar II insurance.

These sizeable fees charged as a compensation for private pension funds' operation, as seen above, induce considerable decrease of net return in individual accounts of the insured, which is manifested in lower pensions, in the end.

The causes of the high expenses are various. Unavoidable real labor costs are the first one. The other comes from mutual competition of funds and their effort to attract new contributors. Consequently, they hire a lot of people. While prior to the reform, the state pension fund had around 3,500 employees, which was a very high number, presently, it amounts to 8,000 employees in private funds, out of which 30% of sales agents. The average participation of sales agent commissions and marketing expenses reached around two-fifths, and during the last years it was reduced to one-fourth of administrative expenses. However, it is becoming evident that competition among AFPs alone, is not sufficient to reduce the administrative costs, because there are only six of them. This is further confirmed by high profits AFPs make, reaching no less then two-fifths of the total revenues from the collected charges.[141]

[141] A. A. De Mesa and C. Mesa-Lago, ibid

Pension levels. An average new-system pension amounts to USD 330 per month, which is one half of an average wage. Many people in Chile were dissatisfied with the figure and made comparisons showing the old system in a favorable light. Thus, a pensioner reprimanded the Chilean pension reform in the New York Times, and said that he would have had a significantly higher pension in the old system.[142] This is true, as is the fact that he had only 24 years of service, which bore little relevance in the old system, while in the new one, it meant a reduced pension, as it should be.

The situation looks completely different when early retirement and lump sum withdrawals upon retirement are taken into account. Namely, around 61% of the Chilean insured from pillar II retire early, and the lost years of service are 9 for men and 7 for women. In addition, a fair number of the insured withdraw considerate amounts of their accounts, if the rest of the accumulated funds guarantee a pension of at least 70% of an average wage. If the two mechanisms of reducing pensions would be removed, if all the insured would retire after full pensionable service, and would not withdraw funds from their accounts earlier on, then the average pension would reach USD 640. This is just below the level of an average wage of pension contributors.[143] Of course, no one can guarantee changes in future pensions and pension averages in a DC system, where the future benefit is contingent on investment returns yielded until the retirement. However, until now the Chilean reform has brought about very decent pension entitlements, admittedly owing to above-average returns, unlikely to be repeated again.

The reform of the pension system also brought a change in the gender differences, in the direction reflecting a deteriorating position of women. The change is not unexpected, since the system of savings accounts has equal rules for both women and men, and pensions merely depend on objective factors, such as the level of paid contributions, returns and life expectancies. However, women were privileged under the old Chilean system, as women in other countries too, to acquire the right to full pension benefit earlier than

[142] The New York Times, January 27, 2005

[143] Report turns heat up on Chilean model, Global Pensions, January 2007

men. And women in Chile have less years of service at retirement and live longer then men, and consequently their pensions are lower now, while in the old system it was compensated through subsidies to women from men.

Market of production factors. Undoubtedly, the pension reform has greatly instigated development of the Chilean capital market. It has brought new institutional investors in the form of pension funds and a significant continuous supply of capital. In this way, the Chilean stock exchange had an annual real increase of around 1/3 per annum, in the pos-reform period. New markets emerged (e.g. life insurance market), financial instruments swelled, funding of capital projects was facilitated, the stock exchange became more efficient, and so on.[144]

Still, inflow of the substantial capital of pension funds to the small Chilean capital market led not only to development of the market, but to overrating of some financial instruments as well,[145] and trading concentration on a limited number of shares. Even one half of value of stocks on the Santiago stock exchange were of only three companies – which might endanger stability of both the capital market and pension funds.

The assumed positive impact of the pension insurance model to stimulation of employment and hiring new people represents one of its major advantages. The arguments follow: In a pay-as-you-go pension insurance, pension contributions are seen as yet another tax, and therefore, it is not felt that it is good to have pension insurance. In another words, pension insurance of this kind creates distortions on the labor market, persons avoid payment of contributions as much as possible and resort to grey economy. This leads to formal unemployment and contribution avoidance, jeopardizing social status of people and their old-age income. On the other hand, pension savings accounts are experienced as one's own. Therefore people will put maximum effort to find jobs in the formal sector with pension insurance, with all positive effects thereof.

Orszag and Stiglitz[146] pointed to many complications of these arguments.

[144] The Chilean Pension System, Superintendencia de AFP, Fourth Edition, Ch. 7

[145] A. A. De Mesa and C. Mesa-Lago, ibid, p.160 160

[146] Ibid

Namely, a model of pension insurance is not crucial, but the level of redistribution, as well: It does not exist in savings accounts and that is why the system is stimulating, while it is present in pay-as-you-go systems and therefore not stimulating. However, redistribution that brings about distortions is possible to be removed in principle, even in the pay-as-you-go systems and to have an equal impetus. Similarly, the arguments in favor of the stimulating nature of savings accounts are based on positive reaction of the labor force, entailing a perfectly competitive labor market in emerging countries, which is most probably an unreal assumption.

Still, it is probable that the pension system reform in Chile brought about positive incentives for the labor market because: (1) the PAYG pension system without redistribution is not an usual alternative, an option under consideration, (2) however, transition and developing countries have labor markets not completely rigid, this leaves some space for correction of distortions (3) the reform usually leads to a significant decrease in pension contribution (it was reduced by half in Chile), additionally cutting down evasion and grey economy incentives. In other words, transfer from the PAYG system to mandatory privately-funded funds provides impetus, although to a less extent than deemed earlier on by proponents of such reform. One empirical paper also suggests that formal employment in Chile is higher due to the pension reform.[147]

Coverage of the labor force. One of the foundational ideas of mandatory and voluntary pension insurance is to cover the entire active population in order to provide everyone with old-age income. And one of the reasons for the 1981 pension reform in Chile was relatively low coverage of active population by pension insurance, although it was higher than in other similar countries.

When the individual savings accounts were first introduced, 95% of the active contributors voluntarily accepted the opportunity to switch to the new system, while all the new workers afterwards were under obligation to join the new system. Still, coverage of the economically active population (the employees) was not at all high, not nearly enough, and this is the area of the

[147] S. Edwards and A. Cox Edwards – Social Security Privatization Reform and Labor Markets: The Case of Chile, Economic Development and Cultural Change, No.3/2002

Chilean model most criticized. The problem with low coverage becomes most evident after retiring, when the uncovered part of the population or partially covered portion does not become entitled to a pension at all, or when it is not even sufficient for modest living.

Coverage of economically active population stood at 57.3% in 2004. This is still relatively high in comparison to some other Latin American countries. However, this is less than three decades before when in Chile itself, the public system covered 79% in 1973 and in 1980, just prior to the reform, 64% of active population. The problem is mainly not in formal non-coverage of active population by pension insurance, since a large number of them are formally participating. The problem lies in the fact that a large number of the active contributors does not contribute on a regular basis and hence lose their membership entitlements. Thus, in December 2005, out of 7.4 million pension fund members only 3.8 million contributed for the month, or only 51.1 percent. Therefore, it does not strike as odd, that a study has shown how an average Chilean has twenty-one year of service in forty years.[148]

Coverage of formally employed workers, those under a contract, is high and amounts to 94%, but it is at the same time very low and decreasing when it comes to the self-employed workers and those from the informal sector. While the last certainly cannot be legally bound to insurance, the self-employed can. However, they were allowed to decide whether they want to participate in the system or not. And a lot of them are participating indeed, but only formally, their real insurance coverage is only around 5 percent.

The low degree of real participation in the system, expressed as "density" of payment of contributions, over time, determines final results of the system – the amount of pension benefit received. Projections in that regard are very unfavorable. A study of the supervisory government agency forecast that only 40% of the active contributors would have a decent pension, higher than the legal minimum, 10% would qualify for a pension supplement guaranteed by the state, while one half of the insured would reach retirement age without accumulating enough capital for a minimum

[148] Social Security: The Chilean Approach to Retirement, CRS Report for Congress, May 17, 2007

pension and without the right to a top-up, since they would fall short of 20 years of service. All they would have is a low social assistance pension.[149]

The reasons for the relatively low coverage are multiple: the grey economy and self-employment are wide-spread in Chile; unemployment (when pension contributions are not paid); interrupted periods of employment of women due to child rearing; a tendency of many to contribute just long enough to qualify for the minimum pension (20 years) etc.

5.3.2. Conclusion

The performances of the Chilean reform are mixed. It provided good pension benefits to those with stable and steady jobs, it has propelled the development of the production factor market (and capital and labor market), brought about high investments and created huge assets of pension funds, however, it has also instigated a high transition cost and a huge budget strain, high administrative costs and low coverage of workers with pension insurance, especially women and the poor. Probably the most important success of the experiment is that the Chilean system still exists.

The mentioned and other similar problems encountered in the operation of the pension system, induced the government of Chile to prepare a new reform package, as proposed by the Council formed by the President of Chile. The core of the proposal is to attempt to mitigate the consequences of low pension insurance coverage and to introduce a more favorable solidarity pension for all elderly above 65 years of age, which will amount to one-fifth of an average wage. Higher grants for the poor are also considered, initial government subsidies to pension accounts of women and the young, as well as strengthening mandatory participation of the self-employed. In addition, further relaxation of pension fund investments is expected as well as adoption of several measures which are to invigorate competition among AFPs including lifting the ban on banks' participation in the industry. The International Monetary Fund approves the concept,[150] and the bill is being considered by the Chilean Congress.

[149] Social Security: The Chilean Approach to Retirement, CRS Report for Congress, May 17, 2007

[150] Please see: Chile, IMF, Staff Report for the 2007 Article IV Consultation, June 25, 2007

5.4. Other Latin American Countries [151]

5.4.1. Introduction

The attractive concept of pension insurance in Chile and positive initial results of the reform inspired Latin American countries and served as a model for their own reforms.

Despite different practical solutions that are applied in Latin American countries, their pension systems boast some common features: they all have dominant private pension funds in which the insured have their personal savings accounts, and which are managed by private pension companies. The primary aim of reforms was a stable and reliable old-age provisioning that would embrace a larger number of persons than state-owned funds. Some countries aimed to eliminate great disparities in the pension system, as an enormous portion was disbursed to the richest. Another important goal was the reduction in state budget expenditures on pension benefits that were, due to the poor management of pension funds, financed from the PAYG system. Finally, it was expected that such a pension reform would boost national savings and create sources for financing economic development, while the development of financial markets was expected to bolster the efficiency of capital allocation and corporate sector supervision.

Reforms of this type were implemented in the following 12 Latin American countries: Chile, Peru, Colombia, Argentina, Uruguay, Mexico, Bolivia, El Salvador, Costa Rica and the Dominican Republic. Brazil, the biggest country on the continent, did not embark on the path of introducing mandatory

[151] For further detail, please see: R. Palacios – **Pension Reform in Latin America: Design and Experiences,** Pension Reforms: Results and Challenges, Santiago: *International Federation of PensionFund Administrators*, 2003; **Old-Age Income Support in the 21st Century, The** World Bank, 2005; Latin American Economic Outlook 2008, OECD, 2007; **J. Roldos – Pension Reform and Macroeconomic Stability in Latin America, Working Paper,** IMF Institute, May 2007; I. Gill, T. Packard and J. Yermo – Keeping the Promise of Social Security in Latin America, Stanford University Press and World Bank, 2005; *C. Crabbe and J. Giral* – Lessons Learned from Pension Reform in Latin America and the Caribbean, u *C. Crabbe* (ed) – A Quarter Century of Pension Reform in Latin America and the Caribbean: Lessons Learned and Next Steps, IADB, 2005; C. Mesa-Lago – Evaluation of a Quarter Century of Structural Pension Reforms in Latin America, u C. Crabbe (ed) – A Quarter Century of Pension Reform in Latin America and the Caribbean: Lessons Learned and Next Steps, IADB, 2005; C. Mesa-Lago – Myth and Reality of Pension Reform: The Latin American Evidence, World Development, No.8, 2002

savings accounts in private funds, but it focused on the promotion of the state fund (pillar I) that finances pensions of state officials with as much as 50% of resources, and on the establishment of pillar III – voluntary insurance with savings accounts. Pension system deficit equals around 2% of GDP (2006).[152] In Ecuador and Nicaragua, reforms similar to those in Chile were prepared and adequate legal provisions were made, but they did not enter into force due to political disturbances.

Initial conditions varied considerably in different countries. Some countries, such as Argentina, Chile and Uruguay had large-scale and mature pension systems, with a low dependency ratio and a high implicit pension debt. Other countries, such as the Dominican Republic, Mexico or El Salvador, had small-scale pension systems and a very favorable dependency ratio. However, almost all countries had one common characteristic: erosion of credibility of the old pension system. Reasons for this were mainly the following: decline in replacement rates, and a highly inefficient pension funds' bureaucracy, particularly the management of their reserves at the time of inflation.[153]

The Table below sheds light on the main characteristics of pension reform in Latin American countries, apart from Chile that is analyzed in a special chapter.

Although all the countries had an example of Chile to emulate, and its model, still countries in the continent undertook quite different reforms. They went along three paths. Bolivia, Mexico, El Salvador and the Dominican Republic emulated the Chilean model closely, replacing the existing state PAYG system by private funded plans, with individual accounts that relied on the defined contribution method. By contrast, Colombia and Peru established private funded plans, not as a replacement of their public PAYG system, but as the supplement. This means that new employees could choose between the old public fund and joining new private funds. Argentina, Uruguay and Costa Rica chose the mixed system, in which the public PAYG component and private funded funds were integrated into one system, and were mandatory for employees. In 2007, Argentina and Chile made a step backward, and under fiscal pressure they changed their models (and laws), and allowed the insured to opt back into state funds.

[152] *Reforms fail to solve Brazil's pension crisis*, Global Pensions, April 2007.

[153] R. Palacios – **Pension Reform in Latin America: Design and Experiences, ibid**

Table 5-19 **Principal Features of Structural Reforms of Pension Systems in Latin America, 1980 - 2001**

	Peru	Colombia	Argentina	Uruguay	Mexico	Bolivia	El Salvador	Costa Rica	Dominican Republic
Year of reform	1992-93	1994	1994	1996	1997	1997	1998	1995-00	2001
The public PAYG system?	Remains	Remains	Remains	Remains	Closed	Closed	Closed	Remains	Closed
Payroll tax rate, %									
Prereform	18	17.8	42	40	20	19	11.8	22	9.25
Postreform	20.5/22[a]	33.8	46[b]	40	26	24	13.5	16	20
Participation of new workers?	Voluntary	Voluntary	Voluntary[c]	Voluntary[d]	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
Participation of self-employed?	Voluntary	Voluntary	Mandatory	Mandatory	Voluntary	Voluntary	Voluntary	Voluntary	Mandatory
Contribution rate to individual account, %	8	10	7.72	12.27	12.07	10	10	4.25	8
Fees and insurance premiums (% of wage)	3.73	3.49	3.28	2.68	4.48	2.5	3	[e]	2
Payout options	Annuity or scheduled withdrawals	Annuity or scheduled withdrawals	Annuity or scheduled withdrawals	Annuity	Annuity or scheduled withdrawals	Annuity	Annuity or scheduled withdrawals	Annuity or scheduled withdrawals	Annuity or scheduled withdrawals
Minimum return on investment?	Relative to average	Relative to average	Relative to average	Relative to average	No	No	Relative to average	No	Relative to average
Minimum contributory pension	Yes[f]	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Social assistance pension	No	No	Yes	Yes	No	Yes	No	Yes	Yes

Source: Old Age Income Support in the 21st Century, the World Bank, 2005.

[a] 20.5 percent for private pension funds, 20% for the national system

[b] Different by sector and region; in 2005 below 30%.

[c] However, up to 80 percent of workers end up in private funds, as they fail to decide whether to chose the state or private system.

[d] Participation in individual accounts in Uruguay is determined by income level. Workers below a threshold level choose to split contributions between PAYG and individual accounts.

[e] Fees are charged as a percentage of return on investments and capped at maximum.

[f] Only for those born before 1945

5.4.2. Pension Reform Effects

We will try to assess the main effects of the pension reform in Latin American countries. However, two limitations should be borne in mind. First, the reform is recent – it has lasted for around one decade – and therefore, firm conclusions cannot be drawn. Second, even besides conceptual similarities, there are significant differences between pension systems of these countries, and it is sometimes impossible to make general assumptions for the whole continent.

Coverage. One of important motives for the implementation of the pension reform in Latin American countries was the need for expanding the coverage of workforce by the pension system. It was believed that private pension funds would provide a strong impetus to the achievement of this aim, as money on individual accounts would be owned by individuals, and their benefits would be directly related to accumulations. Nevertheless, Latin American experience was different. Namely, the above impetus did not bolster coverage, but it even narrowed it down.

Table 5-20 **Coverage before and after the Pension Reform, the whole Pension system, in % of Workforce**

	Before reform		After reform, 2006	
	Year	Contributors	Members	Active Contributors
Argentina	1994	50	64	26
Bolivia	1996	12	27	13
Chile	1980	64	113	58
Colombia	1993	32	33	17
Costa Rica	2000	53	79	52
El Salvador	1996	26	49	18
Mexico	1997	37	84	31
Peru	1993	31	32	11
Dominican Republic	2000	30	36	19
Uruguay	1997	73	45	26

Source: **Latin American Economic Outlook 2008, OECD, 2007.**

As the Table above suggests, workforce coverage by formal membership is relatively low (column *Members*).[154] However, the coverage of active fund members, i.e. those who pay defined contributions and thus acquire pension insurance rights, is even lower. In 2006, their number was significantly lower than the number of formal members – from one half to two-thirds (in the last column). Other sources of data are similar.[155] In fairness, according to different assessments, the pension insurance coverage is practically unchanged compared to the state prior to the reform.[156] This is indicative of methodological differences among different authors. Nonetheless, it is obvious that coverage increase did not take place at the continent level. Old, low levels were maintained, or they were somewhat lowered, which led to the non-fulfillment of one of the important aims of the pension reforms.

Reasons for low coverage are numerous. First, unemployment rates in many countries of the continent are high, which implies halts in the payment of contributions, whereby such individuals are (temporarily) practically exempted from insurance. Second, grey economy is widespread in several countries, which implies the lack of insurance coverage. Third, the implementation of legislation is problematic – in several countries, even one fifth of employees in the public sector are not really but formally covered by this insurance. Fourth, there are regulatory solutions, such as non-mandatory insurance of the self-employed. Fifth, when individuals try to optimize their position and achieve the minimum number of years in service that qualifies them to receive the guaranteed (minimum) state pension, they tend to avoid the regular payment of contributions. The coverage of low-paid workers and workers in the primary sector and small companies, is especially low.

Management concentration. As in Chile, private pension funds in all countries are led by specialized financial companies – pension fund administrators (PFA). Competition among administrators is very welcome as it should, on the

[154] These data are probably overestimated, as there are frequent overlaps, especially in Chile, due to untimely updates of switching.

[155] C. Mesa-Lago - Evaluation of a Quarter Century of Structural Pension Reforms in Latin America, u C. Crabbe (ed) - A Quarter Century of Pension Reform in Latin America and the Caribbean: Lessons Learned and Next Steps, Inter-American Development Bank, 2005; A. A. De Mesa and C. Mesa-Lago – The Structural Pension Reform in Chile: Effects, Comparisons with other Latin American Reforms, and Lessons, Oxford Journal of Economic Policy, 1/2006, p.152-154

[156] R. Rofman and L. Lucchetti – Pension Systems in Latin America: Concepts and Measurements of Coverage, **SP Discussion Paper No. 616, The World Bank, November 2006**

one hand, provide real options, and lower costs and fees paid by contributors, whereas on the other hand, it should improve the rationality of investments and boost investment returns both of funds and the insured.

In 2006, only two countries had more than 8 administrators (Argentina had 12 and Mexico had 21 PFAs). Two countries had 2 administrators; the other two countries had 4 PFAs, while the rest of countries had 6-8 PFAs. Such a relatively small number of PFAs causes concern because of the possible monopoly or oligopolistic position of administrators that are the strongest on the market, i.e. arrangements can be made to the detriment of the insured. However, the problem has real causes in at least some countries. Namely, given the small size of some countries that have several million inhabitants, it seems unrealistic to expect that a greater number of serious companies could appear on the small pension market. Bolivia therefore introduced a legal requirement of having two administrators only, but it also further curbed monopoly behavior. In sum, competition among PFAs is insufficient in the greater part of Latin America, which might negatively affect operations of the pension system.

Such a set-up was a consequence of industry consolidation of a greater number of administrators in the initial phase. It is therefore possible that the process will continue in several countries (let us remember that these reforms are more recent than the Chilean reform), and the number of PFAs will continue to go down as the danger of insufficient competition increases.
Competition among funds and PFAs is not always sufficient, which certainly impacts the level of fees that PFAs collect from the insured, as presented in Table below.

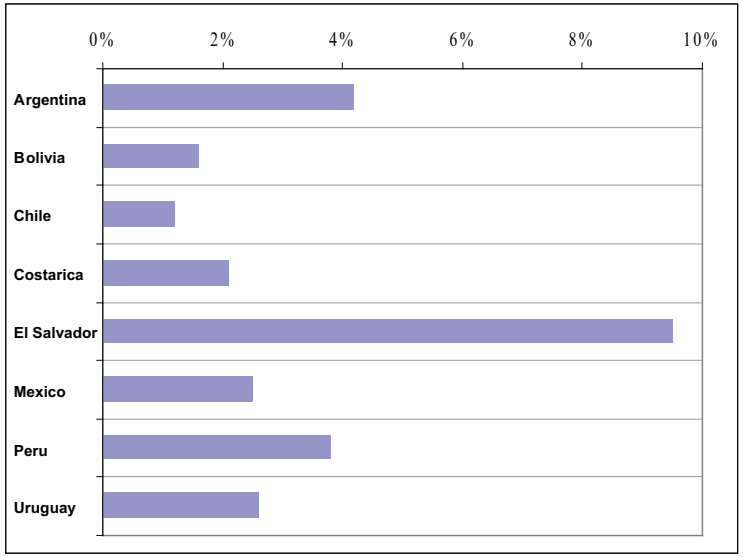
Charges range between 1.2% and 9.5% of fund capital, which is a very high percentage, and much higher than in Sweden (0.7%), the American Plan for Federal Officers (0.1%) or Australia (1% on average). Nonetheless, the majority of these funds are young, and it is therefore logical that a decrease in fees is followed by an increase in fund capital. In case of the Chilean reform, which has the longest history, fees reach mere 1.2%, and in case of Poland, fees stand at 4.3%.

Savings. Not even in Chile was the estimate of pension reform effects on savings easy or unambiguous, although Chile has been analyzed most

thoroughly, and we can therefore rely only on indications in case of other countries. In the wake of the reform, the national savings rate was raised in Peru only, albeit to a small degree, whereas other countries either did not witness changes (Argentina), or a decline was recorded (Mexico, Colombia). Of course, conclusions about the pension reform effects cannot be made in respect of changes in the total savings rate, as these effects should be observed separately from effects of other factors, or these changes enable a relatively reliable estimate that pension reform probably did not affect positively changes in the national savings rate, or at least, these effects were not very pronounced.

Investments and returns. The average investment rate of return of private pension funds in Latin America was very high in the post-reform period, as illustrated in the Table below. The average rate of real returns, i.e. nominal returns decreased by inflation, varied up to 10% or more in different countries. The lowest average rate of return equaled 6.7% over the whole period, which is acceptable.

Figure 5-3 **Administrative Costs and Fees as Percentage of Assets**



Source: Latin American Economic Outlook 2008, OECD, 2007

Table 5-21 **Gross Real Investment Returns**

country - period	real rate	standard deviation
Argentina (1994-2006)	9.8	11.1
Bolivia (1997-2006)	8.8	3.5
Chile (1981-2006)	10.2	7.6
Colombia (1994-2006)	6.7	
Costa Rica (2002-2006)	6.9	4
El Salvador (1999-2006)	8.8	4.5
Mexico (1997-2006)	7.8	3.6
Peru (1993-2006)	9.9	9.6
Uruguay (1995-2006)	11.8	14.3

Source: Latin American Economic Outlook 2008, OECD, 2007

This result looks nicer than it really is. First, this is gross return that should be lowered by appreciable administrative costs, so that net return is reached at, as it is the only return relevant from the viewpoint of the insured and the pension system. Although we do not have accurate information about net returns for Latin American countries, and we use the data on Chile, it is possible to infer that this deduction in return is substantial. Second, very high returns were achieved at the onset (during the 1990s), while in the second period (end of the 1990s and the 2000s) they were much lower. This indicates that such returns are unsustainable in the long run. It is interesting that returns on government bonds were high, as these bonds offered very high rates at the time, due to a low credit rating and high risk of bankruptcy, which changed in the second half of the 1990s. Third, return variability, measured by standard deviation, was high, especially in some countries (Argentina, Chile, Peru, Uruguay). This is rather unfavorable for pension insurance and for contributors retiring in years when stock exchanges are down and individual accounts experience a drop, as these accumulations are used for calculating pensions and annuities.

These returns could have been higher, but were lower partially due to investment regulations. Let us analyze investment caps for funds in some countries:

Table 5-22 **Investment Limits**

	govern-ment bonds	financial institutions	stock	corporate bonds	invest. funds	foreign securities
Argentina	50	40	50	40	20	10
Bolivia	ne	20-50	20-40	30-45	5-15	10-50
Chile	40-80	40-80	0-80	30-60	0-40	30
Colombia	50	30	30	40	5	10
Mexico	ne	10	15	5		20
Peru	30	40	35	40	15	10.5

Source: Latin American Economic Outlook 2008, OECD, 2007

In the greatest number of Latin American countries, restrictions are the most flexible or they do not exist in respect of government bonds and (domestic) financial institutions, and are the most stringent regarding shares and foreign securities. Favoring of the state is certainly the consequence not only of the wish to achieve investment equilibrium, with the aim of lowering risk, but also of the state's need to finance its budget deficits incurred due to pension transition costs. Investment limits abroad are certainly unfavorable for pension funds and investment safety, but may be favorable for the development of the domestic financial market.

Market of production factors. The introduction of funded pension plans fostered significant and positive changes of financial systems in numerous countries. The first change concerns the fast accumulation of substantial capital, and these funds quickly became the main players on national stock exchanges. At end-2006, total capital of private funds, including Brazil that has most capital, amounted to USD 390 billion. The ratio of pension capital to GDP in the leading reform countries, apart from Chile, outstrips 10%, with the upward outlook.

The appearance of pension funds promotes local stock exchanges in several ways. First, the market becomes deeper, its volume increases in response to the inflow of additional capital. Second, liquidity increases, and existing securities that otherwise would not be traded are admitted to the market. Third, new instruments appear and are developed, especially asset-backed instruments (i.e. assets such as: mortgages, annuities, bonds and similar).

Fourth, stock exchanges are better regulated, as they become more important with the establishment of pension funds. All these channels of positive influence are present in the majority of Latin American countries. At the same time, fluctuations on stock exchanges dwindled, and the price of capital that companies are faced with dropped as well. The stock exchange infrastructure was improved, including rating, custody operations and broker services.

Life insurance emerges as an important segment, as its significant portion is used for pension instruments, especially annuity bills. Namely, with first retirees from private funded funds, annuities as a manner of pension withdrawal appear as well. Pension funds then pay out to contributors their accumulated funds, which might be used for purchasing annuities from insurance companies. In the majority of countries, pension funds are also responsible for tackling the issue of risk of disability and surviving family members, which benefits insurance companies.

However, not everything went smoothly. First, the growth of stock exchange turnover was slower than capitalization, which is somewhat unusual. This is unfavorable for Latin American countries because, according to research, economic growth strengthens liquidity correlation (= turnover) and not capitalization (=stock exchange volume). Second, one stock exchange branch did not develop: shareholding. Apart from several countries, even the number of listed shares slumped during the pension reform. This is partly the consequence of investment restriction policies, partly of investment prudence of funds, and partly of elements unrelated to the pension system.

Third, the concentration of investments into government securities is still rather high (in 2005, 46.4% on average). This is somewhat positive, as it facilitates the financing of transition through transferring free assets to the state, and reduces the risk of investment by inexperienced managers, which has its downsides as well, because it lowers the average return on investments and overly exposes fund finances to the political risk of the state (see the case of Argentina in Box 1). Fourth, fund investment constraints sparked significant distortions of prices of financial instruments. Namely, these distortions appear because pensions funds, due to limits, cannot count on market arbitration.[157]

[157] J. Roldos – Pension Reform and Macroeconomic Stability in Latin America, Working Paper, IMF Institute, May 2007.

5.4.3. Conclusion

Effects of pension reforms in Latin America differ in individual countries. In the light of long-lasting reforms, Chile has recorded the best effects, including Peru where fiscal consolidation and savings growth were notable, just like in Chile. The picture in other countries is less encouraging. Argentina and Bolivia succumbed to fiscal pressure, and allowed employees to opt for the public pension system, which represents a partial reversal of reforms.

In several countries, pension system coverage is unjustifiably low, even lower than in the period prior to reforms, which will, concurrently with stricter retirement conditions and pension determination, leave many people poor and deprive them of old-age income. A cure for this problem is found in social assistance pensions in several countries, which implies the betterment of the reform system by old, state methods, burdening the budget.

Pension system boosted the development of financial markets on the continent. Numerous new instruments were introduced, stock exchange capitalization increased, regulations were improved, and pension funds became the main investors. Investment returns were very high, although a deceleration tendency has been registered in the last years. The problem lies in significant fluctuation in values. Investment regulations are gradually liberalized, but low competition among PFAs represents a problem, while expenses and fees remain high.

Box 5-1. **Politics and Pension System: Argentina**

One of popular advantages of private funded pension systems is their purported exclusion from politics, by contrast to state funds. However, Latin American experience shows that the possibility of state influence on the whole system is considerable. Let us analyze the Argentinean case.

In 2001, Argentina plunged into a financial crisis that was triggered by a decline in economic activity and fiscal revenues, which led to the plummeting exchange rate and the impossibility of servicing the substantial external debt (bankruptcy).

Attempting to preclude the crisis and then to subdue its effects, the

Government undertook various measures, including those in respect of the pension system, when it treated the private system almost as the state system. The Government changed laws by decrees, and sometimes without them. Fundamental changes were introduced without a lot of thinking, and some changes were quickly repealed. Important changes were often hidden in longer financial decrees, and were sometimes prescribed by lower regulatory authorities.

These are some of the measures:
the pension contribution for employers was reduced from 11% to 5%, with the aim of alleviating the burden of crisis, but at the cost of lower future pensions,

a new authority was tasked with the collection of contributions, but the tax administration soon resumed its previous role, those entitled to pension were forbidden to purchase annuity denominated in a foreign currency, which increased the inflation risk,

- costs of insurance premiums were temporarily abolished, and were not refunded,
- the structure of fees charged by funds was radically changed by a decree;
- funds' money in banks was converted into government bonds (USD 2.4 billion) by a decree;
- the state pressed for voluntary conversion of high-yield government bonds held by funds (USD 14 bn) into new bonds with a much lower interest rate,

the state soon converted these new dollar-denominated bonds into peso-denominated bonds, at an unfavorable exchange rate, which was refused by some funds;

- in October 2004, the Ministry of Finance and private funds agreed on settlement – all old bonds were to be swapped by new, peso-denominated bonds, with the face value of 70% of the value of original assets, with a 42-year maturity period.

As illustrated, the state can decisively influence the private pension system operation; not only in the regulatory sense, but it can financially damage the system as well. In Argentina, the capital of these funds was by 50% lower in 2002 relative to 2001.

Doubtless, such a behavior of the state diminished the credibility of pension funds, and showed that they too are not protected from the state.

Source: R. Rofman – The Impact of Argentina's Economic Crisis on its Pension System, C. Crabbe (ed) - A Quarter Century of Pension Reform in Latin America and the Caribbean: Lessons Learned and Next Steps, Inter-American Development Bank, 2005

6. Reasons For and Against Pillar ii

6.1. Introduction

If we want to consider virtues and flaws of Pillar II, it has to be placed in a wider concept of pension insurance. Pillar II, as it has been already pointed out, is a part of the World Bank multi-pillar model. However, the model of the World Bank is not the only one; it belongs to a wider tradition, a perspective of pension insurance, dubbed Anglo-American.

The Anglo-American tradition implies a normative approach, where private pension funds prevail over, and even take the place of public pensions. It is grounded on private individual savings invested in the capital market by financial institutions, such as banks, insurance companies and pension companies. The second important trait of the funded pension systems is their almost exclusive reliance on defined contribution (DC) schemes. In this way, the pension risk in the Anglo-American model is passed on from the state or employers to individual contributors.

The essence of this philosophy is that focus on the redistributive component of the PAYG pension insurance model ought to be abandoned altogether for insurance and savings, mainly by ameliorating negative effects of redistribution on economic growth. Specifically, redistributive policies are known to inhibit savings, work and entrepreneurship. Redistribution should be limited to the life-time poor, targeting low wage-workers.

The argument in favor of savings is the crucial one in the Anglo-American concept, and it has been used alongside with the need to privatize saving management. The reasoning employed behind the concept presumes the following: (1) The rise in total saving entails a higher level of investments and (2) Privatization of the pension system is a prerogative to expand economy

production capacities, as the investments in the public fund would not result in a rise in the capital stock. The central argument of the approach is that incremental pension investments must lead to an increase in private capital in the economy and that, if the situation were the opposite – higher savings without higher investments (as would purportedly happen under the state management) it would be a mere taxation.[158]

The Anglo-American model is influential, since it is governed by strong economic logic and many pro-market economists favor it. However, its impact on pension reforms relies greatly on the influence of the World Bank, and its pension model comprising several pillars. This model actually shares with the World Bank model some prominent traits, not to mention the essential principles behind it. The World Bank has succeeded, with the help of its know-how, loans and art of persuasion, to induce many countries in the world to embrace its model, that is, the Anglo-American model, not only in Latin America where the Chilean example was emulated, but also in Eastern Europe and Central Asia.

6.2. Pillar II – Potential Advantages and Flows

In this section, an attempt to consider the virtues and flows of Pillar II, the so called mandatory pension insurance in funded private pension funds will be made. We will discuss in more detail the fundamental postulates that advocates of Pillar II present as its advantages and which are supposed to prevail in discussions like this one.[159]

Private funded systems provide freedom of choice to contributors.

[158] M. Feldstein – Transitions to a Fully Funded Pension System: Five economic issues, NBER Working Paper 6149, 1997

[159] References: N. Barr – Pensions: overview of the issues, Oxford Review of Economic Policy, No. 1, 2006; N. Barr, P. Diamond – The Economics of Pensions, Oxford Review of Economic Policy, No. 1, 2006; M. Feldstein – **Rethinking Social Insurance,** NBER Working Paper No. W11250, April 2005; *A. Jousten* – Public Pension Reform: A Primer, IMF, WP/07/28, 2007; C. Mesa-Lago – Myth and Reality of Pension Reform: The Latin American Evidence, World Development, No. 8, 2002; **Old-Age Income Support in the 21st Century,** *An International Perspective on Pension Systems and Reform, The World Bank, 2005; P. R. Orszag, J. E. Stiglitz* - Rethinking Pension Reform: Ten Myths about Social Security Systems, u New Ideas About Old Age Security, *Toward Sustainable Pension Systems in the 21st Century, The World Bank, 2001*

The public pension system is unique, equitable. It does not provide freedom of choice between different alternatives, and consequently it does not provide even what is necessary – the choice of a personally-tailored alternative which suits an individual the most. And indeed, the regulations of public insurance are equitable and virtually do not allow wider differentiation according to needs and requirements of contributors, not even when it comes to retirement (early or late etc.), the way the pensions are paid out (annuity or programmed withdrawal etc.), not even concerning investments. On the other hand, the system of funded private pension funds, at least in theory, offers a choice of a fund, and therefore terms and conditions of retirement, investments and management, to mention just a few.

However, the freedom of choice in private pension insurance is quite limited and more constrained than it seems:

1. There is no choice of participation, since insurance in the pension insurance is mandatory,
2. The level of awareness about the available options is low, since people are not interested to learn about conditions and possibilities, and therefore, there is no choice. Opinion polls in progressive Sweden show that citizens know little about private pension funds in spite of their mandatory participation.
3. Often, funds are very similar, practically, there is no choice. Thus, in Chile investment portfolios of funds are very similar and returns also resemble. The causes are various: investment regulations which limits investment options, and therefore makes investment outcomes very alike; or limited investment options in the domestic market as well as a low number of sufficiently large companies or a limited number of bonds the issue of which is large enough,
4. Some contributors do not want to choose, since they do not understand the complexities of the private insurance finances.

Private Funded System Addresses the Problem of Population Aging

Many believe that funding eliminates unfavorable effects of population-aging on the pension system. These effects occur when less and less employees

finance a growing number of retirees in the PAYG system. True, it seems that the problem of aging is solved in the funded system, since contributors accumulate wealth during their careers and spend it in old-age, providing for efficient spread of consumption over time.

However, apparently this is not true. Contributors to the funded system do not accumulate material goods (food, clothes, heating) or services (health, transportation), but normally securities as ownership claims to be used in the future for obtaining the necessary goods and service. And younger workers will produce them, those who work while the elderly are spending their retirement. Consequently, the possibility of fulfilling the needs of pensioners in the funded system is contingent on the level of production at the time, which is true for the PAYG system as well. Namely, production in the future is the pivot of the both systems. When a person draws pension, what differs is only the way in which the right to portion of the production is realized: It is accumulated wealth when it comes to the funded systems, and in PAYG systems it is the state's promise of a pension asserting the same right. For a better understanding of the matter, let us conjure up that the entire population retires in a country. Then, all the securities accumulated for old age, become valueless, as there is no production to exchange them for. Expanding the analysis to open economy brings technical complexity, but does not change the essence of the outcome, considering that virtually all relevant countries undergo demographic transition.

Since future production is crucial for fulfillment of needs of future retirees, the following question becomes the weightiest: Whether private funded system provides higher production in the future compared to the PAYG system, through higher saving and better structure of the market of production factors (labor and capital)? If the answer to the question is affirmative, then the funded pension system is a better option.

Private funded systems lead to elimination of negative stimuli at the labor market, which, based on desirability of the pension private system, gives vigorous impetus to participation and higher pension insurance coverage

Namely, public PAYG systems usually disincentivize people to work and participate in the labor market, and therefore to pay pension contributions

and take participation in pension insurance in general, while funded private funds do not pose such problems. This is because pension contributions in the PAYG system are perceived as taxation. Pension benefits paid out later do not depend on contributions, and therefore avoidance of payment occurs and participation in the pension system is decreased. People resort to grey economy.

Thus, for example, when pensions are earnings-related, at the last or final years of working career there are some unfavorable incentives for younger workers to neglect the pension system and even not to participate in the formal labor market, but to turn to grey economy and try to earn more there without paying contributions, and to join the pension system in the second part or at the end of their careers. Using such a strategy will not be to the detriment of the pension levels. Similarly, many people are averse to the pension system which in fact favors those who advance more in their careers (these are the more educated and well-off people), as the last years of a person's career are the most crucial for the pension level. In this way redistribution within the pension system occurs, from the poorest to the richest, which is not equitable and undermines trust in the pension system. In fairness, such a system of determining pensions does not exist in Serbia, since earnings from the entire career are taken into consideration. Therefore, the issue will not be considered any further.

The second group of improvements in shifting to the funded system stems from direct relation (actuarial relations) between paid contributions and the pension. The direct link should in fact arouse people's interest in the pension system, since the accumulated funds at their saving accounts is their property at all times, and secondly, the accumulated funds directly influence the level of the future pension.

The direct link has or should have three positive outcomes. First, removal of unfavorable stimuli (=distortions) in the labor market, that is increase in participation of workers in the formal market with favorable economic effects. Second, arousing their interest to participate in the pension system and pay pension contributions, this should generally increase insufficient pension system coverage and provide safety in old age to many. Third, encouragement of later retirement, since it maximizes the return recorded at individual accounts and brings a higher pension.

These claims are reasonable, in spite of certain theoretical remarks.[160] This is because a person really has more positive stimuli from the system in which he/she is the owner of the accumulated funds, and which directly influences the pension levels, than the system where these relations are weaker or even non-existent. Still, the crucial issue is to what extent the stimuli work, and to what extent a person feels the funded pension system as superior and as one's own, compared to the public PAYG system.

Experience so far does not support this statement adequately and illustrates that funded pension system coverage is often not high. Thus in Latin America, as demonstrated in the section covering the pension reform conducted in these countries, pension insurance coverage is very low, even lower than it was prior to the reform. The fact alone does not show that the mentioned stimuli do not exist, however it is obvious that there are other more vigorous forces (unemployment, lack of information among workers, regulatory weakness etc) prevailing. Many workers calculate that it is better to work under the table, than sacrifice a part of earnings in order to earn a possibly higher pension in the far future.

Then, it is questionable whether removal of all distortions from the labor market is a desirable goal if it implies complete elimination of the pension income redistribution. Removal of distortions would be achieved by a mechanism which determines every pension on the basis of the total paid pension contributions, therefore by using the actuarial technology, which would completely prevent redistribution among different categories of the insured, namely between the rich to the poor. However, is complete elimination of distribution the goal of pension system reforms? If it is the case, what about the poor, what about those who could not earn enough, so that their pension benefits could at least provide a modest life in old age? Even the World Bank model entails redistribution, although not in Pillar II but in Pillar I. However, even then, distortions exist, since Pillar I must be financed from taxes and every modern tax is distortive.

Finally, if elimination of distortions at the labor market is really wanted, it can be achieved without funding the pension system. Distortions are not inescapable when it comes to non-funded systems, only when the most of

[160] Mostly second best

the current PAYG systems are concerned. Therefore, there is model of notional defined contribution (NDC), not only in theory but in practice as well, which is a PAYG system, but it does not create distortions at the labor market. As seen in the chapter *Concepts of Pension Insurance*, a NDC system is based on pay-as-you-go financing and there is no funding. On the other hand, pension benefits are determined based on total contributions paid, in the same way as with DC funded schemes.[161] If elimination of the distortions is required, it is not necessary to shift to the private funded schemes. Even a public pension fund can be reformed into a NDC system, as done in Sweden and in some other countries as well.

Private funded schemes provide higher return on investments than the public, and therefore they are more favorable to contributors

We have seen in the previous sections of the study that private funded schemes yield a return to its contributors. Namely, the concept itself is based on fund investing person's contributions and allocating the result of such investing i.e. the return to the account of the person.

On the other hand, the pay-as-you-go system might be viewed against the backdrop of investing; a question can be posed how much a contributor (or a generation of pensioners) invests in the public fund during their careers and how much they get from it in pension benefits. While things go well, while the economy and population grow, there is a positive return and even in the PAYG systems each person and each generation get more than they have invested. The mechanism is the following: since the country and employee income grows with time, as does the number of employees, the available pension assets grow as well, pensioners' benefits increase through an adequate mechanism (growth of wages indexation, extraordinary indexations and similar).

However, the return of a fully-fledged PAYG system cannot be high. As Pall Samuelson proved long ago,[162] it equals the sum of labor force growth and

[161] One important difference is that NDC model has an external rate of return, as opposed to funded schemes where it is a result of market investments.

[162] P. Samuelson - An Exact Consumption-Loan Model of Interest with or without the Social Contrivance of Money, Journal of Political Economy, December 1958

productivity, which means that in a normal situation it spans 2-3% per annum. Labor force in the developed part of the world is at a rate of 0-1% annually and productivity amounts to 2% annually.

The return of the funded pension schemes is inevitably higher, since in an efficient economy the real interest rate must be higher than the economy growth rate. Therefore in a normal situation the return of private investment funds will be always higher than the return in the public PAYG fund.[163]

Such an advantage of private funded schemes means that at the same level of pension contributions, private system produces higher pension benefits than the public, i.e. the same pension benefit in the both systems require lower rate of return in the private compared to the state system.

Such advantage of funded private pension schemes in returns is an indisputable fact in literature, which means opponents of the model accept it as true. However, the mentioned advantage applies under two assumptions only:

- Pension systems are formed *ab ovo*, i.e. from the beginning. Therefore there are no transition costs of switching from the current PAYG system to the funded system.
- There are no administrative costs, the net investment return (assigned to individual accounts) equals the gross return.

In theoretical discussions such simplifications are natural, in order to facilitate analysis. However, in switching from theory to issues of practical reforms of pensions systems burdened with problems, both assumptions need to be abandoned.

First, transition from the PAYG system to funded private schemes implies **high transition cost** for countries with developed pension systems. Namely, such a change of the pension system inevitably creates a burden to multiple generations of contributors to finance two pensions: the current pensioners' benefits, the ones who have retired earlier and now receive pension benefits from the state fund and the other – their own pension from the private pension funded scheme. If pension contributions because of creation of a new

[163] See *G. Corsetti and K. Schmidt -Hebbel* - Pension Reform and Growth, WP 1471, The World Bank, 1995

private funded system are diverted to accumulations and invested in private pension funds, then it leaves the public pension fund without resources to finance pensions of the current pensioners. This is certainly not acceptable and the state has to cover the deficit in the PAYG fund. This can be done by increased taxation or by debt-financing, but the method of financing does not change the outcome: pension expenditures increase compared to the earlier situation.

The transition cost can be illustrated in a different way, too – as a sum of all earned rights (both active contributors and pensioners) in the PAYG system. These are the rights to lifetime pension benefits of the current pensioners (including the possible survivor's pension), and a certain number of years of service of active contributors, those still working and who have become entitled to some pension rights by their years of service. In the course of the transition from the PAYG system to a funded, the state needs to cover (finance) these entitlements.[164] The sum of these entitlements is called the implicit pension cost. Its level varies across countries and depends on the generosity of the pension system and its basic principles.

In order to mitigate the problem of the transition cost, the double-payment burden over a long period of time, countries introducing pillar II have resorted to various methods. The first is decreasing obligations the state has to active contributors and pensioners, stricter retirement eligibility criteria, deterioration of the pension indexation mechanism, decreased entitlements of active contributors transferred from the state to the private pension system and similar. It financially helps, because it decreases the transition cost, but at a cost of aggravating the status of active contributors and pensioners. In addition, there is an issue why undergo a pension reform in the first place, when significant savings can be achieved in the PAYG system. Then the solution for financial difficulties of the pension system lies in the parametric reform of pillar I. The following way to save is to phase in transition from the PAYG to a funded system keeping the older contributors in the public system, and make the transfer to the funded system obligatory only for younger generations of contributors. Therefore, financially and technically, distribution of contributions is achieved. A part of contributions is diverted to private funded schemes while a part is retained together with the older contributors

[164] For example, Chile has granted government bonds as an indemnity for earlier entitlements (recognition bonds).

in the public system. The method decreases the liabilities of the state towards current pensioners, because one part of the current pension contributions is used for financing their pensions and this delays full transition to the new system. Essentially, savings are not achieved in this way. However, transition is prolonged while liabilities of the state, as will be seen in the section about the transition cost in Serbia, remain equal.

Second, **administrative costs** decrease the return on investments. These costs are significantly higher in private pension schemes than with the public systems. Namely, in a decentralized, competitive system of these funds some items appear which do not even exist when it comes to public funds. The one is the need to advertise funds in media in order to inform and attract contributors. The other is payment of sales agents who sell insurance policies pestering people. A significant item is also the payment and records system that each fund has. In other words, funds collect monthly contributions, invest them and assign returns, keep records of payments, investments and account balances etc. This is usually expensive, not only because of their decentralized nature, but also due to a relatively small size of many funds (diseconomy of scale).

The level of administrative costs substantially varies across countries and depending on features of institutional arrangements. For the sake of illustration, we shall use an example of Chile where funds, for the services they provide, charge 2% contribution fee monthly, increased by a moderate fixed monthly commission. As a result, the gross return rate of e.g. 8% per annum, decreases by more than one fourth of the total amount. Hungary and Croatia also have high administrative costs. They are somewhat lower in the US, where the annual fee for pension plans in mutual funds and in similar institutions is around 1% per annum of the accumulations in the individual account, increased by the moderate fixed commission, which results in reduced asset balance at retirement of 20-30%, and therefore the pensions are reduced by the same percentage. In Great Britain annual charges reach approximately 1% of the accumulated amount.[165] In less developed countries, where there is no intense competition among financial institutions administrative costs are significantly higher: In Latin America, as illustrated in Figure 5-3, they usually range between 1.5 and 4% of funds assets, annually.

[165] **Administrative Costs of Private Accounts in Social Security,** Congressional Budget Office, the Congress of the United States, 2004

There is a belief the market, or to be more precise, the competition will take care of the administrative costs, that the battle of private funds and their management companies will minimize fees and charges, emulating what happened in developed countries. However, it has not occurred yet.

Most probably a certain decrease is likely to be seen. The reason lies in the fact that real costs of funds are relatively invariable (advertising, processing etc.), over time diminishing per unit of assets, as assets of the fund grow. In other words, fund assets grow faster than administrative costs in real terms, so there is room to cut down fees per unit of assets or contributions.

Still, there are limits to such potential cost reduction related to the country's size, which have a bearing on Serbia. Firstly, in relatively small countries the economy of scale cannot be sizeable either, so the real costs per unit will not fall as low as in large countries. As already shown, not even a 25-year history and high capital growth of Chilean funds has lowered fees to the US level. Secondly, in small countries funds cannot develop fierce competition. Namely, professional fund management entails considerable minimum costs that small funds cannot afford. Therefore, small countries also experience funds concentration, the number of administrators ranging from 2 to 8 in smaller Latin American countries and going over 10 only in large countries. Croatia and Hungary have also soon faced funds concentration. Modest number of funds and administrators weakens the competition and preserves high level of fees, with sizeable administrators' profits (like in Chile).

Potential solution to such problems could be sought in pooling some of the funds' technical operations, such as payments processing and recording in a single database, pensions payout and similar. Of course, one should seek to avoid forced centralization by the state through creation of some new "SDK" (former SFRY Social Accounting Service); the state could offer instead to perform the mentioned operations by its administrative capacities in return for a modest fee. To that aim, preparation of central registry of contributors intended for public pension and health insurance funds is already underway in Serbia. Such registry could also undertake to perform similar operations for private funds.
In relation to returns, **the investment risk** in private funded schemes should be mentioned. Higher returns in the securities market undoubtedly entail higher risk. That's the underlying logic of the capital market. Moreover, in a perfect financial market, it makes no difference what security a person buys,

since potentially higher return of a security is fully compensated for by the higher risk it entails. However, in an imperfect market, where each security needs to be assessed from the standpoint of risk and potential return - a task that is neither easy nor safe, mistakes are likely to occur. In other words, such potentially higher return of funded schemes compared to PAYG is associated with higher risk, which is unfavorable from a pension system standpoint.

In addition, even a private funded system yielding higher returns in the long run than the public PAYG system would face the problem of return volatility, i.e. high fluctuation in stock exchange indices over time. Namely, leading stock exchange indices frequently deteriorate compared to the year before, only to later compensate for and outstrip such decline (sometimes in a few years). However, such fluctuations would be a real game of chance for private funded scheme pensioners: those retiring in a year marked with the upswing in stock exchange indices would have high pensions. However, those retiring at times of stock exchange downturn could end up with benefits 20% to 30% lower than in the previous case. And game of chance does not promote trust in the pension system.

Let us conclude on this line of arguments. Theoretically, private funded pension schemes should yield higher returns than public PAYG system. However, when realistic assumptions – transition and administrative costs and risks are introduced, a totally different picture emerges, and it is not clear which of the two systems should be given preference from the standpoint of return on individual savings. The attempts to empirically answer the question which system yields higher returns were inconclusive.

Private funded system boosts country's savings and economic growth

The logic is perfectly clear and reasonable: funded pension system is by definition based on individual savings and investment of such savings, thereby boosting overall investments in the economy, strengthening capital stock and speeding up economic growth. This in itself is beneficial, since it enhances future production and consumption. Nevertheless, there are some objections to this stream of arguments. Let us look into the discussion.

First of all, it's not certain that the logic "the faster the economic growth,

the better" is actually a good one. The decision to accelerate growth through investments inevitably results in lower consumption of the current generations, raising the question whether and to what extent it is desirable to sacrifice their consumption today for the sake of that of future generations. It is an issue of intergenerational fairness, i.e. spillover of benefits between generations, which the proponents claim even the new funded system should avoid.

Secondly, although the funded pension system in itself represents savings, it is not certain that introduction of such system would boost the country's aggregate savings. Namely, savings in some other sector could shrink and offset the growth in savings brought about by introduction of funded pension schemes. For example, the population sector may decrease its voluntary savings on the grounds that pension insurance contributions also represent savings, although mandatory. To put it differently, if pension contributors cannot see a significant difference between these two forms of savings, they will decrease voluntary savings and maintain their own and the national savings at approximately the same level. Of course, the scenario in which the employees' voluntary savings would remain unchanged or slightly lower with aggregate country's savings recording an increase is also possible. Therefore, different outcomes are possible and it is an empirical question which factors would prevail in a particular situation.

The government could also reduce its own and national savings concurrently with emergence of funded pension schemes. For instance, with private pension funds assuming part of the pension burden, the state might be inclined to increase other expenditures, so that there is actually no saving. Or, the transition cost may need to be financed, either through new government borrowing or increased taxation, all of which reduces the aggregate savings in the country. Similarly, as previously mentioned, the pension system savings in Chile has been negative for decades, since the country's transition cost expenditures exceed the funded schemes' savings.

It needs to be noted that a frequent way of transition cost financing where the funds contributors deposited in their accounts are transferred to the state to finance the pensions of "old" pensioners, while the debt toward funds is covered through government bonds – does not lead to increase in aggregate or any other savings, since it is actually an equivalent to PAYG system. Namely,

it is an equivalent of old pensioners being financed from current contributions (irrespective of the fact that this concerns another part of the pension system) and the state here, same as in PAYG model, promises to ensure the funding for "new" pensioners in future. Essentially, the difference remains only on paper and there is no real change of the pension model.

Thirdly, considering funded system's impact on savings in an open country, i.e. a country involved in cross-border financial flows, we can see that the volume of domestic savings does not limit the volume of investments and, consequently, economic growth. Namely, in such case the crucial factor is the level of cross-border capital transactions, i.e. borrowing trends are determined by investments and growth. So for example, the US has had low savings for quite a while now, in parallel with high inflow of foreign capital. The rise in US domestic savings does not have to affect the investment level, it may for example only reduce cross-border borrowing.[166] Similarly, the UK can boast highly capitalized funded schemes, while still having low savings according to international standards.

Obviously, while private funded pension schemes may boost savings and investments and accelerate economic growth, it's not certain that they will. The final outcome will depend on citizens and government's behavior and it is probably not possible to give a general answer about the funded system's impact on savings and growth. So, for example, the recent World Bank report stated that 'the effect of funding on aggregate savings are still open to discussion'.[167]

However, where funding is assessed as conducive to savings and economic growth, there are other models available in addition to private funded schemes. There is a viable option of state-organized funded pension system, with its own advantages and risks.[168]

Public pension system funding can be found all around the world, in both developed and developing countries. One of the reasons for embracing this concept, especially in developing countries, was the desire to use the

[166] It needs to be noted that the correlation of domestic savings and investments has been widely discussed for the last 25 years, known as the Feldstein-Horioka puzzle. However, the discussion remains open.

[167] Old Age Income Support in the 21st Century, An International Perspective on Pension Systems and Reform, The World Bank, 2005, p. 47

[168] More detailed analysis can be found in B. Mijatović and D. Hiber – Pension Insurance Capitalization in Serbia, CLDS, 2008

advantages of public management and avoid the weaknesses of private one in countries with a rather weak financial system and financial intermediaries. Developed countries introduced reserve funds owing to recognition of the forthcoming demographic crisis, in an attempt to avoid or offset its adverse effects on the public pension system.

A pronounced advantage of public investment funds lies in low administrative costs, arising from the fact that they do not have to cope with considerable costs associated with policy advertising and sale, while at the same time, they enjoy a large economy of scale in all operations (money transfers, pensioner records, investment, conversion of capital into pensioners' annuity policies etc). This makes their operations far cheaper then that of private funds, and with all other circumstances the same, ensures higher net return for pensioners.

Also, conceptually, a public capitalized fund (reserve/buffer fund) provides more flexibility than private funded schemes. While the latter have no other option than to ground pension entitlements on defined contribution method, since otherwise they could not attract contributors, public fund can support any system: defined contribution, defined benefit, NDC or any combination of these. What this actually means is that public pension fund does not predefine the pension system structure, it is able to accommodate to any model of pension insurance. System flexibility is further reinforced by the fact that multiple sources are viable on the revenue side: not only individual pension contributions, but also money and assets from other government sources, such as privatization, budget, oil receipts and similar.

The main risk is poor state management of the public capitalized fund. A decades-long experience has proven that's often the case, i.e. public fund management has often ruined the entrusted capital, especially in developing, but not uncommonly in developed countries.

There are two chief risks. The first risk is the incompetent management, with ignorant and uninterested civil servants entrusted with managing large capital. The second is fund misuse by the government, that is, ministry of finance. Such misuse can be manifested in different ways. For example, the fund may be forced to borrow to the budget at a low interest rate, lowering its investment returns. Next, it may be prevented from investing in most profitable securities, and directed toward projects somebody deems extremely

useful for the economy, such as particular industries, infrastructure or regional development. The third example is ban on cross-border investments justified by reasons of domestic development, which usually lowers the fund's return and increases operational risk.

Nevertheless, the last decade has offered examples of well established and organized public pension investment funds, whose successful management produced excellent results. A number of developed countries (Canada, Ireland, New Zealand, France, Spain, Sweden, Poland etc) have partially funded their pension systems through reestablished or fundamentally reformed reserve funds, succeeding to set a sound foundation for their operation and achieve high return. The main success mechanisms are the following: first, an unequivocal commercial mandate was defined, i.e. investment governed by maximization of return, without the interference of other social-economic criteria; second, an institutional framework was created in which the fund is really independent from government interference and its funding needs.

Private funded system contributes to capital market development

Strong investment inflow from private funds undoubtedly provides a strong boost to capital market development, in developing and developed countries alike. In some of developed countries, such as US, UK or Netherlands, pension funds are the chief players, while in developing countries which underwent pension reform according World Bank model, they present the driving force of securities market development.

Favorable effects of pension insurance funding come through two channels: Firstly, significantly enhanced market liquidity, since the newly generated funds' capital strongly drives demand for financial instruments. Not only that it pushes up the prices of existing assets, it also incentivizes creation of new ones, which in turn boosts projects in the real sector and facilitates their funding. The price of capital is decreased.

The second positive influence is the emergence of long-term securities and new market segments, such as life insurance, new instruments (e.g. inflation-indexed bonds and annuities) and similar. Aiming to match the maturity structure of assets and liabilities, pension funds invest in long-

term instruments. A typical example of funds' positive influence on market functioning is Chilean experience. The maturity of corporate bonds in this country was extended primarily owing to funds' investment activity. Bonds' maturity, ranging between 10 and 15 years in the first half of 90s, extended to 30 years in the beginning of the 2000s.[169]

In addition, such funds usually drive forward stock exchange regulation and technical performances. Markets move toward greater efficiency, favorably impacting resource allocation and economic growth.

However, there are several objections casting a shadow over this (overly) optimistic picture. First of all, while financial markets development is welcome, it is debatable whether it is crucial for the country's economic progress. Not all of high developed countries can boast equally developed capital market. Some of them, namely the US and UK rely heavily on capital market in resource allocation, while numerous other countries, like Japan, Germany or France, have less developed financial markets.

Secondly, the idea that the reformed pension system plays a crucial role in building financial markets of developing countries poses a considerable risk to the pension system itself. Namely, in countries with weak institutional capacities and underdeveloped financial infrastructure one wonders if it advisable to risk huge amounts of capital and a secure old age of a great number of people hoping that all the things that are known for being notoriously malfunctioning will finally start to operate. In other words, the reformed pension system may, in the course of financial system development, realize low returns while experiencing high risk or, worse yet, undergo severe stock market crashes and end up with a portfolio of worthless securities.

To put it plainly, sound financial markets rely on sound regulation and strong regulating institutions, which calls for substantial administrative capacities lacking in many countries. Half-way solutions are not a good environment for development of a funded pension system.

A special difficulty associated with private pension funds is regulation of their investments introduced in all countries: limiting cross-border investments to

[169] Jorge E. Roldos, Ibidem, p.10.

a rather small amount. While it certainly stimulates the development of the domestic capital market, this measure at the same time deteriorates the risk-return combination in pension funds. Namely, if their managers would rather invest abroad, but are being compelled by the state to invest in domestic securities, there is no doubt that they have been precluded from making a better investment and directed toward a less profitable one.

Such channeling of funds' money into domestic market can only, in an imperfect market, push up the prices of existing assets, it cannot create new real assets. Not only that such process is not particularly useful for the economy, it also inflates stock exchange securities above their fundamental values, ultimately leading to bubble burst followed by a range of adverse consequences.

In developing countries without viable financial markets, the possibility of portfolio diversification is particularly limited. Stock markets in these countries are burdened by high risks, hence funds' high exposure to investment in government bonds.

Table 6-1 **Pension Funds' Portfolio Composition in Developing Countries, 2002 (in % of assets)**

Country	Government securities	Financial institutions	Corporate bonds	Stock	Investment funds	Foreign securities	Other
Argentina	76. 7	2. 6	1. 1	6. 5	1. 8	8. 9	2. 4
Bolivia	69. 1	14. 7	13. 4	0. 0	0. 0	1. 3	1. 5
Chile	30. 0	34. 2	7. 2	9. 9	2. 5	16. 2	0. 1
Colombia	49. 4	26. 6	16. 6	2. 9	0. 0	4. 5	0. 0
Mexico	83. 1	2. 1	14. 8	0. 0	0. 0	0. 0	0. 0
Peru	13. 0	33. 2	13. 1	31. 2	0. 8	7. 2	1. 5
Uruguay	55. 5	39. 6	4. 3	0. 0	0. 0	0. 0	0. 5

Source: World Bank: "Pension Reform and the Development of Pension Systems", Washington, 2006, p. 32

Owing to such portfolio composition, there is actually no significant difference between private pension funds and pension funds in a PAYG system. Rates

of return on investments are slightly above those in a PAYG system. Fund management fees are high, and they almost equalize the rate of return to the PAYG rate. Finally, the rate of return of funds whose portfolio is primarily based on government bonds is not a free market, but a state-determined variable.

Let us conclude. Pension reform oriented toward private funded insurance schemes does contribute to the development of domestic capital market, but often the price is paid by the funds, through higher risks and lower returns.

Private funded system reduces government interference in the pension system

Public pension systems do not have a reputable history. In many countries, especially developing ones, the state has betrayed citizens' trust by a number of failures. Naturally, in choosing a new pension system, the criterion of reduced government's role in pension system management gains more weight.

Indeed, in a pension system based on private funded schemes, private initiative, competition and financial market play a dominant role. Many people find it appealing that the state has a less visible role.

However, at a closer look, one discovers that the government has a key role in private funded pension systems as well. Among other, the government is in charge of the following:

- Prescribes pension insurance as mandatory for individuals, i.e. leaves no choice for them;
- Closely regulates this type of pension insurance;
- Performs detailed regulation of financial markets;
- Licenses pension funds, i.e. selects and approves participants in this sector;
- Prescribes investment criteria, thereby crucially influencing funds' investment performances;
- Typically, through investment criteria, ensures the placement of a large quantity of its own bonds into private pension funds, which relieves the government's transition costs, but mars the funding nature of the system, i.e. transforms it, at least partially, in a PAYG system;

– Strictly supervises pension funds' operation in order to prevent failures due to poor functioning;
– Formally or informally guarantees decent benefits, regardless of investment and other performances of pension funds.

These and the abovementioned arguments clearly show that in shifting from PAYG to private funded system the government does not withdraw from the business; merely its techniques of influence are changed. The government continues to exert a key role. Maintaining such influence is not meaningless, there is a firm logic behind it: government paternalism in pension sector is a natural given. As Kotlikoff nicely put it,[170] there some things the government cannot allow:

– The government cannot permit two workers who make the same contributions to end up with widely different retirements because one makes better investment decisions;
– The government cannot permit two workers to receive very different pensions/annuities because of different life expectancy;
– The government cannot permit a cohort of workers who contribute faithfully to privatized pension system to end up with very low retirement income because the capital market performed very badly over key years in their workspans;
– The government cannot permit the financial industry to charge workers excessively high fees;
– The government cannot let investments be too risky;
– The government cannot allow that the poor end up with a very bad deal;
– The government cannot allow that people who did not participate in the pension system to end up without any income support.

The state that would allow all of the above could just as easily accept plain mandatory savings, loosely regulated, as an exclusive method of old-age income support. However, each state must prevent at least some of the above things from happening and typically most or all of them, which inevitably entails its huge involvement in pension insurance, including private funded schemes.

[170] L. J. Kotlikoff – Pension Reform – the Triumph of Form over Substance?, Lecture Presented to the Latin American Meeting of the Econometrica Society and the Annual Meeting of the Latin American and Caribbean Economic Association, Mexico City, November 2, 2006

In addition, the presented Argentina's experience has shown that at times of crisis the government is prone and capable of jeopardizing funded system operations, in much the same manner as the regular PAYG system.

Conclusions

The analysis of claimed advantages of private funded systems over PAYG system has proven some of these claims to be untrue, other to be occasionally true or false (depending on the country and its economic, institutional and pension arrangements), while some yet are inconclusive. Therefore, unfortunately, there is no reliable answer to the general question on which of the two systems – private funded or PAYG – is better.

The core issue revolves around: whether the potential advantages of private funding in terms of economic growth are sufficient to accept (1) higher risks borne by pensioners (investment risk and risk of poor management of a private fund) and (2) costs of pension system reform, expressed in terms of transition costs, as well as administrative efforts, learning on the part of private stakeholders and similar.

Secondly, it should be kept in mind that the choice between private funded and public PAYG system based on defined benefit or point method is not the only viable reform choice. Also worthy of attention are the alternative mechanisms, such as parametric reform of the PAYG system, NDC and public funded schemes, and they should be analyzed and taken into consideration.

7. Rationale and Conditions for Introduction of Pillar II in Serbia

"The role of pillars is largely dependent on the country context and stage of development. While in more developed countries all pillars may be assigned a function in pursuit of the primary and secondary goals of a pension system, the inherited system typically creates a constraint on the choices. In contrast, less-developed countries are often essentially unconstrained by an inherited pension system. However, lacking both financial markets as well as capacity to implement and administer new systems limits the choices among various pillars for these countries."[171]

When it comes to Serbia, one could say that pillar II introduction would face both types of constraints – the one characteristic of developing countries, such as underdeveloped financial markets and weak administrative capacities, and the other dictated by the existing pension system, typical of developed countries.

7.1. Level of Transition Cost in Serbia[172]

In contrast to typical World Bank client countries, such as Latin American countries, whose pension systems were poorly developed and of low-coverage, Serbia's pension system, similar to other Central and Eastern European countries, is one of long tradition, covering large portion of the population. Hence, the transition issue is one of the key constraints to pillar II introduction.

[171] Holzman, R. and Hinz, R. (2005), *Old-Age Income Support in the 21st Century*, The World Bank, p. 94.

[172] Projections in this section relies on *PMP - Pension Modeling Package*, USAID/Bearing Point, Nikola Altiparmakov (with Katarina Stanić), 2006

This section presents the calculation of *implicit (gross) transition cost for Serbia*, defined as a ***difference between contributions diverted to pillar II and savings in pillar I made on grounds of pillar II functioning.*** Other expected savings are not taken into account, especially savings in pillar I that are not directly linked to the introduction of pillar II.

The model description and underlying assumptions are explained in Box 1.

Box 7-1 **Model and assumptions**

As explained in the *Section 4.5.* there are two basic ways to calculate transition cost. The baseline method whose results are presented in this section is the so called fixed prospective replacement rate method. According to this method, transition cost is defined as contributions paid into pillar II, excluding benefits disbursed from pillar II. The transition cost no longer exists once pillar II benefits outstrip contributions. Our starting assumption is that the PAYG system is designed in such a way that savings in the system equal the benefit payments from pillar II. Therefore, guarantees usually provided by the state regarding pillar II performance are implicitly embedded. In relation to that, the level of transition cost is sensitive to the amount of pillar II return and fees (for a detailed explanation see *section 4.5 Transition Cost*).

All the calculations are carried out under two macroeconomic scenarios – *basic and conservative scenario*. Given that transition cost is usually expressed as a percentage of GDP in the year when it occurred, there is actually no significant difference in transition cost levels under different macroeconomic scenarios. We have therefore presented the results of only one scenario – *conservative*.

The underlying assumptions in the conservative scenario are the following: GDP growth of 5% until 2012, its decline to 4% until 2020, and its consequent fall to 3%; wage growth follows partially GDP growth, it reaches 4% until 2012, and then declines to 3%. Regarding employment, the unemployment rate(LFS) is expected to decline to 7.5% by 2025. A more conservative assumption on unemployment reduction (e.g. to 10% in 2025%) would lower implicit transition cost by approximately 3 percentage points.
Retirement age is in line with the current law – 60 years for women and 65 years for men (however, in order to simplify the projection the 62 year average is applied to both sexes).

Length of pensionable service is projected based on mortality tables.

The average annual real rate of gross return in the accumulation phase is assumed at 5.5%, while the assumed real discount rate in the liquidation phase stands at 4.5%. This return is higher compared to the experiences of transition countries that have introduced pillar II, but lower than return rates generally expected in pillar II. Up-front fees account for 3% of contributions (which is the current legal cap for voluntary funds in Serbia), and the fee for purchasing annuity is 5% of the value of total assets. Rate of return sensitivity is shown in the section *4.5.2 Methods for Calculation of Implicit Transition Cost*..

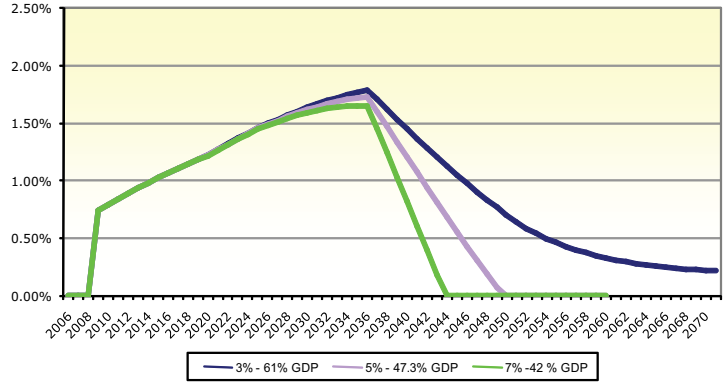
Source: PMP - Pension Modeling Package, USAID/Bearing Point, Nikola Altiparmakov (with Katarina Stanić), 2006.

We emphasize here that this is not a general equilibrium analysis. It means simulations do not account for the effects that demographic trends and possible switching to the funded system might have on key macroeconomic variables.

This section shows the transition cost in Serbia if the current 22% of contributions in the PDI fund, 7% are diverted to Pillar II[173], and the contribution rate is not changed over time (Table 7-1and Figure 7-1). For the hypothetical scenario of introducing pillar II in 2009 we have calculated the cost for several alternatives of *cut-off ages* in the mandatory private system – all persons younger than 30, persons younger than 35 and 40.

[173] The program that we use (PMP) can easily compute the amount of the transition cost for any other amount of contributions. The following text presents transition cost for different contribution levels.

Figure 7-1 **Transition Cost – 7% Contributions for Different Cut-off Ages**



Source: PMP, USAID/BearingPoint (2006)

Table 7-1 **Transition Cost – 7% Contributions for Different Cut-off Ages (by selected years and in total, % GDP)**

	<30	<35	<40
2009	0.50%	0.75%	0.99%
2010	0.55%	0.79%	1.04%
2011	0.59%	0.84%	1.09%
2012	0.64%	0.89%	1.13%
2013	0.69%	0.94%	1.19%
2014	0.74%	0.98%	1.23%
2015	0.78%	1.02%	1.27%
2016	0.82%	1.07%	1.30%
2017	0.87%	1.11%	1.34%
2018	0.91%	1.15%	1.38%
2019	0.95%	1.18%	1.41%
2020	0.99%	1.22%	1.45%
2025	1.24%	1.46%	1.67%
2030	1.43%	1.62%	1.79%
2035	1.57%	1.72%	1.39%
2040	1.65%	1.22%	0.87%
2045	1.04%	0.60%	0.34%
2050	0.33%	0.02%	0.00%
2055	0.00%	0.00%	0.00%
Total	**47.2%**	**47.8%**	**48.0%**

NOTE: Only data for some years are presented

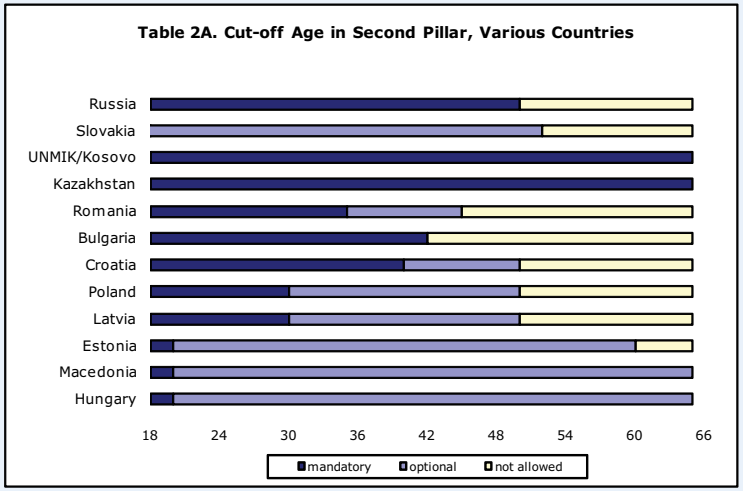
Source: PMP, USAID/BearingPoint (2006)

As can be seen, the transition cost is very high and long-lasting. In all variants, transition cost varies from 0.5% to almost 2% of GDP annually (of the year when it was created), i.e. it reaches **almost 50% of GDP in total.**

We have not analyzed the system that would be compulsory for some age groups, and optional for other age groups. Clear cut-off ages were chosen, primarily because of a simpler modeling and a clearer presentation of the cost. Finally, this does not affect the total amount of the transition cost, only its time dynamics, as explained hereinafter.

Box 7-2. **Cut-off Ages for Entering Pillar II – Experience**

The cut-off ages for entering pillar II were different in countries that introduced pillar II. Entering pillar II was often optional for some age groups. Experience so far suggests that the majority of countries that introduced pillar II underestimated the initial transition cost for this very reason, as they did not account for the high enough probability of switching to pillar II of cohorts who`s participation was optional. The countries introducing pillar II are usually countries in transition were there is a lack of confidence in the state and a large percentage is joining the private sector. Thus, for example, in Hungary and Poland the transition costs are significantly higher than the initially expected, due to an inadequate forecast of the number of participants of pillar II, exerting a high fiscal pressure especially in Hungary. The graph below illustrates cut-off ages of entering pillar II in the neighboring countries



It is often believed the size of the transition cost is directly proportionate to the percentage of employees that opt for pillar II, and to the age limit set for switching to pillar II (*cut-off age*). It is therefore believed that a lower cut-off age facilitates transition. Actually this is not true, as illustrated by Figure 7-1 and Table 2-1.

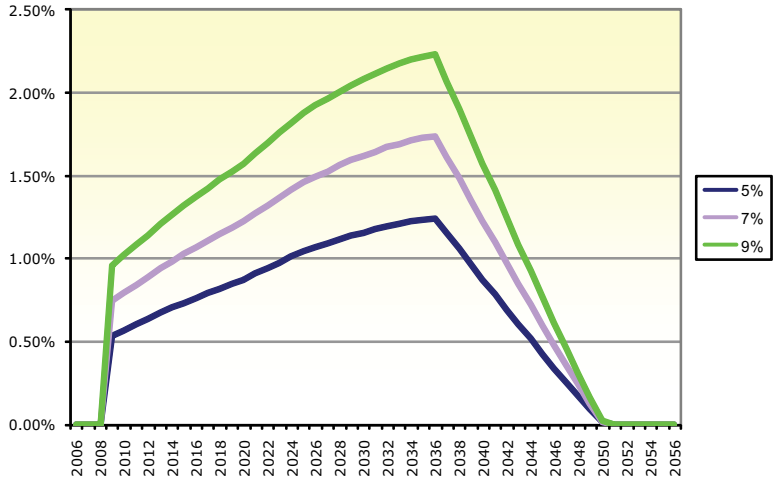
The lower cut-off age does entail lower transition cost in the initial years, but its duration is prolonged, because savings in the PAYG system upon introduction of pillar II - in the form of lower pension benefits to be disbursed from the PAYG system to pillar II contributors – occur only when the oldest generation contributing to pillar II retires. If the oldest generation is 35 years old now, it is evident that the first savings will be made only 30 years afterwards. Therefore, to be more precise, **the cut-off age of those entering pillar II affects the transition cost duration and not its total amount.**

In concrete terms, if the younger generation only (e.g. persons younger than 30) enters pillar II, the transition cost is lower in the initial years, but has a longer span, since the benefits arising from pillar II introduction (in the form of lower pillar I pension) occur not earlier than 2041, when this generation starts retiring. On the other hand, the cost of introducing pillar II for all persons younger than 40 is significantly higher in the first 10 years (by around 0.5% of GDP), but savings in the PAYG system occur 10 years earlier.

The level of the transition cost is proportional to the *amount of contributions* diverted to pillar II, as illustrated by Table 7-2 and Figure 7-2. To demonstrate this, we have applied different contribution rates to the case of 35 years as the cut-off age for switching to pillar II.

Although the introduction of the smaller-in-size pillar II, (for example, 2% of contributions) would require fewer additional financial sources, this is a very rare case in practice (of the transition countries, only Bulgaria introduced a 2% contribution pillar II). The main reasons are very high fixed administrative costs of pension funds per participant. According to some analyses, the minimum that justifies the introduction of pillar II, i.e. that provides a potentially higher

Figure 7-2 **Transition Cost for Different Amounts of Contributions (% GDP)**



Source: PMP, USAID/BearingPoint (2006)

return than the expected return of the PAYG system is 4-6% of contributions[174]. However, different system organization would make this feasible, as seen on the example of Sweden.

When transition cost is calculated according to fixed prospective replacement rate method, it is also sensitive to pillar II performances, i.e. the rate of return. This is also illustrated by Figure 7-3

According to this method, the guarantees that governments typically provide in case of unsatisfactory pillar II performance (or inadequate level of benefit caused by some other reasons) are actually implicitly embedded in transition cost[175]. The Figure 7-3 demonstrates that the higher rate of return, the shorter the duration of the transition cost.

[174] For example, on the basis of experiences of Croatia, Hungary, Kazakhstan and Poland, Dobronogov and Murti notice there are "high fixed costs upon the establishment of funds". As a consequence, the economy of scale is rather strong in the industry. On the basis of available experience, they estimate the annual fixed cost at around $35 by individual account. In view of such a level of cost, individual accounts should reach 4-6% of average wage so that pillar II can function, i.e. to realize the rate of return higher than is expected from the existing PAYG system.

[175] Such cost could be more conveniently called the cost of inefficiency/unprofitability of pillar II, rather than the transition cost, but this is a separate topic.

Table 7-2 **Transition Cost Level for Various Amounts of Contributions to Pillar II**

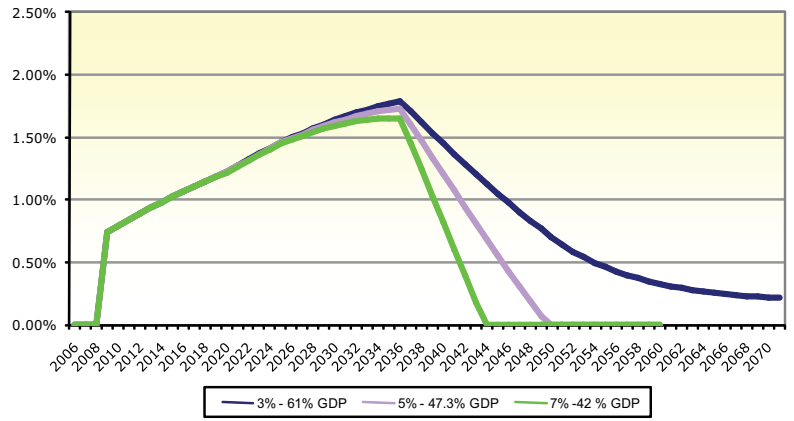
	5%	7%	9%
2009	0.53%	0.75%	0.96%
2010	0.57%	0.79%	1.02%
2011	0.60%	0.84%	1.08%
2012	0.63%	0.89%	1.14%
2013	0.67%	0.94%	1.21%
2014	0.70%	0.98%	1.26%
2015	0.73%	1.02%	1.32%
2016	0.76%	1.07%	1.37%
2017	0.79%	1.11%	1.42%
2018	0.82%	1.15%	1.47%
2019	0.85%	1.18%	1.52%
2020	0.87%	1.22%	1.57%
2025	1.04%	1.46%	1.88%
2030	1.16%	1.62%	2.08%
2035	1.23%	1.72%	2.21%
2040	0.87%	1.22%	1.57%
2045	0.43%	0.60%	0.77%
2050	0.01%	0.02%	0.02%
2055	0.00%	0.00%	0.00%
Total	34.2%	47.8%	61.5%

NOTE: Only data for some years are presented
Source: PMP, USAID/BearingPoint (2006).

In the scenario with the assumed rate of return of 3% net fees[176], while wages grow in line with the conservative scenario at the rate of 4% until 2012, and at the rate of 3% thereafter, the transition cost practically does not end. These findings are not surprising. They actually illustrate the well-known rule that

[176] Up-front fees remain at 3% of contributions in the accumulation phase and 5% of purchase fee in the liquidation phase. As already noted, the assumptions primarily illustrate what would happen in particular situations, they do not reflect future projections.

Figure 7-3 **Transition Cost Until 2071 – Sensitivity to Different Rates of Return**



NOTES: In order to present results in a simpler form, the assumed discount rate in the liquidation phase equals the net return in the accumulation phase.
Source: PMP, USAID/BearingPoint (2006).

the introduction of pillar II pays off if the pillar II rate of return is higher than the PAYG internal rate of return, which equals the wage bill growth rate. Detailed analysis of transition cost sensitivity to the rate of return, wage growth, different methods of transition cost calculation etc. can be found in section *4.5 Transition Cost*.

7.2. Capital Market in Serbia – Investment Possibilities

7.2.1. Domination of banking as the main feature of the Serbian financial sector

Following the restoration of banking activity, the Serbian financial sector has become recognizable by the strong domination of the indirect system of financing. Financial sectors of neighboring countries have a similar characteristic. The key elements of the future stable configuration of the Serbian financial system and systems of Southeast European (SEE) countries are already identifiable. Over the mid term, these systems will be strongly banking-oriented, with the dominant role of indirect financing, a marginal role of financial markets (direct financing) and relatively undeveloped alternative forms of deposit-credit financial intermediation (mutual funds, microfinancing, savings banks).

Table 7-3 **The basic description of financial sectors of Serbia and comparable countries (as at end-2004)**

	M2/GDP ratio (percent)	Dollarization (euroization) of deposits (percent of total)	NPLs (percent of total loans)	Credit/GDP ratio (percent)	Interest rate spreads (percentage points)
Bulgaria	50	48	7.0	37	6.1
Romania	27	41	8.1	17	13.7
Croatia	68	87	4.5	57	10.1
Macedonia	31	50	8.5	24	5.5
Albania	50	30	4.5	10	6.5
Montenegro		100			
Serbia	21	70	23.0	20	11.0
Bosnia and Herzegovina	51	50	3.3	45	7

Sources: IMF and EBRD statistics. "Macroeconomic Challenges with EU Accession in Southeastern Europe: An Overview", IMF Working Paper, Prepared by Piritta Sorsa, authorized for distribution by Poul M. Thomsen, February 2006. International Monetary Fund WP/06/40.

Banking of SEE countries is growing rapidly, maintaining a relatively high growth potential. Its internalization yields benefits and accelerates growth. This estimate should not be generalized to financial markets in the region. Their future is linked to the EU accession process. Besides benefits, such as normalization, the internalization of national financial markets within the EU carries the risk of migration of the best shares from national to international markets.

The latter part of the text will explore the main features of the Serbian capital market in light of its capacity to absorb additional demand which would be created by the introduction of mandatory private pension funds. The selection of findings is adjusted to the aim of the analysis – determination of the market capacity to absorb without radical disturbances, additional demand and to enable the accomplishment of the primary aim: optimization of the pension system.

7.2.2. Capitalization and Liquidity of the Serbian Financial Market

If development of the Serbian capital market is measured only by the standard indicator of market capitalization that witnessed high growth dynamism in the 2000-2006 period, it is possible to conclude that the Serbian financial market has registered vigorous expansion in the last four years (prior to the financial crisis).

Table 7-4 **Market Capitalization in RSD million**

	Stock	Bonds	Total
III 03	55,882.00	87,730.33	143,612.33
IV 03	77,443.35	102,296.10	179,739.45
II 04	101,624.45	106,948.91	208,573.35
III 04	138,841.64	129,780.82	268,622.47
IV 04	190,063.78	149,180.88	339,244.66
I 05	281,122.54	161,825.87	442,948.41
II 05	303,120.18	160,448.09	463,568.27
III 05	339,462.79	175,061.80	514,524.59
IV 05	388,977.19	181,040.27	570,017.46
I 06	434,927.38	182,987.50	617,914.88
II 06	466,800.41	161,198.87	627,999.28
III 06	585,051.29	152,860.74	737,912.03
IV 06	658,833.83	150,186.81	809,020.65
I 07	1,066,743.05	159,144.59	1,225,887.64

Source: The Belgrade Stock Exchange, www.belex.co.yu

However, this indicator is inadequate because it does not describe well the actual situation as a great portion of total capitalization is illiquid[177]. A more reliable measure of capital market activities are the turnover volume and the liquidity ratio that reveal the pattern of behavior of the Serbian capital market.

[177] Source: Živković, B., Urošević, B., Cvijanović, D. Drenovak, M., *Serbia's Financial Market: 2000-2005*, Quarterly Monitor, No 1, January - July 2005, p. 59-66

Table 7-5 **Turnover in RSD million**

	Stock	Bonds	Total
III 03	6,100.04	3,210.41	9,310.44
IV 03	17,080.48	3,380.15	20,460.63
II 04	2,878.38	2,190.99	5,069.37
III 04	5,992.31	2,351.15	8,343.46
IV 04	8,477.95	2,375.76	10,853.72
I 05	11,396.26	2,242.45	13,638.70
II 05	5,846.66	1,946.49	7,793.15
III 05	8,535.15	2,327.30	10,862.45
IV 05	13,381.40	2,680.12	16,061.53
I 06	14,122.23	2,406.79	16,529.02
II 06	17,934.51	3,557.41	21,491.92
III 06	20,490.63	2,827.18	23,317.81
IV 06	34,751.38	4,493.82	39,245.20
I 07	39,542.10	4,119.87	43,661.98

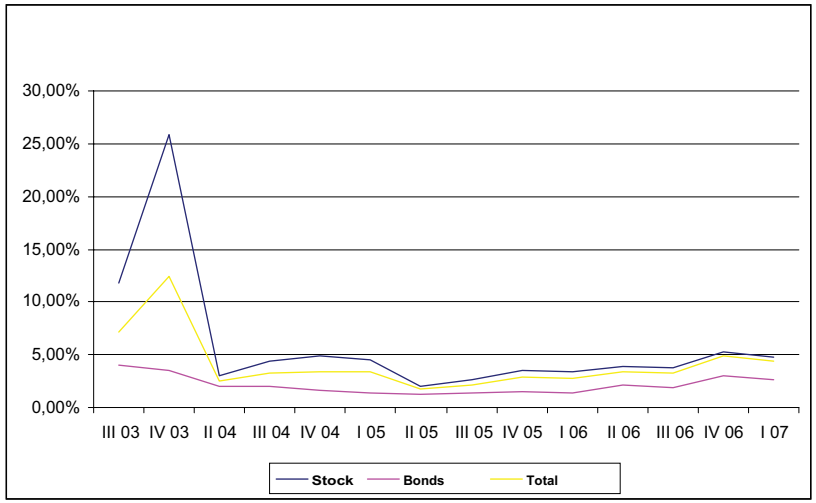
Source: The Belgrade Stock Exchange, www.belex.co.yu

The data confirm the thesis about strong illiquidity of the Serbian stock market, despite the appreciable growth of the turnover volume, primarily in shares[178]. A small number of companies whose shares are actively traded and a small volume of turnover in these shares are the main problems for the further development of this market. The liquidity ratio – the ratio of total turnover to total market capitalization, is very low. The turnover to capitalization ratio stood at 6.65% in December 2003, 2.26% in December 2004, around 1.3% in December 2005, and around 2.5% in the first quarter of 2007.

[178] For example, Novi Popovac cement plant recorded market capitalization of RSD 9.6 billion in December 2004, but owing to the fact that the company's shares were fully repurchased, there was no share turnover whatsoever. Please see: *Survey Serbia and Montenegro* »*Changes in the Financial Sector of Serbia*«, Vol. XLVI 2005

Furthermore, it is arguable whether this indicator can be calculated precisely enough, since the turnover that results from the one-off redemption of shares and that only formally takes place on the stock exchange, does not reflect the real market liquidity, and there have been numerous such transactions. The presented liquidity ratios should therefore be taken with some reserve because the real measure of market liquidity would be reached only by identifying truly liquid shares and subsequent measuring of their share in total turnover and capitalization.

Figure 7-4 **Liquidity Ratio**



Source: www.belex.co.yu

7.2.3. Continuous and Discontinuous Market

There are practically two markets on the Belgrade Stock Exchange: the continuous (continuous trading) and discontinuous market. Significant differences can be identified between these two markets.

The discontinuous segment is a one-way market. Experience has shown that citizens are the main sellers of shares on this market. They received shares free of charge in the mass insider privatization process (primarily in the second

wave of privatization in 1997). In other words, employees-shareholders are dominant on the supply side. The dominant buyers on this market are practically acquirers of these companies, and not stock buyers. These buyers aim to acquire a package of company shares that would enable them to establish actual control of the company. The mechanism of ownership concentration and consequent reduction of the discontinuous market can be illustrated as follows: prior to concentration and during the process itself, the turnover in shares of the "targeted" company accelerates, the number of transactions rises until a sizeable majority block of shares is formed, i.e. the block that provides actual control of the company. The turnover in the shares thereafter falls, demand contracts, and share prices consequently decline. This is caused primarily by the unwillingness of a person or a group of related persons to sell their stock of shares once they have concentrated ownership of company shares. The aim of purchasing shares is control of the company, which is enabled by the acquisition of the majority block of shares. This corroborates the theory that the high value of private control benefits implies the low level of protection of investor ownership rights[179]. Given the rather dispersed ownership structure inherited from insider privatization, a company could also be managed with sizeable, but not necessarily majority blocks of shares. Owners on the Serbian stock market are invariably interested in majority blocks only as they guarantee actual control of the company and make reliance on legal aid unnecessary. On the other hand, there is no great interest in significant (but minority) blocks offered by the Share Fund. As already mentioned, out of the total number of companies on the capital market, offered mainly by the Share Fund, only 55%, 57% and 54% were sold in 2002, 2003 and 2004 respectively. Investors' lack of interest in significant minority blocks and insistence on actual control of the company attest to investors' mistrust in legal protection and a high value of private control benefits that are characteristic of the low quality of investor protection.

The owner who establishes control of the company is uninterested in capital increase through public offering as this can jeopardize the ownership structure and the control gained. Other buyers are also uninterested in such a company

[179] Please see: La Porta, R., Lopez-de-Silanes, F., Shleifer A. and Vishny, R. W., *Law and Finance*, Journal of Political Economy, Vol. 106, No. 6, 1998, 1113-1155; La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. W., *Legal Determinants of External Finance*, Journal of Finance, Vol. 52, No. 3, 1997, 1131-1150; La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. W., *Investor Protection and Corporate Valuation*, Journal of Finance, Vol. 57, No. 3, 2002, 1147-1170.

Table 7-6 **Turnover on Continuous and Discontinuous Stock Markets**

	Total turnover	Continuous trading	Single auction price + Minimum price + BLOCK transactions (Discontinuous)
Q3 2001	0,02	0,00	0,02
Q4 2001	0,03	0,00	0,03
Q1 2002	0,06	0,00	0,06
Q2 2002	1,77	0,00	1,77
Q3 2002	3,01	0,00	3,01
Q4 2002	2,13	0,00	2,13
Q1 2003	2,83	0,00	2,83
Q2 2003	4,24	0,00	4,24
Q3 2003	6,09	0,00	6,09
Q4 2003	17,04	0,00	17,04
Q1 2004	8,18	0,00	8,18
Q2 2004	2,88	0,00	2,88
Q3 2004	5,99	0,00	5,99
Q4 2004	8,30	1,20	7,10
Q1 2005	11,40	3,29	8,11
Q2 2005	6,05	2,01	4,05
Q3 2005	4,08	1,48	2,60
Q4 2005	13,43	7,51	5,92
Q1 2006	14,14	6,51	7,63
Q2 2006	18,00	9,23	8,77
Q3 2006	20,49	10,48	10,01
Q4 2006	34,75	24,02	10,74

because they cannot exert a significant influence on decision making and operations of the company due to the ownership and consequent control structure. The share of such a company is unattractive to portfolio investors either, because it is illiquid and its price is (for reasons described) relatively low. As a consequence, such a company goes private (though not always formally). Another consequence is a gradual market "reduction". Also, less attractive companies remain over time, and therefore, in aggregate terms, the price-to-book ratio has been on the constant decline since the beginning of

2006. The ratio then changed in respect to a certain number of shares that individual investors and foreign investment funds were interested in. The ratio value is still low on the discontinuous market which can therefore be deemed a corporate and not a stock market. This mechanism accounts for the great discrepancy between the level of capitalization and the turnover value on this segment of the market.

These findings indicate that the discontinuous trading market (which is still dominant in Serbia, although its role is being downscaled owing to its reduction and the development of the continuous trading market) serves purposes other than standard ones: instead of supporting companies to go public, it contributes to their going private. This process takes place in conditions of low information and price efficiency. It is assumed that the market undervalues shares in such conditions, which additionally speeds up the process of its reduction. The following facts substantiate this thesis. Sellers on the discontinuous market come chiefly from the retail sector and they received their shares mainly free of charge in mass privatization. It means these shareholders cannot be observed as investors who chose to invest in equities of a particular company, but as employees who were legally granted "the right to shares" as a form of compensation for relinquishing their self-government rights. The majority of them do not have investor motivation or knowledge of rights they are entitled to as shareholders. They are not ready to gain this knowledge, and are mistrustful of future returns of companies that they were divested of in privatization. Further, as they are at the same time employed in the company, there is always the possibility that their agent (manager) dismisses them and deprives them of their existential income (earnings). Therefore, they do not have the possibility to control the manager by exercising their shareholder rights. The described situation on the capital market offers them the possibility to exit the company, but under discriminatory conditions. Minority owners are therefore without protection, even regardless of regulatory provisions, and are thus exposed to mass expropriation by majority owners or managers. As agents (managers) often acted against principals (shareholders), in concert with the acquirer, it was hard to differentiate between friendly and unfriendly acquisitions. Expropriation often involved the cancellation of rights to personal property disposal or

pressures on minority shareholders to sell their shares with a significant discount. The poor quality of corporate governance and incapacity of workers-shareholders to protect their rights with these mechanisms (although they enjoyed these rights in line with regulations) additionally accelerated the conversion of the discontinuous market into the corporate control market.

7.2.4. Special Restrictions for Pension Funds

Despite a substantial return (and high systemic risk) achieved prior to economic crisis, the Serbian financial market imposes special restrictions on institutional investors. These restrictions are visible in the current phase of market evolution as well. Some restrictions can be removed in the short-term, whereas some other will remain over the mid- and long-term.

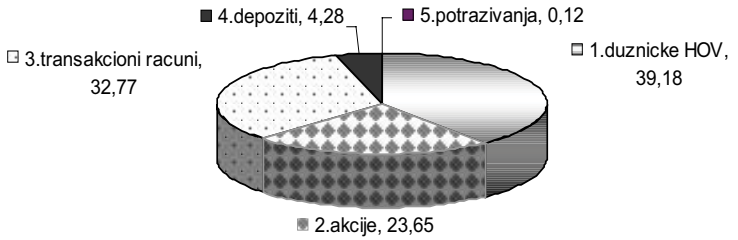
Restrictions regarding the possibility of portfolio diversification are acute in the short- and mid-term. Namely, demand of both individual and institutional investors is concentrated on a relatively limited segment of the market. Share prices on this market rise and decline rapidly and in big amplitudes. Another major restriction is the lack of instruments of low or relatively low risk. In addition to frozen foreign currency savings bonds whose market is relatively shallow, there are no classic low-risk instruments from municipal and corporate sectors. The result is a relatively shallow portfolio diversification, a significant share of cash and a relatively low return.

In Serbia, it is still hard to determine the stable rate of return of pension funds owing to the frequent fluctuation of values of pension fund investment units (without taking into account the current economic crisis). Funds' operating costs are high, which significantly reduces returns (for more detail, see *Section 4.3).* Around 55-60% of fund assets are expressed in dinars, and the rest is euro-denominated. Due to such a high percentage of euro-denominated assets, trends of investment units resemble those of the dinar exchange rate and indices of the Belgrade Stock Exchange.

The year 2007, before the financial crisis set in, witnessed a tendency of increased investments in shares, a negligible decrease in the percentage

of debt securities, and a surge in balances on transaction accounts, which was induced by the underdeveloped capital market, poor supply of financial instruments and the initial accumulation of funds.

Figure 7-5 **Composition of Total Assets of Pension Funds in Serbia, September 2007**



Source: The National Bank of Serbia, Voluntary Pension Funds Supervision Department, Belgrade, October 2007

In order to increase and diversify the supply of instruments, it is desirable not only to lower systemic risks, but to do the following as well:

a) to change basic financial market laws so as to enable the issuance of securities from public and corporate sectors with tolerant transaction costs;
b) to issue government and municipal securities, which entails a relatively comprehensive reform of state ownership management – assets of the central government should be separated from local authorities' assets;
c) to formulate the state public debt management strategy;
d) to cut down the commissions charged by the regulatory authority;
e) to develop market infrastructure that would enable the creation of the primary market of instruments;
f) to hinder the process of stock market reduction.

The above findings point to current constraints in solving the problem of institutional investors' portfolio optimization. Although the ratio of market correlations is probably low, wide diversification is limited by the poor liquidity of shares. Different groups of institutional investors are thus faced with different situations. Investment funds may take high risks (especially the so-called private funds) and non-life insurance companies may, in theory,

undertake a higher risk than pension (voluntary and mandatory) funds. The capacity of portfolio optimization in the first group of institutional investors is therefore greater than in the second group. This has been registered in the behavior of investment and voluntary pension funds to date. The problem flared up during 2007 when heightened demand, in conditions of the limited level and structure of supply, fostered the accelerated price growth and turnover concentration on a small number of shares.

The narrow investment base. Unless high risks of companies going public are eliminated, the asynchrony between the dynamism of demand and supply growth may trigger market disturbances. In current circumstances, turnover is obviously concentrated on several shares and one government bond. If there are no new issues of debt and equity instruments in the mid-term, the problem of market survival will arise and systemic risks will escalate. Further reduction in diversification and its efficiency would be the consequence of the potential accelerated demand growth. This feature of the market will probably last over the mid-term, which consistently jeopardizes efficiency of institutional investors, especially those whose capacity of risk-taking is limited by standard legislated norms.

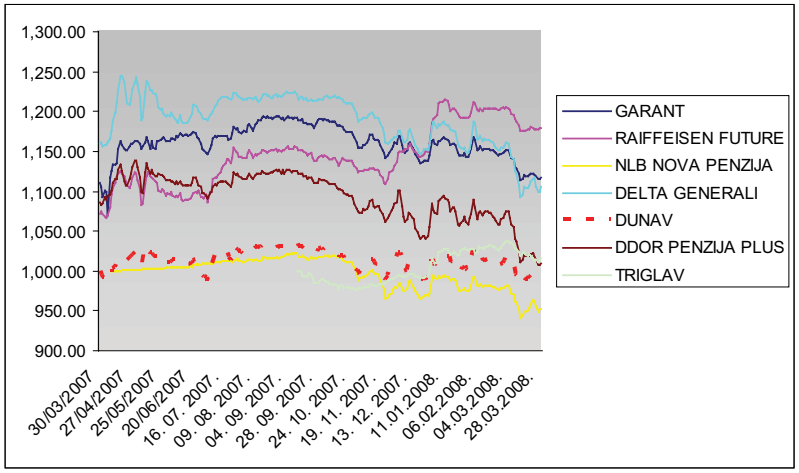
Therefore, a narrow investment base at the stock market causes that funded pension funds do not have sound and various investment alternatives. However, they are forced to turn to a smaller or even limited number of securities to invest their assets. Reliance on a small number of securities is certainly not good for safety and fund returns since: (1) the risk is high considering stocks, as some issuers of securities might go bust and endanger the assets of the fund; (2) the volatility risk, changes in stock prices might be high, which is not in conformity with the stability prerequisite considering maintenance of fund's assets; (3) there is a significant probability that investments in not more than several securities artificially increase their value which later might endanger stability of funds, as the bubble bursts.

In other words, voluminous inflow of investment assets from the pension system into the financial market should culminate in new numerous issuers of securities and encourage development of the market. However, sound financial regulations are necessary for such positive developments, accompanied by sound supervision over financial markets and trust of prospective investors in domestic securities and the financial market as a whole. In Serbia, by all

indications, the quality of regulations is not adequate, nor is trust in new issuers great enough, as securities fail to drum up any considerable interest among investors. Therefore, if the course of the funded schemes is followed, the first scenario would be more probable, i.e. the significant upturn in demand for established securities, whether government or of several large companies.

Over the mid term, the limited liquidity and shallowness of the market will constrain conservative institutional investors in deterring price blows coming from the market. In this way the regulation of funds enters a crisis. The standard restrictions on maximum exposure of a fund become inefficient, if the status of a security rapidly changes (liquid/ illiquid). This has been registered in the market behavior of voluntary pension funds to date. Their capability to protect themselves against price fluctuations in the given regulatory constraint against falls of the stock exchange index to safeguard the growing trend of the investment unit value, proved limited over 2007. The shallow market confronts this group of investors with a particular problem: ceasing to hold a security (disinvesting), they boost its supply and thus its price dips. This was not observed when it comes to investment funds, whose portfolio **structuring** rules leave more options for investing into less liquid securities from the discontinuous segment of the market.

Figure 7-6 **Pension Fund Unit Value in Serbia (30/03/2007 – 28/03/2008), in RSD**



Illiquidity of many securities especially shares at the Belgrade Stock Exchange, primarily means that they are hard to sell, as there is a limited number of prospective buyers. Consequently, any attempt to sell leads to the significant depreciation of prices. Therefore, in a shallow and illiquid market such as the one in Serbia, natural operation of pension funds is hard to achieve, steered towards investment portfolio changes, when needed. Any change in the composition of securities is hard to achieve, and it is usually coupled with high expenses. In plain words, the securities are hard to sell.

Investment Limits. Pursuant to the Law on Voluntary Pension Funds and Pension Plans, pension funds in Serbia may invest in debt securities of the National Bank of Serbia and the Republic of Serbia without restrictions, as well as in securities issued by legal entities with the state guarantee. The following limits apply to the investment of assets:

- 20% of assets may be invested in debt securities issued by units of territorial autonomy and the local self-government of the Republic of Serbia,
- Up to 20% of fund assets may be invested in debt securities of legal entities,
- 30% of fund assets may be invested in mortgage bonds issued in Serbia,
- 20% of fund assets may be invested in certificates of deposit issued by banks headquartered in Serbia,
- Up to 40% of fund assets may be invested in shares issued by legal entities headquartered in Serbia and traded on the Belgrade Stock Exchange Prime Market,
- Fund assets may be invested in shares issued by legal entities headquartered in the Republic of Serbia and not traded on the Belgrade Stock Exchange Prime Market (20% of fund assets from September 1 to December 31, 2007; up to 15% from January 1 to March 31, 2008; and 10% starting from April 1, 2008).

Funds may invest in debt securities issued by territorial local self-government units, provided the nominal value of the issue exceeds EUR 1.500.000 in the dinar counter value and the credit rating of these securities is at least A according to the methodology of the Standard & Poor's credit rating agency,

or A2 according to the methodology of the Moody's rating agency.[180]. If debt securities of legal entities meet the rating requirements, pension funds may, under certain conditions, invest in them as well.

Up to 10% of fund assets may be invested abroad into:

- Debt securities of states, international institutions, legal entities headquartered in EU and/or OECD member countries;
- Shares of legal entities headquartered in EU and/or OECD member countries;
- Certificates of deposit issued by banks headquartered in EU and/or OECD member countries.

The Law forbids investments in: financial derivatives, securities issued by a management company, custody bank, shareholders of the management company or another related entity. These restrictions are similar to those in comparable countries.

Table 7-7 **Comparative Review of Pension Fund Investment Limits in Croatia, Macedonia, Slovenia and Serbia181**

Asset:	Macedonia	CR	SL	SR
Investments abroad	20%	15%	100%	10%
Government securities	80%	min50%	100%	100%
Municipal bonds	-	30%	-	20%
Corporate bonds	40%	30%	-	20%
Mortgage bonds	-	-	5%	30%
Stock	30%	30%	30%	30%
Bank deposits and sec.	60%	5%/15%	30%	5%/20%
Investment funds	20%	-	40%	-
Financial derivatives	No	Yes/No	No	No
Real estate	No	No	30%	15%

[180] "RS Official Gazette", No.63/2007 and 67/2007

[181] The comparative overview is not full because groups of ownership have not been uniformly defined. The empty fields mean the country has not precisely determined the cap for the category, and not that investments in this category cannot be made.

Allowing investment in real estate is a highly contentious issue. The problem arises due to the obligatory disclosure of investment unit values on a daily basis, whereas the possibility of daily real estate appraisal does not exist in Serbia owing to the non-existence of a real estate market.

Regulators are thus faced with a hardly tractable dilemma about the main aim of regulation: safety or fund development (expansion) perspective. For the time being, the dilemma has been solved in favor of the first aim. The main regulation strategy can be seen in the comparative review: maximum exposure limits are set in such a manner that more attention is paid to safety than to profitability. Some restrictions are almost identical in all countries. Investments in shares and government bonds are a typical example. Investments in financial derivatives are allowed only in Croatia, but under certain conditions. As regards real estate, a percentage of fund assets is allowed only in Slovenia and Serbia, whilst funds in Croatia and Macedonia are not allowed at all to invest in real estate. It is obvious that all countries observed are faced with minor or major problems regarding the underdevelopment of domestic financial markets. The purpose of restrictions on investments abroad is to encourage the investment of the main portion of fund assets in the country where funds operate, and to bolster the development of financial markets of these countries The excessive outflow of funds abroad is thus prevented and the retention of funds in the country is stimulated. The question about the feasibility of the aim in the short-term remains open.

An important element of the investment policy is the state regulation of funds' investments. In this way the state seeks to minimize fund operation risks and to achieve other economic goals. This is usually done by prescribing structure limits for fund portfolios.

There are two decisions viewed as critical points for operation of funds and their safety. The first one concerns ratio of domestic and foreign securities in a portfolio. Regulation of the obligation funds have to invest a percentage (not more than 100%) into domestic securities is certainly detrimental to fund returns, as it limits access to foreign financial markets, where often returns are higher and risks lower compared to the domestic market. On the other hand, the overall social benefit from investing might be greater if the money

is invested in domestic securities, since it boosts domestic economic growth. Nevertheless, one must stay very cautious here, as forcing funds to make domestic investment choices would sooner ruin a fund than bring upswing in the domestic economic activities, which certainly should not be the goal. Funds should be conducive to development of financial markets in Serbia. Nonetheless, it must not be their sole purpose, nor should they be the main originator of the economic growth. In other words, funds should produce high returns coupled with moderate risks, to fulfill their main functions, and they should not be further exposed to risks of the underdeveloped and shallow domestic market. For example, funds should have diversified portfolios. This is not possible in circumstances of the Serbian financial market, where they are inescapably directed towards several large companies, hanging on their stock price movements. This option is far too risky. Stock price fluctuations at the domestic market might probably be wild, which would reflect on the financial position of funds, in addition to illiquidity (impossibility or difficulties to sell a security) of many securities in Serbia.

The next regulatory decision concerns participation of shares and bonds in portfolios, and mostly participation of government bonds. Namely, shares involve more risk and investment prudency undoubtedly entails bonds as a fundamental stabilizing measure. However, on the pretext of safeguarding funds from excessive risks, states usually tend to obligate funds to have a high percentage of domestic government bonds in their portfolios. It has a detrimental effect on funds (as it decreases returns), and on the state as well (forcing it to slip into larger and larger deficit). Ireland has averted the danger to funds by regulatory constraints set on investing capital of funds in government securities.

From the viewpoint of reasonable fund management, it is not necessary to restrain investment activities in any direction, since full freedom maximizes investment returns, with the desired level of safety. In other words, any restriction on investments causes a decrease in the number of investment options and therefore it is harmful.

If, however, limits are felt as necessary, there are some rules which might be recommended:

- restrictions should decrease with time, as the initial justification of inexperience given by the fund management, loses credibility with time;

- the lowest levels (the floor) should not be set, but exclusively the ceilings (the highest amount in percentages); this rule aims to prevent excessive concentration on government bonds by prescribing high minimum thresholds;
- Protection from overly high derivative risks should be envisioned, especially when not hedged against the currency risk.

In the long-term, resolution of the conflict between safety and returns on investments is possible. Once a particular level of development of the domestic financial market is reached, it is recommendable that restrictions on investments abroad be liberalized, including all other investment restrictions as well. Insistence on safety will, in the short run, slow down expansion of funds. The very nature of the funds' function imposes the need for the supervisor to incite, as much as possible, investments in safer securities, and to limit excessive investment in high risk assets. A credible regulator cannot allow for a mass moral hazard of the aspiration for greater returns to trigger the loss of funds. As there are no corporate, municipal and mortgage bonds on the domestic market, it is possible to claim that the law is more progressive than practice. Despite this being a better option than the opposite, the problem of portfolio optimization will persist until the market structure normalizes. The critical point is the (il)liquidity trend on the discontinuous market. The (non)formation of the critical mass of investors on the demand side will depend on this segment of the market. This especially regards the future strategies of all institutional investors, including pension funds. There are not many such investors in this market segment. In the short run, it is not realistic to expect a significant shift of demand towards this segment because even the much deeper continuous market is more sensitive to small increases and changes in the demand structure. The key risk of this market segment is low investor protection. The market is therefore further reduced. Unless causes of the reduction are removed (primarily the poor protection of investors' ownership rights), a decline in demand will inevitably push prices down. If that happens, this segment of the capital market will function until there are resources for the distribution, i.e. the supply of shares generated by privatization. The market will not execute any of its basic functions. Measures to be taken involve a comprehensive change in market regulation, the strengthening of supervision in financial markets (institutions building), and effective protection of ownership rights.

The problem of the deficit and disadvantageous structure of securities supply may be radicalized over the short term, if demand hikes against the backdrop of the current level and structure of supply. Given the current market circumstances, a surging demand would give rise to the introduction of the second pillar (mandatory pension funds). All present problems of the insured and the regulator would multiply. Market developments would then probably be characterized by price bubbles in its currently active segments.

Table 7-8 **Potential Demand of Mandatory Pension Funds (in EUR)**

	option 1	option 2	option 3	option 4
2009	137,241,589	205,862,384	176,453,472	264,680,208
2010	160,447,763	233,378,564	206,289,981	300,058,154
2011	186,000,616	263,500,873	239,143,649	338,786,836
2012	214,095,260	296,439,590	275,265,334	381,136,616
2013	242,804,592	329,520,518	312,177,332	423,669,237
2014	271,347,349	361,796,465	348,875,163	465,166,884
2015	301,895,094	396,237,311	388,150,835	509,447,971

Source: PMP, USAID/BearingPoint, 2006

NOTE:

option 1 - 7% and age limit of 30 years
option 2 - 7% and age limit of 35 years
option 3 - 9% and age limit of 30 years
option 4 - 9% and age limit of 35 years

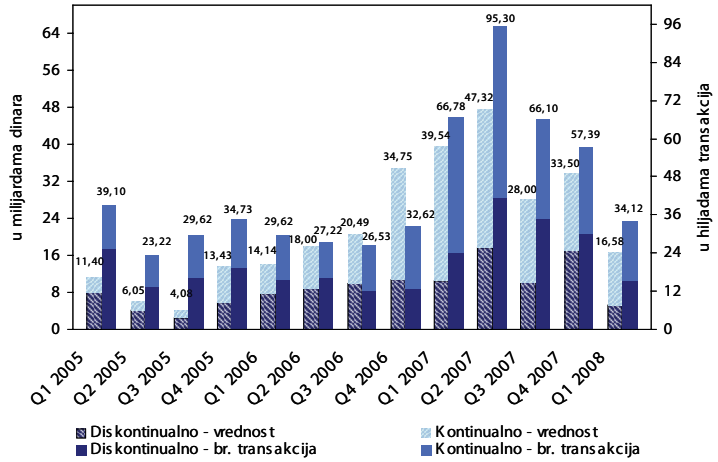
The relative pressure that new demand would exert on the existing segments of the market may be evaluated by comparing additional and current demand. Graph 2 provides a rough estimate of market demand which came to around EUR 100 million in the first quarter of 2008 (the estimate was made by considering the real level of the turnover volume of RSD 16.58 billion in the first quarter). The rapid activation of mandatory funds would multiply the current demand in proportions of 1.3-2.6 times already in the next year. If the supply structure and the risk level are not changed significantly, the expected effect would be the additional concentration of demand on currently liquid shares.

The exit strategy in this situation may be market "repletion" with the following important segments of the register:

public sector bonds, chiefly government and then municipal bonds; corporate bonds, especially bonds of public companies; shares of public companies; activation of the IPO market in the segment of commercial companies.

In view of the funds' portfolio optimization strategy and the absence of regulatory investment limits, the market of fixed-income instruments is of critical importance for the efficiency of pension funds. Opening of public companies may solve the conflict between return and safety that is currently registered in the regulation of the portfolio structure of pension funds. Before these shares become a relevant portion of the portfolio of institutional investors, the risk of expropriation of return of minority owners, as institutional investors are, by definition, minority owners, should be lowered.

Figure 7-7 **Volume and Structure of Stock Trading, 2006–2008**



Source: The Quarterly Monitor, No.12. 2008

The activity of institutional investors is contingent not only on return and market risk, but also on the level of a special risk that they are exposed to as per *definitionem* minority owners. This is the risk of expropriation of return and property, arising in conditions of poor investor protection.

According to the recent analysis, the low level of legal aid is not caused by inadequate legal rules (regulations) in the field of company law. The problem stems rather from: (1) the blatant infringement of these rules and the impossibility of shareholders to enable possible forced application of these regulations, and (2) difficulties of shareholders to vote negatively, i.e. to "punish" the management by selling their shares on the illiquid capital market. The first set of problems is solved by revising corporate legislation and by bolstering efficiency of the institutional suprastructure (regulators and courts). The latter problem stems from the inefficient and inadequate regulation of the takeover market. A radical revision of the valid Law on Takeovers is indispensable.

The underlying risk of the future development of pension funds is not dominantly conditioned by the configuration of the country's financial system. Irrespective of whether it will a bank-based or market-based system, the room for the efficient activity of institutional investors does exist. The risk is and will be the domination of commercial banking in financial intermediation and its (possible) institutional protection, which is not a likely outcome of future evolution. The key risks are located on the market itself. Regulation of the market should streamline its evolution from the (current) mechanism of reallocation of ownership rights generated by the privatization process to the mechanism of financing corporate and public sectors. The main prerequisites for the issuance of government, municipal and corporate bonds can be achieved over the mid-term. Government bonds may appear on the market even with a short 1 to 2 years' horizon. Under the above conditions (the reduction in issuance transaction costs is the most important condition), public companies may create high quality and low risk fixed-income instruments in the short run. The presence of institutional investors generates demand for these instruments and lowers the price of capital acquired in such a way. After public companies, highly rated commercial companies will also be interested in this alternative.

Securities of these companies would be the adequate investment alternative for pension funds, both from the aspect of the level of return and the degree of risk. The capacity of pension funds to manage interest rate risk in the long term generated demand for bonds of relatively low return as well. Activation of this market increases the possibility of establishing the symbiosis between markets and pension funds. The already registered

effect of extending the bond maturity under the influence of pension fund investment activity may be favorable both for the state and the commercial sector.

The main risk of the stock market is, as it has been pointed out, market reduction induced by ownership concentration in Serbia and it will continue, unless a significant change in regulations occurs. This phenomenon will persist until the IPO market develops. The concentration process additionally narrows the investment base and limits the efficiency of institutional investors. This feature of the market is important when estimating the effects of going public – listing of public companies. Shares of these companies will probably be affected by the concentration process, unless the basic market regulation is previously revised.

The assumption of the continuation of stock market reduction is based on the estimate that the low level of investor protection will be maintained in the long-term. Experiences of similar countries support this prognosis. The improved quality of the institutional suprastructure is, besides the reform of legislation on markets and corporations, the main condition for changing the quality and level of investor protection. Poor investor protection and low market liquidity on the one hand, and ownership dispersion on the other hand, are an incompatible combination. Studies have shown that the ownership concentration is much greater in countries with a low level of protection, and that ownership is most often concentrated in the hands of insiders [182] who are in the strategic coalition with management. Feedback exists as well because ownership concentration leads to the underdeveloped and illiquid capital market. If concentrated ownership dominates, financial instruments are in the hands of a small number of investors, which feeds back into reduced liquidity. Such illiquid market maintains the existing ownership concentration. The illiquid market also preserves low protection of shareholders who do not have an exit strategy and cannot influence the management by threatening their exit (the sale of shares). The shallowness and illiquidity of the Serbian stock market has been demonstrated in the previous chapter. It makes alternative voting by selling shares a weak option for the Serbian stockholders.

[182] Please see: Shleifer, A. and Vishny, R., *A Survey of Corporate Governance*, Journal of Finance 52, 1997, 737-783.

7.2.5. Pension Funds and Financial Market Development

Introduction of Pillar II is a particularly attractive idea from the viewpoint of concurrent development of investment pension funds and financial markets, primarily because such development benefits everyone – pension funds and their beneficiaries, financial markets and the national economy as a whole. The concept of mandatory investment pension funds is therefore presented as worthwhile not only for future retirees, but for all other actors of economic life as well.

In countries with undeveloped capital markets, such as Serbia, the above logic is based on the expectation that the inflow of pension fund investments would boost demand and enable fast development of the market, financial innovations, productive investments, etc. It is implicitly assumed that the process takes place within a well-regulated framework, i.e. that the state promotes financial regulation in a timely and most suitable manner. Unfortunately, this assumption does not have to be satisfied, which is often the case and which is evidenced by experiences of several countries, including Serbia. It is widely believed that financial market regulation and investor protection are inadequate in Serbia,[183] which hampers financial market development and incites pension funds to invest in government bonds and keep funds in the form of demand deposits. As a consequence, financial markets do not develop and pension funds do not make high returns.

The idea that the system of investment pension funds fosters capital market development is certainly attractive from the macro perspective because in this way, at least in an optimistic scenario, one measure provides for two desirable processes, i.e. both the pension system and capital market are being developed. However, such a concept is risky for pension funds as they would have to withstand all difficulties related to capital market development, such as: weak regulation, natural volatility of the market at the time of its immaturity, temporary stock exchange crises that are inevitable even in case of developed stock exchanges, etc. Further, the first period of immaturity is particularly risky as it can discredit the idea of funded pension insurance, which happened in Croatia. In other words, the question is whether the mandatory private pension insurance system should be entrusted with the

[183] *Corporate Management: Five Years Later*, CLDS, 2008; *Reforms in Serbia: Achievements and Challenges*, CLDS, 2008

development of financial markets or whether it is more prudent to develop these markets with the aid of financial institutions that seek and operate on risk (commercial investors, investment houses, broker-dealers), and to involve mandatory pension funds thereafter.

Pension insurance is by its nature a long-term activity that involves the lowering of investment risks and ensuring the safety of future pensions of all beneficiaries. It does not represent a customary stock exchange activity with a greedy investor trying to maximize the value of his portfolio in the short run, when it is irrelevant from the social perspective whether he will succeed and another person lose, or vice versa.

Financial crises such as the current one pose a particular problem to mandatory private pension insurance. In periods of crisis, the value of capital accumulated on the account of an individual and the whole fund decreases, which has serious consequences. Over the last one year, the value of Dow Jones on the New York Stock Exchange has halved, whereas in March 2009, Belex – the Belgrade Stock Exchange Index, equaled mere one tenth of its value from spring 2007.

Such a drastic loss of funds' capital invariably affects pension insurance. First, an employee retiring at the time of crisis is bound to have a significantly lower pension than other members – the level of pension is determined upon the value of capital accumulated on the member's account and this capital is lower than it used to be. Such a result potentially jeopardizes the pensioner's existence, and it also seriously endangers the principle of equity because two pensioners that are equal by all criteria receive significantly different pension benefits.

Second, the stock exchange collapse creates problems to pension funds that pay out benefits – these funds' pension-related obligations do not change (they are fixed on the retirement day, including possible indexation), while pension financing sources, i.e. the fund assets, decline during the crisis. This creates a lack of capital relative to obligations, which may jeopardize fund operations in the long run. The main hope in such a situation is that disturbances would not last long, and that recovery and upward trends would soon ensue, leading to the improvement in fund finances. Albeit customary, such a course of events is not inevitable because stock exchange indices may stagnate over the long

term. For example, the Tokyo Stock Exchange Index entered a steep fall by the beginning of the 1990s, only to stagnate until the current crisis when it additionally declined.

Third, the same problems occur even if benefits are paid by an insurance company through annuity policies.[184] The insurance company faces financial difficulties as its available capital decreases while obligations remain unchanged, which creates a deficit that jeopardizes the financial solidity of society.

The risks described make the picture of private pension insurance rather complicated and call for caution in selection of a pension model.

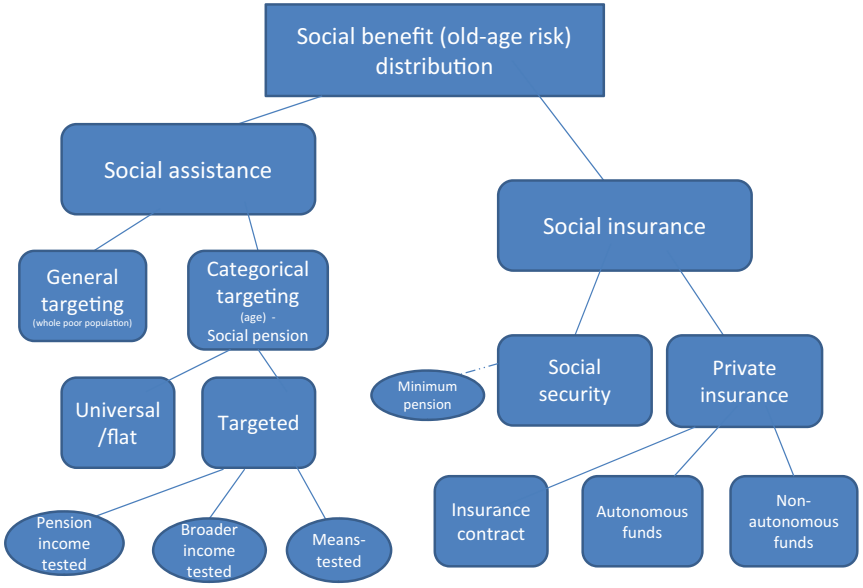
[184] Upon retirement, a member withdraws all his funds from the pension fund and is obliged to buy an insurance company annuity policy that provides him with a particular sum of money until he is alive.

ANNEX 1
Main Definitions and Classification

Annex 1A
Old-Age Risk Social Protection

Social protection schemes consist of social assistance and social insurance. The major difference between them is the way in which they are organized and financed. Social assistance programs are budget-financed (general taxes), while contributory arrangements are referred to as social insurance (GFS 2001, SNA93).

Ilustration 1 Social Benefit Old-Age Risk Distribution



Source: Authors, based on SNA93 and Whitehouse (2007)

Social assistance benefits are transfers made by government units or NPIs (non-profit institutions) to households intended to meet the same kinds of needs as social insurance benefits but are provided outside of an organized social insurance scheme and are not conditional on previous payments of contributions[185].

Social insurance benefits are transfers provided under organized social insurance schemes. Social insurance benefits may be provided under general social security schemes, under private funded social insurance schemes (private autonomous funds) or by unfunded schemes managed by employers for the benefit of their existing or former employees (non-autonomous pension funds)[186].

Therefore, the major difference between social insurance and social assistance is the way in which they are organized and financed, as well as the eligibility to receive social benefits, which is conditional on the payment of contributions when it comes to social insurance. In addition, social assistance is targeted and mostly assigned to the part of population which according to the clearly defined eligibility criteria belong to the category of the poor.[187] However, this does not necessarily have to be the case. There are universal schemes for certain categories such as, the old, the young, the disabled, etc. which are preventive in their nature – the so called *categorical targeting*.

Pensions as a social benefit might have characteristics of both social assistance and social insurance, depending who is providing them and how they are financed – the budget or a social insurance institution (PDI Fund in Serbia).

Budget-funded pensions are social assistance benefits and they are termed *social pensions*. A social pension may be allocated to all elderly, hence not means tested (universal/categorical targeting) or allocated to those in need (categorical with additional, means of income-tested targeting).

Consequently, social pensions are a separate program within social assistance

[185] SNA Glossary.

[186] Ibid

[187] Matković, G. u Matković G., Begoviić B., Popović D., Mijatović B., *From Poverty to Prosperity: Free Market Based Solutions*, CLDS (2007).

which is related only to the elderly (categorical targeting), and represent regular income (one-off payments cannot be considered a pension benefit). If the elderly receive regular income within the general population scheme, from the analytical viewpoint, it can be referred to as a part of the pension system (e.g. Whitehouse 2005, 2007). However, it is not considered a pension and does not constitute pension expenditure.

Annex 1B
Pension System

Pension systems can be broken down into three components: (1) a set of rights and obligations linked to pensions, (2) the financial-property aspect, and (3) the organizational aspect (who manages money).

In Serbia, one (public) fund incorporates all three components, and it is therefore hard to discern a difference among them. However, it easy to imagine different pension arrangements with a more apparent division of components – for instance, an employer who concludes a pension agreement with an employee may be responsible for the insured's pension in the future. Or, a professional company (motivated by profit), and not the fund staff (even if the fund does not have its own staff) may manage the pension fund, i.e. the account with the money belonging to the insured.

The latter part of the document contains classification and definitions of pension system elements prepared by the OECD[188], it is structured around three key terms: pension plans, pension funds and pension companies.

1. Pension Plans

Pension plan: a pension (or retirement income) plan (arrangement or scheme) is a legally binding contract having an explicit retirement objective — to

[188] *Yermo, J., Revised taxonomy for pension plans, pension funds and pension entities, OECD, October 2002.*

ensure a pension for a contributor. This contract may be part of a broader employment contract, it may be set forth in the plan rules or documents, or it may be required by law. Pension plans essentially set forth rights and obligations of parties in question, which always include a contributor and pension fund, and may also include the employer and the state. In addition to having an explicit retirement objective, pension plans may offer additional benefits, such as disability, sickness, and survivors' benefits.

Public vs. Private Pension Plans

Public pension plan: social security and similar schemes where the general government (that is central, state, and local governments, including social security institutions) defines and administers the payment of pension benefits. Their purpose is to provide minimum (flat or/and earnings-related) benefits on retirement for the population at large (or at least the formal sector). Public plans have been traditionally PAYG-financed, but some OECD countries have partial pre-funding of public pension liabilities or have replaced these plans by private pension plans.

Private pension plan: a pension plan where an institution other than general government administers the payment of pension benefits. Private pension plans are managed by the employer acting as the plan sponsor, a pension entity or a private sector provider. Private pension plans may be complements or substitutes to social security systems. Private pension plans are typically funded.

Occupational vs. Personal Pension Plans

Occupational pension plans: access to such plans is linked to an employment relationship between the plan member and the entity that establishes the plan (the plan sponsor). Occupational plans may be established by employers or groups of employers (e.g. industry associations), sometimes in conjunction with labor associations (e.g. a trade union). Generally, the plan sponsor is responsible for making contributions to occupational pension plans, but employees may be also required to contribute. Sponsors may also have administrative or oversight responsibilities for these plans.

Mandatory occupational plans: participation in these plans is mandatory for employers. By nation-wide or industry-wide bargaining agreements, employers are obliged to participate in a pension plan. Employers must set up (and make contributions to) occupational pension plans which employees will normally be required to join. Where employers are obliged to offer an occupational pension plan (e.g industry-wide collective agreements with trade unions), but the employees' membership is on a voluntary basis, these plans are also considered mandatory.

Voluntary occupational plans: the establishment of these plans is voluntary for employers (including those in which there is automatic enrolment as part of an employment contract or where the law requires employees to join plans set up on a voluntary basis by their employers). In some countries, employers can on a voluntary basis establish occupational plans that provide benefits that replace at least partly those of the social security system. These plans are classified as voluntary, even though employers must continue sponsoring these plans in order to be exempted (at least partly) from social security contributions.

Personal plans: access to these plans is not linked to an employment relationship. That is, individuals independently purchase and select material aspects of the arrangements without intervention of their employers. The employer may nonetheless make contributions to personal pension plans. Some personal plans may have restricted membership (e.g. to the self-employed, to members of a particular craft or trade association, to individuals who do not already belong to an occupational plan, etc).

Mandatory personal plans: these are personal plans that individuals must join or which are eligible to receive mandatory pension contributions. Individuals may be required to make pension contributions to a pension plan of their choice -normally within a certain range of choices- or to a specific pension plan.

Voluntary personal plans: participation in these plans is voluntary for individuals. By law individuals are not obliged to participate in a pension plan. They are not required to make pension contributions to a pension plan. In some countries personal plans become mandatory when they provide benefits that replace those of the social security system (e.g. United Kingdom).

Defined Benefit vs Defined Contribution Plans

Defined contribution (DC) plan: a pension plan by which benefits to members are based solely on the amount contributed to the plan by the sponsor or member plus the investment return thereon. This does not include plans in which the employer that sponsors the plan guarantees a rate of return. A vast majority of personal plans are defined contribution plans.

Defined benefit (DB) plan: any pension plan other than a defined contribution plan, including all plans in which the financial or longevity risk are borne by the plan sponsor. Benefits to members are typically based on a formula linked to members' wages or salaries and length of employment.

Funded vs Unfunded Pension Plans

Funded pension plans: pension plans that have accumulated dedicated assets (may be identified reserves in the plan sponsor's balance sheet or/and segregated assets) to pay for the pension benefits. The main principle is that the fund always contains sufficient assets to cover all future pension liabilities. The way in which funding levels are measured varies from country to country.

Unfunded pension plans: are those that are financed directly from contributions from the plan sponsor or provider and/or the plan participant. Unfunded pension plans are said to be paid on a current disbursement method (also known as the pay-as-you-go, PAYG, method). Unfunded plans may still have associated reserves used to cover immediate expenses. These plans are almost solely organized and managed by the state.

2. Pension Funds

Pension funds: the pool of assets, including employer's assets in the case of some occupational plans, that are bought with the contributions to a pension plan or that are assigned by law or contract as pension plan assets.

Autonomous Pension Funds, Non-Autonomous Pension Funds and Insured Pensions

Autonomous pension fund: in occupational plans, a pension fund that is legally separated from the plan sponsor taking the form of either a special purpose legal entity (a pension entity) or a separate account managed by financial institutions on behalf of the plan/fund members. Pension funds that support personal pension plans are by definition autonomous. Both in occupational and personal pension plans, the plan/fund members have a legal or beneficial right or some other contractual claim against the assets held in the autonomous pension fund.

Non-autonomous pension funds: in occupational plans, a pension fund that is not legally separated from the plan sponsor. The pension assets may form a reserve in the plan sponsor's balance sheet ("book reserves") or they may be held in legally separated vehicles but are the property of the plan sponsor ("financial reserves").

Insured pensions: in occupational and personal plans, a pension that consists exclusively of insurance products (annuities, life insurance etc.).

Collective and Group Pension Funds vs Individual Pension Funds

Collective pension funds: funds that pool the assets of pension plans of different plan sponsors. There are two types of collective pension funds: a) for related employers i.e. companies who are financially connected with the pension fund; b) for unrelated employers who are involved in the same trade or business.

Group pension funds: a pension fund that comprises the assets of unconnected individuals and/or companies in the same pension plan.

Related member funds: a pension fund that comprises the assets of a limited number of related members who are all in the governing body of the pension fund.

Individual pension funds: a pension fund that comprises the assets of a

single member and his/her beneficiaries, usually in the form of an individual account.

Open vs Closed Pension Funds

Open pension funds: funds that support at least one plan with no restriction on membership (collective membership may be possible).

Closed pension funds: funds that support only pension plans that are limited to certain employees (e.g. those of an employer or group of employers).

3. Pension Companies (Entities)

Pension company (entity): a special-purpose legal entity, such as a trust, foundation, or a corporate entity that owns and may also control the pension fund on behalf of the pension plan/fund members. Plan members may have either a legal or a beneficial ownership right over the pension fund, or a contractual claim against the special purpose entity with respect to their rights to the pension fund assets.

Public vs Private Pension Entity

Public pension entity: a pension entity that is regulated under public sector law. The state regulates, organizes, collects funds and pays pensions. Their general advantage is that the state possesses monopoly on taxing, and by contrast to a private fund, such pension fund cannot go bankrupt.

Private pension entity: a pension entity that is regulated under private sector law. Private pension organize, collect and invest funds, and pay pensions, widely regulated and supervised by the state, with the aim to reduce risks for the insured and retirees. State regulation and supervision, as well as the accumulated, conservatively invested capital represent the main protection of private funds from bankruptcy.

ANNEX 2
»Pillar« and »Tier« Terminology

Any combination of the mentioned pension scheme elements is possible (in section 3.1.), offering a whole **spectrum of combinations**, i.e. possibilities for pension system design.

Out of numerous alternative combinations, we single out the following types of pension insurance:

– public fund, PAYG - financed, defined benefit;
– public fund, PAYG, coupled with public capital fund (reserve fund);
– private fund, funded, occupational, defined benefit;
– private fund, funded, defined contribution (the so called individual accounts);
– PAYG, defined contribution (NDC).

Bearing in mind the diversity of pension systems world-wide, there have been many attempts at creating a simple and comprehensive pension systems classification that encompasses the main defining aspects of these plans[189]. These classifications commonly rely on the so called pillar terminology, which enables the classification of a range of heterogeneous pension systems. However, a certain confusion has been created by the fact that there is no unified terminology.

Three-pillar terminology is universally endorsed, but the meanings may differ, depending on the institution using it, whether it is the World Bank, European Union, OECD or ILO[190].

[189] Private pensions: OECD Classification and Glossary, OECD 2005

[190] Some publications, e.g. *OECD Revised taxonomy for pension plans, pension funds and pension entities (2001 and 2002)* and *Private Pensions: OECD Classification and Glossary (2005),* have tried to clarrify these issues.

The most commonly used in Serbia is **the World Bank terminology.** The World Bank's pension model is usually interpreted as consisting of the following three pillars:

First pillar: a relatively small, publicly managed, pay-as-you-go, defined benefit pillar;
Second pillar: a mandatory, funded, defined-contribution (individual account), privately managed pillar;

Third pillar: voluntary, privately managed pillar.

Although in the last few years the World Bank has started switching to five-pillar terminology, the three-pillar classification is still prevalent, at least in our region.

The ILO suggests **"tier", instead of "pillar" terminology,** pointing out that »pillar terminology suggests stability and safety, and in case that one of the pillars is missing, one gets the impression that the system lacks stability«[191].
First tier – A minimum anti-poverty pension, universally available but means tested, possibly financed directly from general revenues and indexed;
Second tier – A mandatory public PAYG social insurance pension providing an adequate replacement rate. Benefits are fully indexed against inflation, and usually subject to a ceiling;
Third tier – A fully funded defined contribution scheme, perhaps privately managed, which would supplement the public scheme. This includes occupational as well as individual schemes.

OECD terminology[192]

***First pillar*:** publicly managed pension schemes with defined benefits and pay-as-you-go finance, usually based on a payroll tax.

[191] Ervik, R. (2003), *Global Normative Standards and National Solutions for Pension Provision: The World Bank*, ILO, Norway and South Africa in Comparative Perspective, BERGEN UNIVERSITY RESEARCH FOUNDATION – Working paper no. 8.

[192] "„Revised taxonomy for pension plans, pension funds and pension entities", OECD (2002), as in Maintaining Prosperity in an Ageing Society.

Second pillar: privately managed pension schemes which are provided as part of an employment contract.
Third pillar: personal pension plans in the form of saving and annuity schemes.

The European Commission (EC) has endorsed a similar **terminology** to the one used by the OECD:[193]

First pillar: Basic public and mandatory program in the pension system. It is usually financed on a PAYG basis;
Second pillar: Occupational schemes - private funded schemes related to employment and to a professional occupation. Each program covers a group of workers, either at the company and/or sectoral level;
Third pillar: Individual savings and insurance for old-age, based on an individual contract between a person and private institutions (e.g. life insurance companies, banks, etc).

However, the recent evolution of pension systems in Europe has further complicated the existing classification. In order to account for new trends, the European Commission introduced the term *tier*, but with a different meaning than in ILO classification. ILO uses the term "tier" as a substitute for "pillar", while the EC accepted it as a term depicting more adequately the internal structure of the first pillar. Hence, the first pillar may contain the following tiers[194]:

Zero tier: means-tested social assistance for the elderly in need (social pension);
First tier: traditional PAYG programs within the first pillar;
Second tier – funded mandatory schemes, financed through contributions. They may include collective or individual programs.

While the first (and eventually the second tier) are aimed at providing pensioners with a living standard similar to that before retirement, the zero tier is linked to the objective of preventing poverty among the elderly.

[193] Natali, D., Basic Glossary for the Analysis of Pension System, Observatoire social europeen, 2004.

[194] Natali, D., Basic Glossary for the Analysis of Pension System, Observatoire social europeen, 2004; Social Protection Committee (2004a): Current and Prospective Pension Replacement Rates. Report on Work in Progress, Indicator Sub-Group, Brussels, 23 February 2004.

This classification somewhat differs from the OECD terminology used in Whitehouse's publications[195]. Such framework consists of only two mandatory (statutory) tiers:

First tier – redistributive part, designed to ensure that pensioners achieve some absolute, minimum standard of living;
Second tier – pension insurance. Insurance component is designed to achieve some target standard of living in retirement compared with that when working (relative standard of living).

Therefore, the EC's zero tier corresponds to the Whitehouse's first tier; on the other hand, unlike the EC, Whitehouse makes no distinction between first and second tier, classifying all types of mandatory pension insurance under the second tier[196]. One gets the impression that Whitehouse, similar to ILO, abandoned the pillar terminology, since he refers to voluntary pensions, either individual or occupational, as the third tier, rather than pillar.

As we can see, the usage of the same terms (*pillars and tiers*) with different meanings can create a huge confusion. For example, the subject of this study (mandatory individual accounts) is referred to as the second pillar according to the World Bank model, while the EU (European Commission) classifies it as the second tier under the first pillar. The OECD/Whitehouse studies also subsume it under the second tier within the first pillar, but together with PAYG schemes.

[195] OECD (2005) and (2007), *Pensions at a Glance: Public Policies across OECD Countries;* WHITEHOUSE, E. (2007), *Pension Panorama*, World Bank.

[196] Classification of defined contribution schemes under the term »pension insurance« is actually imprecise, since they are not organized in the form of insurance, at least in the current stage, but rather as individual accounts where the risk is borne by beneficiary. However, in our opinion, that may be accepted in a general context, while methodological discussions on that issue are still going on.

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