The Latin American model of social security reform with individual accounts has been adopted by a number of Central and Eastern European countries. That alternative to a pay-as-you-go system is sometimes advocated as a desirable model for solving problems in developed systems such as that of the United States. This article describes the Central and Eastern European systems and compares them with the Latin American systems.

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Social Security Reform in Central and Eastern Europe: Variations on a Latin American Theme

*by Barbara E. Kritzer**

Summary

After Chile reformed its social security system in 1981, several other Latin American countries and certain Central and Eastern European (CEE) countries implemented the Chilean model, with some variations: either a single- or multi-tier system, or with a period of transition to take care of those in the labor force at the time of the change. The single-tier version consists of individual accounts in pension fund management companies. Multi-tier systems retain some form of public program and add mandatory individual accounts.

Most of the CEE countries did not want to incur the high transition costs associated with the Chilean model. The switch to a market economy had already strained their economies. Also, the countries' desire to adopt the European Union's Euro as their currency—a move that required a specific debt ceiling—limited the amount of additional debt they could incur.

This article describes the CEE reforms and makes some comparisons with the Latin American experience. Most of the CEE countries have chosen a mixed system and have restructured the pay-as-you-go (PAYGO) tier, while the Latin American countries have both single- and multi-tier systems. Some CEE countries have set up notional defined contribution (NDC) schemes for the PAYGO tier in which each insured person has a hypothetical account made up of all contributions during his or her working life. Survivors and disability programs in CEE have remained in the public tier, but in most of the Latin American programs the insured must purchase a separate insurance policy.

Issues common to both regions include:

- Administrative costs are high and competition is keen, which has led to consolidation and mergers among the companies and a large market share controlled by a few companies.
- Benefits are proportionately lower for women than for men.
- A large, informal sector is not covered by social security. This sector is apparently much larger in Latin America than in the CEE countries.

Issues that are unique to some of the CEE countries include:

- Individual accounts in Hungary and Poland have proved more attractive than originally anticipated. As a result, contributions to the public

PAYGO system in Hungary and Poland fell short of expectations.

- In several countries, laws setting up the programs were enacted without all the details of providing benefits. For example, in some countries laws must now be drawn up for establishment of annuities because they do not yet exist.

- Setting up a coherent pension policy has been difficult in some countries because of frequent and significant changes in government. This situation has affected the progress of reform in various stages of development.

In general, a definitive assessment of individual accounts in these countries will not be possible until a cohort of retirees has spent most of its career under the new system.

Introduction

Beginning in 1981, Latin America led the world in introducing individual retirement savings accounts intended to complement or replace state-sponsored pay-as-you-go (PAYGO) social security pensions. Many Central and Eastern European (CEE) countries looked to Latin America for models because their own PAYGO retirement schemes were underfunded, despite efforts to modify them. In the late 1990s, some CEE countries began implementing various forms of individual accounts. This article concentrates on the CEE experience with such reforms and provides some comparisons with the Latin American model.[1]

Conditions in both regions prior to reform were quite similar. Public PAYGO programs were the main source of retirement income, and most countries did not have any form of supplementary private pensions (Müller 2001c). Problems included evasion of contributions, inequitable benefits based on occupation and political clout, and high inflation coupled with promises of higher benefits than could be sustained.

Coverage and demographics in the two regions were different, however. In Latin America, social security coverage of the population was low; in Communist Central and Eastern Europe, coverage was nearly universal, although the advent of economic reform saw a dramatic erosion of that coverage. Latin America has much younger populations than the United States or Western Europe; many CEE countries have older populations than Latin America, but the CEE populations have a shorter life expectancy, especially for men (see Table 1).

The problems of the social security systems in CEE countries date back to the switch from planned to market economies. Under the Communist regimes, the state financed the system, as an employer and through general revenues. Social security did not have a separate budget. Participation rates were high because the majority of workers were in either state-owned industries or collective farms. Benefits were based on years of service and not the amount of contributions paid. Since these enterprises paid contributions according to their total wage bill, there could be no individual record of contribution history (Palacios and Pallarès-Miralles 2000; Voirin 1994).

With the switch to a market economy, different types of business ventures emerged. Large state-owned enterprises and collective farms were privatized. Many became large private enterprises, while others were

Table 1.
Population statistics for selected countries in Central and Eastern Europe and Latin America and for the United States

Country	Percentage of total population aged 60 or older		Percentage of population aged 60 or older who are 80 or older		Life expectancy at age 60 (years)	
	2002	2050	2002	2050	Men	Women
United States	16	27	21	28	19	24
Central and Eastern Europe						
Bulgaria	22	39	11	19	15	19
Croatia	21	31	12	25	17	21
Estonia	20	36	13	20	15	21
Hungary	20	36	13	21	16	20
Kazakhstan[a]	11	25	9	17	14	19
Latvia	21	37	13	22	15	21
Poland	17	36	13	21	17	21
Latin America						
Argentina	13	23	14	19	18	22
Bolivia	6	16	8	14	16	18
Chile	11	24	13	23	19	22
Colombia	7	21	13	20	19	21
El Salvador	7	21	11	16	18	21
Mexico	7	24	12	19	21	22
Peru	7	22	10	17	18	20
Uruguay	17	25	16	23	18	23

SOURCE: United Nations (2002).

a. Although Kazakhstan is technically not a Central and Eastern European country, it is grouped together with other countries that were part of the Soviet Union.

broken into smaller private firms. Many more individuals became self-employed.

The method of financing social security changed. A separate budget was created for social security, although the state continued to pay for any deficits. At first, employers paid most of the contributions, though in many countries a very small employee contribution was added. Many employers neglected to contribute to the system on behalf of their employees because of their growing financial difficulties. The informal sector grew, and consequently the noncompliance rate increased.

As time went by, problems with the size of benefits and funding of social security persisted. The government made ad hoc benefit increases. Privileged pensions provided overly generous benefits.[2] Employment fell, and the government relaxed qualifications for early retirement and disability and used them as welfare and unemployment programs for the unemployed. This practice further stressed the funds. With fewer contributors to the system, the ratio of pensioners to workers rose sharply. High inflation caused the real value of benefits to deteriorate, creating a large gap between the increasingly less valuable benefits of older retirees and those of younger retirees (Fultz and Ruck 2000; Cichon 1994; Mouton 1998).

Many CEE countries instituted a number of measures to try to maintain the solvency of their programs. Most raised the retirement age, increased contribution rates, changed the benefit formulas for retirement, tightened qualifying conditions for disability, and cut back on the number and types of privileged pensions (Müller 2000). Some created supplementary private pension schemes, and others implemented or are discussing some form of individual accounts.

Many Latin American countries, prior to adopting some form of individual accounts, also tried reforms such as raising the retirement age, raising contributions, or changing the benefit formula (Mesa-Lago 2001). However, those countries did not relax the eligibility requirements for disability benefits, as the CEE countries had done. While most CEE countries kept some form of public PAYGO system and set up supplementary schemes with individual accounts, most of the Latin American countries did not set up supplementary schemes.

Among the Latin American countries there were two models for reform:

1. In the Chilean model, in which workers are required to contribute to individual retirement savings accounts, the old public PAYGO systems are either closed to new entrants or closed completely, and transition provisions provide compensation for accrued benefits under the old system.
2. Mixed systems, in which individual accounts coexist with some form of public program (a mandatory first-tier state-provided benefit and the choice of a public or private benefit for the second tier) or in which workers can switch from a public scheme to a private-sector one.

In either type of system, the employee (and sometimes the employer) contributes to an individual account in a private company that manages pension funds. Those companies invest the funds in very specific financial instruments; the resulting benefit is based on the contributions plus accrued earnings minus administrative fees. Generally, the retirement benefit is some type of annuity.

The majority of CEE countries that have adopted individual accounts have opted for the mixed system, for a number of reasons:

- The high transition costs associated with the Chilean model would further strain their economies, which were already stretched because of the switch to a market economy. Many of these countries want to adopt the European Union's Euro as their currency. Requirements for doing so include total explicit debt not to exceed 60 percent of the country's gross domestic product (GDP). Since their debt was already close to that limit, adding more debt would disqualify CEE countries from membership in the Eurozone (Müller 2001a; Lindeman, Rutkowski, and Sluchynskyy 2000).

- The generation of workers at or near retirement, who had grown up under communism, expected the state to take care of them in their retirement. This problem was exacerbated by the fact that any system of individual accounts would take time to develop and to pay adequate benefits, especially since capital markets needed to be developed (Polackova 1999).[3]

- The mixed system allows the public system to provide transitional benefits to workers who accrued rights under the Communist system. Such benefits are less costly to the government than Chile's recognition bond (Müller 2001b).[4]

The degree and type of change in the public PAYGO tier varies. Some countries have raised the retirement age over a period of years, modified the benefit formula, and changed the contribution rates. Others have set up a notional defined contribution (NDC) scheme, in which a hypothetical account is created for each insured person consisting of all contributions made during his or her working life; a pension is calculated by dividing that amount by the average life expectancy at the time of retirement and indexing it to various economic factors. No Latin American country has an NDC scheme. The

big difference lies in the type of system chosen. In Latin America, a significant number of countries have chosen variations on the Chilean model that effectively close down or phase out the PAYGO tier. In the countries that have chosen the mixed model in both CEE and Latin America, the PAYGO tier has been restructured.

Most CEE countries that have chosen the mixed system have kept survivors and disability insurance in the public PAYGO tier. This decision was made because when the initial laws were created and implemented, the private insurance markets were underdeveloped and deemed not ready to be responsible for these benefits. As a result, the public tier provides survivors and disability benefits, and survivors and the disabled are in most cases entitled to the funds in the insured's individual account (Lindeman, Rutkowski, and Sluchynskyy 2000).[5] In contrast, most Latin American countries require the insured to purchase a separate policy for survivors and disability insurance.

Individual accounts are spreading throughout the CEE countries, as they did in Latin America (see Table 2). Hungary switched in 1998, and Poland followed in 1999. The systems in Bulgaria, Estonia, and Latvia are being phased in over several years. Croatia's program began in 2002. Kazakhstan (technically not a CEE country) is the only country that went from a state-managed economy to a market economy and chose the Chilean model. Countries with mixed systems have three tiers, and countries with the Chilean model have two. The voluntary portion of the programs in the CEE countries is made up of separate individual accounts, while in Latin America some programs allow additional voluntary payments to the mandatory individual account. Other CEE countries considering similar programs are Lithuania, Romania, Russia, Slovakia, Slovenia, and Ukraine.

Characteristics of individual accounts are shown in Table 3. Some features of the programs that are not yet in place are included, such as an older retirement age that is being phased in gradually. Like Chile and most of the other Latin American countries with individual accounts, most of the CEE systems provide a guaranteed minimum pension at retirement for insured persons whose contributions do not yield a minimum benefit level.[6] Most of the Latin American countries offer three types of benefits at retirement: annuity, programmed withdrawals scheduled to guarantee income over the insured's expected life span, or programmed withdrawals with a deferred annuity (a combination of the other two choices). In most CEE countries, an annuity is the only option.

A recent International Labour Office (ILO) study (Fultz and Ruck 2000) describes a number of issues related to the CEE reforms:

- In both Hungary and Poland, the number of workers moving to private accounts exceeded the original projections. Although this outcome shows the appeal of individual accounts, it has also reduced contributions to the public-sector programs.
- In 1999, administrative expenses for the private pension funds in Hungary and Poland exceeded income. This has led to consolidation and mergers among the companies and a larger market share controlled by just a few companies.
- In many of the countries, laws are enacted before all of the details on benefits have been worked out; in some countries, for example, annuities do not exist yet.
- Pension funds are investing mainly in government instruments. Since the private financial markets are small, volatile, and risky, according to the authors, investing in government paper is prudent. However, lower earnings from investments in government instruments, often coupled with high administrative fees, will lead to lower benefits.
- Pension reform thus far has been limited to provisions for old age. The disability programs have not seen major changes. Disabled persons who have some ability to work are given limited incentives and opportunities to find employment.
- Women are significantly affected by the increase in retirement age and the new benefit formulas that attach more weight to earnings early in one's career. The growing informal sector is effectively excluded from coverage because it is in the traditional public sector.
- Elections, with subsequent significant changes in governments in several of these countries, have stalled progress in pension reform, making it difficult to set up a coherent pension policy. In some countries, the frequent change in governments has prevented or significantly delayed laws from being passed and enacted; in others, the course of reform has been radically changed.

Some of these issues are unique to the CEE countries, while others are shared by the Latin American countries. In both regions, high administrative costs and keen competition are prevalent; women do not fare as well as men; the informal sector is quite large and is not covered by social security (apparently a worse problem in Latin America than in CEE); and investments are largely in government instruments. In Latin America, noncompliance includes underreporting of income as well as

Table 2.
Individual accounts in selected countries in Central and Eastern Europe and Latin America

Country	First tier	Second tier	Third tier
		Central and Eastern Europe	
Bulgaria	Reformed PAYGO	Mandatory private individual account	Voluntary supplementary account
Croatia	Reformed PAYGO	Mandatory private individual account	Voluntary supplementary account
Estonia	Reformed PAYGO	Mandatory private individual account	Voluntary supplementary account
Hungary	Reformed PAYGO	Mandatory private individual account	Voluntary supplementary account
Kazakhstan[a]	Mandatory private individual account	Voluntary supplementary account	None
Latvia	Reformed PAYGO	Mandatory private individual account	Voluntary supplementary account
Poland	Reformed PAYGO	Mandatory private individual account	Voluntary supplementary account
		Latin America	
Argentina	Reformed PAYGO	Choice of individual private account or reformed PAYGO	Additional voluntary payment
Bolivia	Mandatory private individual account	. . .	None
Chile	Mandatory private individual account	Voluntary supplementary account	None
Colombia	Choice of PAYGO or private individual account	Additional voluntary payment	None
El Salvador	Mandatory private individual account	. . .	None
Mexico	Mandatory private individual account	Voluntary supplementary account	None
Peru	Choice of PAYGO or individual account	Additional voluntary payment	None
Uruguay	Reformed PAYGO	Mandatory private individual account [b]	Additional voluntary payment

SOURCES: Kritzer (2002); Social Security Administration (2002).

NOTES: PAYGO = pay-as-you-go; . . . = not available.

a. Although Kazakhstan is technically not a Central and Eastern European country, it is grouped together with other countries that were part of the Soviet Union.

b. Mandatory for incomes above US$800.

employers' deducting employees' contributions but neglecting to put the monies into the individual accounts.

The rest of this article focuses on profiles of Hungary and Poland, the countries with the oldest programs and those for which the most information is available. Social security programs in other countries where information is readily available are described briefly. Since programs in all of these CEE countries are only a few years old, there has not been enough time for much analysis of their functioning and performance.

Hungary

Hungary was the first country in the region to switch to individual accounts. Voluntary private pensions were set up in 1994 as a kind of mutual benefit fund. Members were mainly over age 35, middle- to high-income employees in large companies. By 1999, total assets were about 1.5 percent of GDP, and average contributions were about 5 percent of earnings. The number of funds decreased from 270 in 1994 to 160 in 1999 because of mergers and liquidations (Rocha and Vittas 2001).

Table 3.
Characteristics of individual accounts in Central and Eastern Europe and Latin America

Country	Year started	Retirement age		Contribution rate (percentage of earnings)		Guaranteed minimum pension	Retirement benefit [a]		
		Men	Women	Employee	Employer		Annuity	Programmed withdrawals	Deferred annuity [b]
					Central and Eastern Europe				
Bulgaria	2000	65	60	0.5	1.5	Yes	Yes	No	No
Croatia	2001	65	65	5	None	Yes	Yes	No	No
Estonia	2002	65	60	2	4	Yes	Yes	Yes	No
Hungary	1998	62	62	6	None	Yes	Yes	No	No
Kazakhstan[c]	1998	63	58	10	None	Yes	Yes	No	No
Latvia	2001	60	60	2	None	. . .	Yes	No	No
Poland	1999	62	62	9	None	Yes	Yes	No	No
					Latin America				
Argentina	1994	65	60	11 [d]	None	Yes	Yes	Yes	Yes
Bolivia	1997	65	65	10	None	No	Yes	No	No
Chile	1981	65	60	10	None	Yes	Yes	Yes	Yes
Colombia	1993	62	60	3.375	10	Yes	Yes	Yes	Yes
El Salvador	1998	60	55	3.25	7.5	Yes	Yes	Yes	Yes
Mexico	1997	65	60	1.125	5.5	Yes	Yes	Yes	Yes
Peru	1993	65	65	8	None	No	Yes	Yes	Yes
Uruguay	1996	60	60	15 [e]	None	No	Yes	No	No

SOURCES: Kritzer 2002; SSA 2002.

NOTE: . . . = not available.

a. Where more than one option is available, the individual has a choice.

b. Programmed withdrawals with deferred annuity.

c. Although Kazakhstan is technically not a CEE country, it is grouped together with other countries that were part of the Soviet Union.

d. Until November 2001, the employee's contribution was 11 percent of earnings (including administrative fees); due to severe economic conditions, the rate was lowered temporarily to 5 percent.

e. For incomes above US$800. Workers earning less than $800 contribute 7.5 percent of half of their earnings to an individual account and 7.5 percent of the other half to the public program.

A mixed system was implemented in 1998, wherein the public tier (PAYGO) was reformed, and mandatory individual accounts were established as a second tier (mandatory private pension fund, or MPPF). The changes to the first tier included a gradual increase in the retirement age to 62 for both men and women by 2009; a new benefit formula that reduces some of the redistribution, to be gradually introduced by 2013; a change in the method of indexing benefits from wages to wages and prices; and replacement of minimum and partial pensions with means-tested benefits (Simonovits 1999; Rocha and Vittas 2002). The supplementary pensions became a voluntary third tier.

Originally, participation in the MPPF was mandatory for workers entering the labor force as of June 30, 1998, and voluntary for all other workers. Those who remained in the old system stayed in the reformed PAYGO only. For the transition, workers who switched to the new system and had contributions under the old system, and who would retire after 2012, would receive an annuity and a proportionately reduced public pension. Workers had to choose a system before the end of August 1999. If they opted for the MPPF, they could switch back to PAYGO until the end of December 2000 (Ferge 1999; IBIS, November 1997 and September 1999).

Workers contribute either 6 percent of earnings to their individual accounts and 1 percent to the public tier or 9 percent to the public scheme only; in either case, the ceiling for contributions is based on two times average earnings. Employers do not contribute to the individual accounts and must pay 21 percent of payroll to the public tier for each employee, regardless of which plan the worker has chosen.

The second tier has the same retirement age as the first. The benefit from the mandatory individual account may be in the form of various types of annuity: a life annuity, an annuity for a period certain, or an annuity with a payment to survivors. A lump sum is payable to those with fewer than 180 months of contributions (IBIS, November 1997; Augusztinovics and others 2002).

The third tier is totally separate, although the retirement age is the same as for the other two tiers. The amount of the contribution for the supplementary pensions is determined by each pension fund, and either the employer or the insured may finance the account. A company may provide both mandatory and voluntary individual accounts; the individual has a separate account for each type. Additional details were not available at the time of writing.

For the second-tier benefits, a pension fund provides the annuity, either from its own resources or from an insurance company. According to law, the same mortality rates are used to calculate life expectancy for both men and women.[7] The annuity must be indexed in the same way as the public system, adjusting benefits according to the average of the net wage index and the consumer price index (Parniczky 2000).

A recent ILO report (Augusztinovics and others 2002) explains the practical problems of implementing the annuity regulations. Insurance companies are reluctant to use the gender-neutral mortality tables, and there are no laws that require them to offer annuities with such features. In addition, Hungary has no annuities that comply with the indexation requirement. Since apparently none of the major MPPF's have indicated that they plan to offer annuities, the insurance companies are not ready, and perhaps not willing, to sell the kind of annuities specified in the law.

Survivors and disability benefits are also available under the second tier. If a member dies before retirement, a lump sum based on the balance in his or her account is payable to whatever beneficiary the member has designated. This differs from the first-tier benefit, under which only certain individuals may be eligible for a survivor's benefit. An MPPF member who becomes disabled prior to retirement may chose between (1) receiving a combined benefit of an annuity based on the individual account and a portion of a first-tier disability benefit or (2) returning the proceeds of an individual account to the public tier and receiving a full first-tier disability benefit (Augusztinovics and others 2002).

Individual accounts are managed by a pension fund that the employee chooses. Workers who do not choose a fund are automatically placed in one located near where they live. After 6 months in one fund, a worker may switch to another; the old fund has the right to charge up to 0.2 percent of the total amount being transferred (Parniczky 2000).[8] Peru is the only Latin American country that allows pension funds to charge an exit fee.

Administrative fees include an average of 4 percent to 5 percent of the insured's contribution for operational costs and about 1 percent for the company's various contingency reserves.[9] An asset management fee is deducted from the fund's gross returns on the investment (Augusztinovics and others 2002).[10] Rocha and Vittas (2001) contrast operating costs in Hungary with their Latin American counterparts. The sponsors of the Hungarian funds may pay for a large percentage of operating costs and do not pass these expenses on to the insured. For example, employer-sponsored funds often provide rent-free space and free use of administrative staff. On the other hand, Hungarians spend much less on marketing and sales commissions than the Latin Americans.

Unlike Latin American pension funds, which are managed by companies, Hungarian pension funds are set up as nonprofit associations owned by fund members and

controlled by a board of directors. Outside firms can collect contributions, administer and invest the funds, and pay annuities. The second-tier pension funds were modeled after the voluntary funds set up in 1994 except that the mandatory accounts have more regulations. Each pension fund that intends to provide annuities must have at least 2,000 members or a combination of 25,000 members and a capital reserve of US$50,000. Other voluntary funds, employers, banks, insurance companies, and trade union or other employee organizations can set up these funds. Professional fund managers must be used, and each fund must prove that it can pay start-up costs (Rocha and Vittas 2001; Parniczky 2000).

Investments are limited to no more than 30 percent of total assets in equities; initially, none of those investments could be in international equities, but that figure can rise to 30 percent by 2003 (Rocha and Vittas 2001). In 2000, about 78 percent of investments were in government paper, 14 percent in stocks, 3 percent in bonds, and 5 percent in cash and banknotes; foreign investment represented less than 0.5 percent (Simonovits 2000; Hungarian Financial Supervisory Authority 2001a). As of January 2000, funds were allowed to invest in Organization for Economic Cooperation and Development (OECD) equities, starting at 10 percent of assets and rising to 20 percent in 2002 and to 30 percent in 2003 (*Pensions International*, April 2002). This differs from Chile and other Latin American countries, which permitted no foreign investment and only low-risk domestic instruments at the start of their programs; as their systems matured, those limits were raised. Hungary's investment rules may also be liberalized over time.

Like the law in Latin American countries, the original Hungarian law provides a minimum guaranteed benefit for the second tier, and funds must yield a minimum return. However, both types of guarantees in Hungary are very different from the Latin American ones. In most of the Latin American countries, the government funds the minimum pension guarantee, whereas in Hungary, all pension funds must pay a percentage of member contributions to a central guarantee fund (these monies are invested only in government bonds); the benefit provided to members with 15 years of contributions cannot be lower than 25 percent of the first-tier pension benefit. If a member switches from one MPPF to another and the original MPPF does not have the funds, the guarantee fund will transfer the amount from its own monies to the new MPPF on behalf of the member (Müller 2002; Augusztinovics and others 2002).

Most of the Latin American pension fund management companies must maintain both a minimum and a maximum rate of return calculated to reflect the average performance of all of the companies over a specified period of time. Hungarian funds are pegged to the yield of long-term government bonds. In both regions, if a fund falls below the yield, it must make up the difference from its reserves; fund profits that are more than a certain percentage above the benchmark are placed in fund reserves (Rocha and Vittas 2001; Kay and Kritzer 2001). In addition, the Hungarian Guarantee Fund can lend money to funds that have used up their reserves (Augusztinovics and others 2002).

Hungary's Private Fund Supervisory Board, originally set up in 1993 to oversee the voluntary funds, supervised the mandatory tier at the inception of the program. Its functions included licensing, regulating, and supervising the funds, as well as providing central recordkeeping. The board was an independent agency reporting to the Ministry of Finance and was financed by both general revenues and a fee imposed on all pension funds equal to 0.2 percent of contributions (Golinowska and Kurowski 2000). In April 2000, the newly established Hungarian Financial Supervisory Authority took over as the sole regulatory agency for financial services in Hungary. The president of the agency is nominated by the prime minister and appointed by the parliament (Hungarian Financial Supervisory Authority 2001b).[11] The supervisory authority is funded in part by general revenues and fees paid by the MPPFs (Augusztinovics and others 2002).

In 1998, there were 38 MPPFs; by the end of 1999, mergers had reduced the number to 25. At that time, 78 percent of participants belonged to five funds that accounted for 73 percent of all assets (Rocha and Vittas 2001). In 2001, the number of funds was down to 21, and the three biggest ones had about two-thirds of the market share. According to Müller (2002), 21 is still a rather large number of funds for only about 2 million members.

Consolidations occurred for various reasons. Since 1997, about one-third of the funds that applied for licenses have not been able to begin operation, mainly because they did not have the required number of members. Another one-third were very small—under 10,000 members—and were acquired by larger funds within several months of their inception. Currently, several medium-sized funds—with about 45,000 to 50,000 members—are contemplating mergers (Augusztinovics and others 2002).

Comparing various funds' performance is difficult, for several reasons (Rocha and Vittas 2002). Assets are valued once per quarter, and interest is credited once a year, making it difficult for regulators and contributors to follow changes in their asset portfolios. Also, since the rules for disclosing operating costs and returns are not very well defined, individual funds have set up their own methods, which makes it hard to compare the funds. Simonovits (2000) explains that in 1998, despite the fact

that the funds incurred significant losses, their negative returns were hidden by manipulating the calculations. A recent ILO study calculated that during the first 3 years of operation, the net rates of return (deducting administrative fees) were negative for all MPPFs (Augusztinovics and others 2002).

It is difficult to determine the compliance rate of either employees or employers because of the collection process. The state tax agency collects contributions to the first tier; for the second tier, employers have to transfer employees' contributions to the pension funds. There are no individual contribution records for the first tier. For the second tier, workers receive only an annual statement from the pension fund, and the statement does not include enough details to determine whether the employer has actually paid the contributions (Müller 2002).[12]

Although noncompliance has not been officially reported in Hungary, as it has in Latin American countries, where statistics are readily available, one can assume that evasion is a major problem. The underground economy has been estimated to be as high as 30 percent of GDP (Lackó 1998). In addition, underreporting of income is common, which results in lower contributions to both tiers, and a significant number of workers do not actively contribute to their accounts (Augusztinovics and others 2002).

The government that came into power in mid-1998 was not in favor of individual accounts and took some measures to discourage enrollment. The original plan had been to raise the contribution rate to the second tier from 6 percent to 8 percent by 2000, but the government decided to keep the 6 percent rate until at least 2002. The reduced rate could yield a much lower pension for some workers, who might have been better off staying under the reformed PAYGO system. The government also extended the deadline for switching back to the PAYGO system another 2 years, to the end of 2002 (Rocha and Vittas 2001; IBIS, November 1997; *Pensions International,* May 2001). As of October 2001, very few had opted to switch back. In November 2001, membership in the mixed system became voluntary. Beginning in 2002, new entrants to the labor force were allowed to choose the public system, and the guaranteed minimum benefit for the second tier was eliminated (Müller 2002; Augusztinovics and others 2002). At the time of this writing, another government is in power—the architects of the 1997 reform—and it has announced its intentions to make the system mandatory once again for new entrants to the labor force.

Since many more workers signed up for MPPF than was originally anticipated, there were not enough contributions to the PAYGO system to fund current pensions (Rocha and Vittas 2001). As noted above, those who switched to the MPPF contribute 1 percent of earnings to the public scheme, and those who remain in the PAYGO system pay 9 percent.

Poland

Poland set up a three-tiered system. The first tier took a different tack from those in Hungary and the Latin American countries by changing the old PAYGO program (ZUS). It set up a system of NDC accounts similar to those in Sweden and Latvia.[13] This system creates for each insured person a hypothetical account containing all contributions made during his or her working life, indexed to wage growth. The pension is calculated by dividing that amount by the average life expectancy at the time of retirement; this benefit is then indexed to prices. Unlike the old formula, the NDC does not factor periods of noncontribution into the calculations, and no special early retirement provisions are available. If an insured person dies before retirement, the account is closed; there are no survivor's benefits based on the notional account.[14] A minimum of 25 years of contributions for men and 20 for women is required in order to receive a pension; those who defer retirement can receive a significantly higher benefit. The minimum age for retirement is 62 for both men and women (Zukowski 1999).

Transitional first-tier benefits are provided for those who have years of service under the old PAYGO system. Their first-tier notional accounts are credited with "initial capital." The amount is calculated according to age and years of contribution under the old system; everyone will have the same retirement date—namely, the last day of the old system. This method of calculating acquired rights was used because most pre-1980 contribution histories were destroyed (Chlon, Góra, and Rutkowski 1999).

The second tier is made up of mandatory individual accounts managed by private pension companies. Everyone under age 30 at the time of the reform had to participate; those between ages 30 and 50 had a choice. Both employees and the self-employed are covered.[15] Nine percent of the employee's contribution finances an individual account, and 3 percent goes to ZUS; all of the employer's 12 percent contribution goes to ZUS. The ceiling on contributions is 30 times the average wage. To make up for the increased employee contribution, the government mandated a 23 percent wage hike. (In addition to the 12 percent pension contribution, employees must pay 8 percent to the state disabled fund and 3 percent to the sickness fund. (See *Pensions International*, December 1998; Superintendency of Pension

Funds 2001b.) Chile and a few other Latin American countries also raised employees' wages at the time of their reforms.

At retirement, an individual must purchase an annuity from a licensed insurance company with the assets of the second-tier account. The government will guarantee the benefits if a company goes bankrupt. Benefits must be indexed at least to consumer prices and may be indexed to average wage growth. The same mortality tables must be used to calculate life expectancy for men and women (Chlon, Góra, and Rutkowski 1999). As of early 2002, no specific legislation regarding annuities had been passed by the congress (Chlon-Dominczak 2002; Müller 2002).

Since each member owns the assets in the individual account, in case of the member's divorce or death, the proceeds go to the appropriate family member or designated beneficiary. If a member dies, half of the account goes to the spouse's account and the other half to a designated beneficiary. When there is a divorce, savings are divided between the spouses as determined by the court (Chlon-Dominczak 2002).

Disability benefits were not specifically defined for the second tier. Individuals who become disabled are eligible for a disability pension under the first tier until they reach retirement age. While they work, they contribute to both tiers; if they stop working, they stop making contributions, although funds from the individual account will continue to be invested. Based on provisions of the old social security law that were not modified under the new law, a disabled worker may choose an old-age or a disability pension, whichever is higher, on reaching retirement age. Workers are more likely to choose the disability pension because it is probably going to be higher. To date, there are no regulations regarding whether a disabled pensioner who is receiving a first-tier benefit can withdraw the funds from his or her individual account (Chlon-Dominczak 2002).

The government guarantees a minimum pension to men who have reached age 65 and 25 years of contributions, and to women age 60 with 20 years of contributions, if the worker's combined benefit from the first and second tiers is below the statutory minimum. This amount is indexed for inflation and funded by general revenues (Chlon, Góra, and Rutkowski 1999).

The third tier consists of employer-sponsored voluntary savings plans. These plans can be set up as an employee pension fund, an investment fund, a group life insurance policy with an insurance company, or a contract with a mutual insurance society. Employers can contribute up to 7 percent of an employee's earnings, and employees may make voluntary contributions (Superintendency of Pension Funds 2001b; *Pensions International,* May 2001).

A Polish pension fund is managed by a universal pension society. Pension societies must have 4 million Euros in assets and may be insurance companies, banks, other financial institutions, or corporations, including state-owned enterprises. Until 2005, each pension society can manage one pension fund that has conservative investments. Beginning in 2005, each pension society will be allowed to set up a second pension fund with other, riskier investments. An individual may choose only one fund (Chlon-Dominczak 2002). The system began with 13 pension funds (Golinowska and Kurowski 2000); at the end of 2001, that number was 18, with three of the largest companies accounting for 55 percent of total members and 65 percent of assets (Müller 2002).

Administrative fees are charged on contributions, assets, and transfers from one pension fund to another if an individual switches after less than 2 years' membership. Average fees for contributions in 2000 were 8.57 percent of the contribution amount; fees will gradually decrease to 5.76 percent in 2020. Workers who remain with a pension fund for longer periods of time pay reduced fees on contributions. One fund charges no fees if an individual stays for 25 years. The higher fees were permitted at the beginning to compensate the companies for their high start-up costs. Assets under management are assessed at no more than 0.6 percent (60 basis points) per year. Exit fees may range between 5 percent and 40 percent of the minimum wage, depending on the worker's length of membership (Chlon-Dominczak 2002; Superintendency of Pension Funds 2000; Frontczak 2000; *Polish News Bulletin,* August 22, 2001). Most of the Latin American countries charge fees as a percentage of earnings. Chile has additional fixed monthly fees, some Mexican companies charge for assets under management, and Peru imposes exit fees.

Investments are permitted in treasury bonds and bills, bank deposits, stocks, and investment funds. Up to 20 percent of total assets are permitted in bank deposits, up to 40 percent in stocks, and up to 100 percent in government securities. Investments in OECD countries are limited to 5 percent (Superintendency of Pension Funds 2000; Golinowska and Kurowski 2000).[16] In May 2002, 27.6 percent of the assets were in stocks, and 66 percent were in government bonds (Reuters, May 8, 2002). This differs from the Chilean experience, where even after 20 years, only about 10 percent of total assets are in stocks (SAFP 2002). In 2005, a new type of pension fund will be allowed that invests in low-risk instruments; only individuals over age 50 will be eligible to participate (*Polish News Bulletin,* February 10, 2000). Chile implemented a law in March 2000 permitting a second type of pension fund that invests in fixed-rate instruments for workers who are within 3 years of retirement age.

Another law, implemented in August 2002, allows each pension fund management company up to five different funds with varying degrees of risk.

Polish pension funds must yield a minimum rate of return (in nominal terms): either 50 percent of the average rate or 4 percent lower than the average for all funds during 24 consecutive months, whichever is lower.[17] If its rate of return is less than the average, a pension fund must make up the difference from its own reserve account, normally containing between 1 percent and 3 percent of its assets. Once the reserve is used up, the pension society's assets must pay for the losses. Any additional deficit is covered by the guarantee fund—paid for by no more than 0.1 percent of all the pension societies' assets. Once all of the above funds are depleted, the government ultimately guarantees the solvency of the pension funds (Golinowska and Kurowski 2000; Superintendency of Pension Funds 2001b).

The required minimum rate of return in many Latin American countries has resulted in similar investment strategies in the pension management companies and consequently little meaningful choice for workers. This situation, often called the "herd effect," forces companies to invest in the same instruments most of the time in order to maintain their minimum short-term profitability. It also effectively rules out long-term investment strategies. Since the companies have similar rates of return and an individual can switch from one company to another, the need to compete leads to the creation of large sales forces, costly advertising campaigns, and outlays for incentives to lure new contributors. The high cost of competing translates into high administrative fees.

Polish pension funds' net rate of return (deducting administrative fees) for the first 2 years was between –8.95 percent and –13.76 percent (Chlon-Dominczak 2002). The situation improved somewhat in the third year, although a total net loss was recorded (*Pensions International,* May 2002; *Polish News Bulletin,* May 9, 2002).

Poland has a huge number of sales agents. As of early December 1999, more than 450,000 were registered, more than 1 percent of the country's entire population. This is due in part to the fact that the only requirements for becoming an agent were having no criminal record, being of legal majority age, and paying a $25 registration fee. The agents had little training and were not subject to normal business standards. As a result, questionable practices may have been used to lure workers to particular funds. There were reports of sales representatives who forged documents, made multiple agreements with the same individual for the same services, and signed up unqualified workers (BBC Monitoring, August 25, 2000; Superintendency of Pension Funds 2001a; Golinowska and Kurowski 2000).

The Polish government plays a large administrative role in the second tier. Until the end of March 2002, the Superintendency of Pension Funds was responsible for licensing, regulating, and supervising pension funds in both the second and third tiers. This semi-autonomous agency was funded both by general revenues and by fees imposed on the pension funds (Golinowska and Kurowski 2000; Superintendency of Pension Funds 2001a). On April 1, 2002, the agency was eliminated and its functions taken over by the newly created Insurance and Pension Funds' Supervisory Commission (*Pensions International*, May 2002; *Polish News Bulletin,* March 4, 2002).

The 1998 pension law added many new functions to ZUS: collecting contributions for the first and second tiers, transferring part of these to the correct second-tier institutions, and recording the remaining part in notional individual accounts in the first tier.[18] A new reporting system was introduced to allow two types of identification numbers to be used for recording contributions. Since the same number had not been used in all transactions, matching numbers was an impossible task and many contributions could not be transferred to individual accounts (Chlon-Dominczak 2002).

Serious problems with the new, computerized system further complicated record collection and storage, causing a significant backlog. According to law, ZUS must pay a 30 percent fine to the individual for delinquent payment if that person can prove that ZUS was at fault. Apparently, the fine payment is higher than the reported rate of return (*Polish News Bulletin,* April 11, 2001). In November 2001, ZUS's debt was reported as more than US$776 million. As of May 2002, the government was considering converting ZUS's debt into treasury bonds (*Pensions International*, November 2001 and May 2002).

Bulgaria

Bulgaria set up a three-tiered system in stages, between 2000 and 2002. A modified public PAYGO is the first tier, mandatory individual accounts make up the second tier, and voluntary individual accounts the third tier. The mandatory tier consists of individual accounts for old-age and survivors benefits in approved pension insurance companies. The companies can also offer voluntary funds. Voluntary funds have actually been in existence since 1995, but under the new law they are regulated for the first time and must apply for licenses. A newly created State Insurance Supervision Agency oversees the second and third tiers, and the National Social Security Institute supervises the first tier (Müller 2002; IBIS, November 1999; *Pensions International,* July 2000, January 2001, and June 2001).

The pension insurance companies can offer a universal pension fund and an occupational pension fund. Occupational funds began operation in 2000 and are designed for two categories of employees in arduous occupations; only employers contribute to occupational fund individual accounts (7 percent to 12 percent of payroll). Universal funds began operation in early 2002 and are mandatory for workers who were born after 1959 and are not in one of the arduous occupations. The universal fund account is financed with 2 percent of earnings, split between the employee and the employer. That rate will be increased gradually to 5 percent (Müller 2002). Pension insurance companies may charge a number of fees for the universal fund: up to 5 percent of contributions, up to 1 percent of assets, and a transfer fee of not more than twice the actual cost. Workers may change pension insurance companies once a year (ISSA 2002).

Pensions vary according to the type of fund. For occupational pension funds, a full retirement benefit is payable at age 60 (men) and 57 (women), with early retirement available at age 56 (men) and 52 (women). Old-age and survivors benefits take the form of a limited annuity or lump-sum payment, and reduced working capacity benefits include a lump sum or limited-period payment. The universal fund provides a lump sum or a limited-term annuity for permanent disability and survivors insurance plus a lump sum, limited-term, or long-term annuity for old-age insurance. Voluntary funds offer limited-period payments, long-term annuities, and lump-sum payments for old age, survivors, and disability insurance (Boyadziev 2001).

Universal funds must have 30,000 members after 2 years of operation, and closed funds must have 15,000 members and 3 million Leva in start-up capital. The cash requirement is the same for the voluntary funds. Allowable investments include 50 percent in government paper or bank deposits; up to 5 percent in real estate and mortgages; up to 5 percent in securities issued by one company; up to 5 percent in foreign government securities and municipal bonds; and up to 5 percent in foreign assets traded in registered securities markets (ISSA 2002).[19]

The number of funds has decreased, and most funds are funded at least in part by international bank and insurance companies. As of January 2001, nine occupational funds were licensed; by November of that year, eight remained (IBIS, February 2001; Troev 2001).

Unlike most of the Latin American countries, the Bulgarian government does not offer any type of guaranteed benefit or rate of return. The State Insurance Supervision Agency determines the minimum allowable rate of return; if a pension insurance company falls below that rate, it must present a business plan that includes strategies for improving its performance (ISSA 2002; Müller 2002).

A serious problem in Bulgaria is the lack of suitable investment opportunities. Even though at least half of all investments must be in government bonds or bank deposits, most of the available investments are short term. Also, it was reported in September 2001 that because there are so few Bulgarian companies in which the funds could invest, the government planned to allow investments in state-owned enterprises such as the Bulgarian Telecommunications Company or the National Electricity Company (*Pensions International*, March and September 2001).

Kazakhstan

Kazakhstan is the only country of this group to adopt the Chilean model—mandatory individual accounts for current workers and new entrants to the labor force.[20] The old PAYGO system will be phased out, and a newly created State Center for Pension Payments will pay full pensions to those retired at the time of the reform and partial benefits to those who switched to the new system (Andrews 2000; IBIS, February 1998). This is unlike Chile's recognition bonds, which provide the value of accrued rights under the old PAYGO system.[21]

Employers contribute 15 percent of the payroll to the state pension center; employees pay 10 percent of earnings to an individual account and may make additional voluntary contributions.[22] Employees may switch funds up to twice a year. Maximum administrative fees are set at no more than 1 percent of contributions and 10 percent of investment income (Andrews 2000; IBIS, February 1998). No Latin American country has such limits on administrative fees.

Retirement benefits are payable at age 63 with 25 years of service for men and age 58 and 20 years for women. Early retirement is allowed at age 55 with 33 years of service. The government will pay a guaranteed minimum pension to anyone with the required years of service whose pension is below a certain amount (namely, a percentage of the subsistence standard of living). In 2000, the minimum pension was 28 percent of the average wage (Andrews 2000; IBIS, February 1998).

Until the annuities industry is established, retirement benefits will be in the form of a lump sum, and disability and survivors benefits will be paid as flat-rate social assistance allowances funded by general revenues (Andrews 2000).[23] When the Chilean system was first set up, workers were covered for disability and survivors benefits under the old public system until the new program was phased in (Kritzer 1981). An insurance law passed in December 2000 allowed the creation of

annuities; however, as of April 2001, no annuities were yet available (*Pensions International*, April 2001).

Workers may choose between the state-run pension fund and a private-sector fund.[24] The state guarantees the solvency of its fund. Private-sector funds can be either open or closed funds, with minimum capital requirements of about US$630,000 and US$140,000, respectively.[25] Local companies or international firms registered in Kazakhstan may set up a fund. As of the end of 2000, only one international firm had a pension fund (Andrews 2000).

Allowable investments include state securities, state banks, international financial agencies such as the World Bank and the Asian Development Bank, commercial banks deemed financially stable by the National Bank of Kazakhstan, and profitable Kazakhstan companies that have passed international auditing requirements within the last 2 years (IBIS, February 1998). As of June 2000, 89 percent of investments were in government paper, 8 percent in the corporate sector, 3 percent in the financial sector, and less than 1 percent in foreign instruments. At that time, there were 16 pension fund management companies, including the State Pension Fund; the state fund had about 45 percent of market share, and the largest private fund had about 18 percent. By the end of 2000, the state fund had 39 percent of market share and there were 14 private-sector funds. Like Bulgaria, Kazakhstan does not have enough suitable vehicles for investment. There has been talk of selling shares of state-run companies to investors (FIAP 2001; *Pensions International*, April 2001; Reuters, February 20, 2001).

Pension funds must yield a minimum rate of return equal to either 50 percent of the average real return of all pension fund management companies or the index of the average real rate of return of all companies minus 2 percent, whichever is lower. The pension fund must make up any shortfall from its reserves or its equity (Andrews 2000). Most Latin American countries require the same of their pension management companies. Although the reported real rates of return have been relatively high, there are some questions concerning the official method of calculation; technical issues need to be resolved in order to provide an accurate means of comparison (Andrews 2000).

Kazakhstan has divided pension regulatory functions among three government organizations, unlike Chile and other Latin American countries, in which one administrative entity usually supervises the program. The creators of Kazakhstan's program thought that since the country did not have much experience in the field of regulation, it would be better to assign different functions to the agencies that had the most relevant knowledge (Andrews 2000).

Estonia

Estonia's pension reform has been done in stages. In 1998, voluntary supplementary pensions were introduced, and in 1999–2000 the PAYGO system was modified. Changes in the PAYGO system include raising the retirement age to 63 by 2016 and revising the benefit formula. Legislation passed in mid-September 2001 set up mandatory individual accounts in the second tier (starting operations in mid-2002), while voluntary accounts became the new third tier (Oorn 2001). The government anticipates it will have to increase its social security financing during the transition, which could be about 6 years (IBIS, October 2001).

Workers under age 18 must participate in the new system, but those 18 or older have a choice. For those who opt for the old system, the employer contributes 20 percent of the payroll; for those who choose the new system, the worker pays 2 percent to an individual account and the employer's 20 percent is divided between the PAYGO (16 percent) and the individual account (4 percent) (*Pensions International*, October 2001). Retirement benefits will be payable at age 63 as an annuity from a life insurance company, programmed withdrawals regulated to guarantee income for an expected life span, or a combination of the two (Oorn 2001). Unlike most of the other CEE countries, which offer only annuities or a lump-sum payment upon retirement, Chile and most of the other Latin American countries provide these three types of benefits.

As of mid-May 2002, the Estonian Financial Inspectorate Board had licensed 15 pension fund management companies to begin operation. Each company is allowed to offer three types of funds, with varying degrees of investment risk: one fund that invests up to 50 percent of assets in stocks; another that invests up to 25 percent in stocks; and one that invests only in bonds. Statistics concerning the first 3,500 workers who enrolled in a fund in mid-May include:

- About two-thirds chose the fund with the highest risk.
- About 16 percent chose the fund with the medium risk.
- About 16 percent chose the fund with the lowest risk.
- About 30 percent of the investors were born between 1963 and 1973, and 80 percent of them chose the fund with the highest risk (*Baltic Business Daily*, May 2002).

These initial investment rules are unusually broad. Most other countries began by requiring that the majority

of investments be made in government bonds, then gradually expanded or planned to expand to include more diversified portfolios. Also, most other countries allowed each pension fund management company to offer only one type of fund; in some countries, the companies were allowed to increase that number over time.

Croatia

Croatia opted for a mixed system rather than the Chilean model, reforming its PAYGO system and adding mandatory individual accounts plus a third, voluntary tier. The modified PAYGO first tier was implemented in 1999 and is based on pension points that calculate a worker's earnings in relation to the average wage for each year after 1969 (Müller 2002). The normal retirement age is being raised gradually to 65 for men and 60 for women by 2007 (it is currently 62 and 60, respectively); the benefit formula is being adjusted, including a change in indexing; and qualifying conditions for disability are being tightened.

Individual accounts were implemented in 2002 as the second tier (Social Security Administration 2002; ISSA 2002). Contributions are 5 percent of earnings. Workers under age 40 must have an individual account; workers between ages 40 and 50 can choose to remain under the PAYGO only or have an individual account. Workers over age 50 must remain in the PAYGO program but will be allowed to have a third-tier voluntary account. At retirement, a pension insurance company will provide an annuity that is indexed to prices and based on assets in both mandatory and voluntary accounts.

Each pension fund management company may set up only one fund and must have 80,000 members to be a second-tier company and 2,000 for the third, voluntary tier.[26] If the number of members falls below this minimum for 3 months, the company's license will be revoked (Golinowska and Kurowski 2000). Capital requirements include 40 million HRK for up to 100,000 members and 1 million HRK for every 10,000 members over 100,000 (ISSA 2002).

Pension fund management companies may charge a variety of administrative fees. Individual account fees may include up to 0.8 percent of contributions, up to 0.8 percent of annual net assets, and up to 25 percent of the annual real rate of return. In 2002, transfers from one pension fund to another were free; after that, a fee will be charged (Croatian Chamber of Economy 2001; IBIS, November 2001). If a member transfers from one fund to another after less than 5 years' membership, a transfer fee will be charged—5 percent of the individual account after the first year of membership, 2.5 percent in the second year, 1.25 percent in the third year, 0.62 percent in the fourth year, and 0.31 percent in the fifth year (ISSA 2002; Müller 2002). The Peruvian system is the only Latin American program that charges such an exit fee when a member transfers to another fund.

At least 50 percent of investments must be in long-term central government bonds; up to 30 percent may be in long-term local government bonds; up to 30 percent may be in stock issued by joint stock companies registered in Croatia; up to 30 percent may be in long-term bonds issued by Croatian corporations; up to 15 percent may be invested in foreign government bonds that are traded in OECD countries; and up to 5 percent may be in cash and bank deposits (ISSA 2002).

Pension fund management companies are not allowed to provide any type of inducement, such as cash or a gift, to persuade an individual or group to join or remain with the company (Golinowska and Kurowski 2000). This rule reflects the Chilean experience, in which competition among companies is very keen and sales agents have provided all kinds of rewards, including vacations and appliances.

Administrative functions for the second tier are performed by the Central Registry of Insured Persons, which is responsible for collecting contributions, maintaining records of individual accounts, and providing reports to the insured about their accounts. The insured must sign up with the central registry upon choosing a pension fund, thereby preventing sales agents from trying to influence the decision (Müller 2002).

The Agency for Supervision of Pension Funds was set up to oversee the licensing, operation, and general operation of the pension fund management companies. As of early March 2002, seven companies had been licensed (Müller 2002). The agency also determines the reference rate of return for pension funds. If a fund's rate of return falls below three times the reference rate, the fund must make up the difference from its guarantee fund, which is financed by administrative fees charged to its members. If the guarantee fund cannot cover the losses, the company must use up to 20 percent of its capital. If that amount is not adequate, the government will guarantee the rest (ISSA 2002).

Latvia

Latvia set up a system of notional accounts in 1996, voluntary pensions in 1998, and in mid-2001 a second tier with individual accounts. Workers between the ages of 15 and 29 must set up an individual account, whereas participation for workers aged 30 to 49 is voluntary. Workers over age 49 will remain under the public system. The employee pays 2 percent of earnings to the second-tier individual account; this amount will be increased to 10 percent over 10 years (IBIS, September 2001).

The state treasury managed the funds until January 1, 2003, and invested them in state securities and bank deposits. Currently, individuals can choose a pension fund management company supervised by the Finance and Capital Market Commission. The treasury manages only the funds of workers who have not chosen a company for themselves. At retirement, an insured person may choose between adding second-tier assets to a first-tier pension or buying a life insurance policy (IBIS, September 2001).

As of April 2002, Latvia had five private pension funds offering mandatory individual accounts (*Pensions International*, April 2002).

Notes

[1] For a detailed description of Latin American reforms, see Kritzer (2000).

[2] According to Müller (2002, 21), pension privileges—a lower retirement age and higher pensions—(are) granted for occupations of strategic importance.

[3] This is another similarity between the Latin American and CEE countries. Prior to reform, the capital markets were very underdeveloped.

[4] The recognition bond pays 4 percent interest as soon as a worker sets up an individual account. The transitional benefit in Argentina, for example, is paid on a monthly basis after the beneficiary has retired, earns no interest, and is not indexed for inflation, further easing the government's cash flow constraints (Müller 2001b).

[5] Multinational companies operating in these countries are currently providing private survivors and disability insurance for their employees as an incentive for employment.

[6] This minimum benefit is part of either the public or the private-sector tier, depending on whether the country has the Chilean or mixed model (Mesa-Lago 2001).

[7] This is in contrast to most Latin American countries, where the use of gender-specific rates produces a smaller annuity for women since they generally live longer than men.

[8] By the end of 2000, fewer than 1 percent of workers had switched pension funds (Hungarian Financial Supervisory Authority 2001a).

[9] For a detailed description of the various required reserves, see Augusztinovics and others (2002).

[10] An ILO study compared the 2000 administrative fees of two types of pension funds: smaller funds that have an asset manager chosen from the open market and larger funds that use an asset manager chosen from within (that is, from a firm owned by the same parent company). The investment fees charged by the larger companies were three times as great as those of the smaller companies, even though the gross rates of return (before deducting administrative costs) were about equal (Augusztinovics and others 2002).

[11] In Peru, for the first 7 years of operation, the pension funds financed the supervisory authority. In 2000, the supervisory authority was merged with the financial supervisory authority.

[12] See Augusztinovics and others (2002) for a more detailed explanation of the collection process.

[13] For a more complete description of NDC, see Cichon (1999).

[14] Another part of the contribution to ZUS finances survivors and disability insurance still run by ZUS.

[15] In most Latin American countries, participation by the self-employed is voluntary.

[16] This 5 percent limit is being discussed as part of Poland's negotiations to become a member of the European Union (IBIS, April 2002).

[17] Until October 1999, the minimum rate of return in Chile was calculated in real terms for a 1-year period. A law implemented at that time lengthened the period for calculating the minimum profitability from 1 year to 3. The new time period was phased in over 3 years.

[18] For a detailed description of ZUS's new functions, see Chlon-Dominczak (2002).

[19] These figures add up to only 70 percent. There is no additional information as to how the other 30 percent can be allocated.

[20] This section is based primarily on Andrews (2000), who provides a very comprehensive description of the reform.

[21] In Chile, once the insured switched from the old to the new system, the bond was indexed for price inflation and began earning a set interest rate until the individual's retirement (Myers 1996).

[22] Unlike several Latin American and Central and Eastern European countries, Kazakhstan did not mandate a raise in earnings to make up for the increased contribution. As a result, the 10 percent contribution plus administrative fees constituted a loss of earnings for the employee (Andrews 2000).

[23] According to Emily Andrews of the World Bank (2000), higher earners who become totally disabled will have a much lower replacement rate than lower earners.

[24] Both Argentina and Uruguay offer state-run pension funds.

[25] An open fund allows membership to anyone. A closed fund is limited to employees of specific companies.

[26] Most of the Latin American countries started their programs allowing only one pension fund per management company. As mentioned in the description of the Polish system, after almost 20 years of operating in this way, Chile set up a second fund for members who are within 3 years of retirement. Beginning in 2002, each management company was allowed to have up to five different funds with varying degrees of risk. Mexico's original law allows for eventually offering a variety of funds.

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