

CHAPTER 7

Romania

Romania inherited a socialist-era public pension system financed on a pay-as-you-go basis (meaning that contributions from current workers are used to pay benefits to current beneficiaries). As a result of increased informality in labor markets following its transition from a centrally planned economy to a market economy, pension system revenues fell from the equivalent of 9.3 percent of gross domestic product (GDP) in 1992 to 6.3 percent of GDP by 1998—despite an increase in contribution rates—while expenditure fluctuated at about 7 percent of GDP. As a result, net cash flow fell from a surplus of 1.9 percent of GDP to a deficit of 0.8 percent of GDP.

Recognizing that a pension system that offered comparatively generous benefits, low retirement ages, and lax benefit eligibility conditions would not be sustainable over the long term as the population ages, the government introduced substantial reforms to the pension system in 2000. These reforms raised retirement ages, extended the service period required to become eligible for a full pension, imposed new conditions on early retirement, and replaced the traditional defined-benefit formula with a new formula based on points. In 2006, the government passed legislation to introduce a mandatory, fully funded, defined-contribution scheme, which became operational in 2008.

Against this backdrop, this chapter evaluates Romania's pension system, focusing on fiscal sustainability and benefit adequacy. Adequacy is evaluated through the lens of statutory net replacement rates for different retirement ages, patterns of contributions, and income levels relative to international benchmarks.

This chapter is organized as follows. The next section discusses the motivation for the reforms. The following section describes the key characteristics of the reformed pension system. The third section assesses the adequacy of pension benefits and the fiscal sustainability of the system. The last section draws conclusions.

Motivation for Reform

The pension system that Romania inherited suffered from a number of serious design flaws similar to those observed in other transition economies. These included (a) low retirement ages, which allowed pensioners to receive benefits for very long periods; (b) generous benefits, which created incentives for early retirement, further increasing the period over which benefits were paid; (c) the computation of benefits based on an individual's last five years of wages rather than his or her lifetime wages, which weakened the link between contributions and benefits and created incentives for workers to underreport income or to migrate from the formal to informal sectors; and (d) lax eligibility conditions governing the award of disability pensions, which resulted in more beneficiaries than could be justified on the basis of impairment. The pension system was also fragmented and provided special privileges for particular occupations.

In the early years of the transition to a market economy, pension system revenues in Romania fell, as a result of increasing informality in labor markets and the restructuring of state enterprises, which contributed to rising informal-sector employment. As a result, the number of individuals contributing to the pension system fell from about 8 million in 1990 to 5 million by 1999. To ease the impact of enterprise restructuring, the government granted many workers early retirement. As a result, the number of beneficiaries rose from 2.2 million to 4.0 million over the same period. To cope with these changes, the government increased the contribution rate from 14 percent in 1990 to 28 percent in 1992 (World Bank 2004). Despite the change, revenues still fell short of expenditures, and by 1995, the scheme generated a deficit of 0.2 percent of GDP (table 7.1).

The deficits of the pension system in the late 1990s were not huge and could probably have been afforded were it not for the fact that they were

Table 7.1 Fiscal Balance of Romania's Pension System before Reform, 1992–98
(percentage of GDP)

<i>Year</i>	<i>Revenues</i>	<i>Expenditure</i>	<i>Balance</i>
1992	9.3	7.4	1.9
1993	8.1	6.7	1.4
1994	7.1	6.7	0.4
1995	6.8	7.0	-0.2
1996	6.7	6.9	-0.2
1997	6.5	6.5	-0.0
1998	6.3	7.1	-0.8

Source: World Bank 2004.

expected to grow substantially over the medium and long terms as a result of the aging of the population.¹ The aging of Romania's population is captured in the old-age dependency ratio (the population age 65 and older divided by the population age 20–64), which is projected to rise from 23.6 percent in 2005 to 56.6 percent by 2050.²

Recognizing these challenges, the government introduced substantial reforms to the pension system in 2000. These changes included raising retirement ages, extending service periods for eligibility for full pensions, imposing new conditions for early retirement, and replacing the traditional defined-benefit formula with a new formula based on points. These measures managed—at least in the short run—to balance revenues and expenditures and to achieve a fragile surplus equivalent to 0.3 percent of GDP in 2006 and 0.2 percent in 2007. In 2006, the government passed legislation to introduce a mandatory fully funded defined-contribution scheme, which became operational in May 2008.

Characteristics of Romania's Pension System

This section describes the main characteristics of Romania's pension system. They include the design of the individual pillars of social insurance; the rules governing pension system taxation, institutional structure, and coverage; and the provisions governing old-age, disability, and survivorship pensions.

The design of the pension system is assessed using a conceptual framework developed by the World Bank, which generally recommends including a funded component if conditions are appropriate but increasingly recognizes that a range of choices is available to policy makers to provide

effective old-age protection in a manner that is fiscally responsible (see Holzmann and Hinz 2005).

In general, the World Bank supports pension systems composed of some combination of five basic pillars:

- a noncontributory (or zero) pillar (in the form of a demogrant, social pension, or social assistance benefit) intended to provide a minimal level of income protection;
- a first-pillar contributory system linked to earnings, which seeks to replace a portion of preretirement income;
- a mandatory second pillar (essentially, individual savings accounts), which can be designed in various ways;
- a voluntary third pillar, which is flexible and discretionary (this pillar, too, can take a variety of forms); and
- a fourth pillar of informal intrafamily or intergenerational sources of financial and nonfinancial support to the elderly, including access to health care and housing.

Pillar Design

The design of Romania's pension system incorporates all five of the pillars recommended by the World Bank (table 7.2). The publicly managed non-contributory zero pillar, financed with general tax revenues, redistributes income to lower-income groups using means testing that considers both income and assets. The amount of the noncontributory benefit is based on the state-defined minimum income guarantee, which is adjusted by the government on the basis of inflation.

Both the publicly managed, pay-as-you-go first pillar and the newly introduced, privately managed, fully funded second pillar are earnings-related schemes. Benefits under the first pillar are calculated from an individual's accumulated points, which are determined by his or her wages relative to the average wage. Second-pillar benefits are a function of an individual's contributions and investment earnings; the procedures governing the payout of benefits are yet to be established. Contributions for the second pillar started in May 2008. The third pillar is an optional privately managed, fully funded, defined-contribution pension scheme, which is intended to provide individuals with a mechanism for supplementing the benefits paid by the mandatory pillars. The fourth pillar provides health care to the elderly as part of the national health care system.

First-pillar contributions are exempt from taxation while benefits are taxed. The fully funded second and third pillars will be subjected

Table 7.2 Structure of Romania's Pension System

Scheme type	Coverage	Type	Function	Financing	Generic benefit	Benefit indexation	Taxation		
							Contributions	Investment income/ capital gains	Benefits
Zero pillar (public noncontributory)	Universal	Means tested	Redistributive	Tax revenues	Difference between minimum income guarantee and actual income	Government decision based on changes in consumer price index	n.a.	n.a.	Exempt
First pillar (public, earnings related)	Mandatory	Points	Insurance	Percentage of individual earnings	Benefit calculated on the basis of the number of points earned	Adjusted on the basis of changes in point value ^a	Exempt	n.a.	Taxed
Second pillar (private, earnings related)	Mandatory	Defined contribution	Insurance	Percentage of individual earnings	Pension from capital accumulation	Regulation on benefits does not exist yet	Exempt	Exempt	Taxed
Third pillar (private, voluntary)	Voluntary	Defined contribution	Insurance	Voluntary contributions	Pension from capital accumulation	Regulation on benefits does not exist yet	Exempt ^b	Exempt	Taxed
Fourth pillar (public health care)	Mandatory	n.a.	Insurance	Percentage of individual earnings plus tax revenues	Specified health service package	n.a.	Exempt	n.a.	n.a.

Sources: European Commission 2007; OECD n.d.

n.a. = Not applicable.

a. The point value cannot fall below 45 percent of the gross average wage. The percentage is adjusted based on ad hoc decisions by the government.

b. An amount up to 200 euros per year per participant is tax exempt.

to exempt-exempt-taxed taxation (that is, classic expenditure tax), meaning that contributions are exempt from taxation (partially for the third pillar) and investment income is exempt but benefits are taxed (see box 1.1 in chapter 1). The zero and fourth pillars are completely tax exempt.

Noncontributory scheme. Romania does not have a noncontributory social protection scheme specifically for the elderly, but the elderly are eligible for the minimum-income guarantee program, which provides financial support to households whose income falls below a minimum threshold. The threshold is a function of household size and income; the amount of the benefit is adjusted to make up the difference between the minimum income threshold and actual household income (World Bank 2003). In 2006, the monthly benefit was leu 92 (about 9 percent of the average wage) for a one-person household and leu 166 (15 percent of the average wage) for a two-person household. Benefits for large households rise in diminishing amounts. In 2005, 834,000 beneficiaries received minimum-income guarantee benefits, at a cost of leu 472 million, equivalent to 0.2 percent of GDP (World Bank 2007b).

Earnings-related schemes. Both the publicly managed, pay-as-you-go first pillar and the newly introduced privately managed, fully funded second-pillar are earnings-related schemes (table 7.3). In 2000, the defined-benefit formula used to calculate pensions under the traditional first-pillar scheme was eliminated in favor of a new formula based on points. Under this formula, an individual's points are determined by his or her wages relative to the average wage. Benefits are based on total accumulated points at retirement.³ The number of years of wages on which benefits are based is gradually increasing, from the best five years to the entirety of an individual's service, thereby improving transparency and tightening the link between lifetime contributions and the benefits received in retirement. Under the law, the point value cannot fall below 45 percent of the gross average wage—the exact value of which is set by the government on an ad hoc basis. Pensions paid to existing beneficiaries are also adjusted on the basis of changes made to the point value.⁴

Retirement ages are gradually being raised from 62 to 65 for men and from 57 to 60 for women, a change that is being implemented so slowly that it will not be fully implemented until 2015. Moreover, although the new retirement age for men is consistent with international norms, the age for women remains low by international standards. By 2050, Romanian women will collect benefits for 50 percent longer than men.⁵

Table 7.3 Parameters of Earnings-Related Schemes in Romania before and after Reform

<i>Scheme type</i>	<i>Period</i>	<i>Vesting period</i>	<i>Contribution rate</i>	<i>Contribution ceiling</i>	<i>Benefit rate</i>	<i>Pension assessment base</i>	<i>Retirement age</i>
First pillar (earnings related)	Prereform	10 years	25.5 percent (employee-employer breakdown not available)	5 times the average wage	2.5 percent accrual rate for men for the first 30 years and 1 percent for each year thereafter; 3 percent accrual rate for women for the first 25 years and 1 percent for each year thereafter	5 best consecutive years in last 10 years	62 for men, 57 for women
	Postreform	15 years	29.5 percent ^a (20.0 percent by employer, 9.5 percent by employee)	None	Benefit calculated on the basis of the number of points earned	Lifetime average indexed to nominal wage growth	65 for men, 60 for women
Second pillar (earnings related)	Prereform	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Postreform	Not yet established by law	2 percent increasing to 6 percent (over a period of 8 years)	None	Pensions from capital accumulation	Accumulated funds	65 for men, 60 for women

Sources: European Commission 2007; World Bank 1998, 2004.

n.a. = Not applicable.

a. The total contribution rate for old-age, disability, and survivor pensions is 29.75 percent. Individuals participating only in the first pillar pay 29.5 percent to the first pillar (20.0 percent by employer, 9.5 percent by employee). Individuals participating in both the first and the second pillars pay 27.5 percent to the first pillar (18.0 percent by employer, 9.5 percent by employee) and 2 percent rising to 6 percent to the second pillar (paid entirely by the employer). In 2009, the contribution rate will be reduced to 28 percent (18.5 percent by employer, 9.5 percent by employees).

Eligibility for a full pension now requires 35 years of service for men and 30 years for women, up from 30 years and 25 years, respectively, under the old system. The reform reduces costs and creates incentives for individuals to remain in the workforce longer (retiring with higher benefits). The minimum contribution period required to become eligible for benefits (the vesting period) was raised from 10 to 15 years, a change that will not be fully implemented until 2015.

In 2006, the government passed legislation to introduce the fully funded, defined-contribution, second-pillar pension scheme. This scheme is mandatory for everyone up to age 35 and voluntary for people age 36–45. Contributions will be diverted from the first pillar, starting at 2 percent in 2008 and increasing by half a percentage point each year until the rate reaches 6 percent in 2016.⁶

Voluntary scheme. A voluntary, privately managed, fully funded third-pillar pension scheme was introduced as part of the government's reform program to provide individuals with a mechanism for supplementing the benefits paid by the mandatory pillars (table 7.4). Benefits payable under the third-pillar scheme will be a function of an individual's contributions and investment earnings at retirement. The mechanism by which benefits will be paid under the scheme will be discussed in 2009. Total contributions are limited to 15 percent of gross monthly salary (total of employer and employee). Contributions can be made by employees or employers on the basis of agreements between the parties or existing labor contracts. Contributions are deductible (for both employees and employers), up to 200 euros per year. Benefit eligibility requires that participants reach age 60, have contributed for at least 90 months, and have accumulated capital sufficient to meet a minimum threshold. In the event of disability before retirement, a

Table 7.4 Characteristics of Romania's Voluntary Scheme

Coverage	Vesting period	Retirement age	Tax advantages to participants	Contributions tax deductible by employers	Lump-sum payments possible in retirement
Employees and the self-employed	90 months	60	Yes	Yes	Regulation on benefits does not exist yet

Source: OECD n.d.

participant is entitled to receive the funds in his or her account. In the event that the participant dies before reaching retirement, account funds will be distributed to the participant's surviving dependents.

Seven pension fund management companies are currently sponsoring voluntary pension funds. The largest three manage 73 percent of the assets in the scheme (Romania Private Pension Supervisory Commission Web site [<http://w4.csspp.ro/en/>]). At the end of 2007, 50,887 individuals (0.5 percent of the labor force) were participating in the scheme, and assets totaled leu 14.3 million (less than half of one percent of GDP). The scheme appears to be growing quickly. By March 2008, the number of participants had increased to 75,423, and total assets had reached leu 24.8 million.

Health care system. Health care in Romania is provided primarily through mandatory health insurance. Voluntary health insurance is available, but it is purchased mainly for travel abroad to countries in which services are not covered by Romania's mandatory scheme. The mandatory scheme is administered by district health insurance funds, which are responsible for collecting contributions and reimbursing claims from providers for health care services in their respective districts. The funds are regulated by the National Health Insurance Fund.

The system is financed primarily by contributions from the covered population. The contribution rate for employed people is 14 percent of payroll, split equally between employers and employees. The contribution rate for self-employed people, farmers, and pensioners is 7 percent. Children, people with disabilities, war veterans with no income, and the dependants of insured people do not pay for coverage. Recipients of health care services are required to make copayments for some medical services and pharmaceuticals (WHO 2000).

In 2005, health expenditure accounted for 5.5 percent of GDP, 70.3 percent of which was public expenditure and 29.7 percent was private expenditure. Of the private expenditure, 85.0 percent was attributable to out-of-pocket expenditure (informal payments, direct payments, and copayments) (WHO 2008).

Institutional Structure and Coverage of Earnings-Related Schemes

The first-pillar pension scheme covers employees with individual labor contracts, civil servants, judges, cooperative members, and recipients of unemployment benefits. There are special schemes for some professions, including lawyers and members of the military. In 2005, 5.9 million

individuals (39.1 percent of the working-age population and 57.6 percent of the labor force) contributed to the scheme.

The National House of Pensions is responsible for collecting contributions and paying benefits. It will also be tasked with collecting second-pillar contributions and transferring them to the appropriate private pension fund management company. The Romanian Private Pension System Supervision Commission is responsible for licensing and regulating the activities of the private pension companies. As of October 2007, six companies had applied for licenses to operate second-pillar schemes.

Structure of Benefits

The first-pillar earnings-related pension scheme provides old-age, disability, and survivorship pensions.⁷ The provisions governing each of these types of benefits are discussed below.

Old-age benefits. Eligibility for a reduced old-age pension under the first-pillar scheme currently requires individuals to have at least 11 years and 2 months of contributory service. This requirement is gradually being increased to 15 years by 2015. Eligibility for a full pension requires 30 years and 9 months of service for men and 25 years and 9 months of service for women. This requirement is gradually being increased to 35 years for men and 30 years for women by 2015. The retirement age is 62 years and 9 months for men and 57 years and 9 months for women. Retirement ages are gradually being increased to 65 for men and 60 for women by 2015. Individuals may retire up to five years before reaching their retirement age, subject to a reduction in benefits, provided they have contributed for 10 years more than the number of years of contributory service required to earn a full pension (European Commission 2007). Old-age benefits are based on a point system. Points are awarded each year on the basis of an individual's wages divided by the average wage. At retirement, an individual's total accumulated points are divided by his or her total years of service. This value is then multiplied by the pension point value to determine the individual's benefit. Under the law, the point value must not fall below 45 percent of the gross average wage, the exact value of which is set by the government on an ad hoc basis.

Disability benefits. Disability pensions are awarded to individuals who have lost at least 50 percent of their capacity to work. Participants who achieved the contributory period identified are entitled to a disability

pension (table 7.5). Participants entitled to a disability pension are granted a potential contributory period representing the difference between the full contributory period and the actual period of contribution at the time of disability.

There are three categories of disability depending on the degree of incapacity. The first, second, and third categories are awarded 0.75, 0.60, and 0.40 points per year, respectively. Upon reaching retirement age, recipients of disability benefits can continue to receive their benefits or elect to receive an old-age pension instead. Under the second-pillar scheme, participants who become disabled will be entitled to a lump-sum payment or periodic payments for up to five years if their account is insufficient for a minimum payment. Otherwise, participants can collect the pension they are entitled to from the second pillar.

Survivor benefits. Survivor benefits are awarded to spouses and orphans of individuals who, at the time of their death, were receiving (or had met the criteria to receive) an old-age or disability pension (table 7.6). Upon reaching the retirement age, spouses are entitled to 50 percent of the deceased's pension if the spouse had been married for at least 15 years. Spouses married for 10–15 years are entitled to reduced benefits. Benefits are reduced by 0.5 percent a month for each month short of 15 years of marriage. Disabled spouses are entitled to survivor benefits regardless of age, provided the spouse was married for at least one year. If the deceased died as a result of a work-related accident, occupational disease, or tuberculosis, spouses are entitled to survivor benefits, regardless of age or the number of years of marriage, provided that the spouse's earnings are subject to mandatory insurance coverage and represent less than 25 percent of the average gross wage.

Table 7.5 Eligibility Conditions for and Benefits Provided by Disability Pensions in Romania under the First-Pillar Earnings-Related Scheme

<i>Vesting period</i>	<i>Contribution rate</i>	<i>Eligibility</i>	<i>Benefit rate</i>	<i>Partial pension</i>
Under age 25: 5 years	No specific contribution rate for disability benefits	At least 50 percent loss in capacity to work	Calculated on the basis of number of points	Depending on degree of disability, pensioners receive 0.75, 0.60, or 0.40 points per year
Age 25–31: 8 years				
Age 31–37: 11 years				
Age 37–43: 14 years				
Age 43–49: 18 years				
Age 49–55: 22 years				
Over age 55: 25 years				

Source: European Commission 2007.

Table 7.6 Eligibility Conditions for and Benefits Provided by Survivor Pensions under Romania's First-Pillar Earnings-Related Scheme

<i>Eligibility</i>	<i>Spouse replacement rate</i>	<i>Benefit duration</i>	<i>Remarriage test</i>	<i>Orphan age limit</i>	<i>Orphan replacement rate</i>	<i>Total family benefit</i>
Eligibility of deceased for an old-age or a disability pension	50 percent of deceased's pension if married for 15 years; 0.5 percent for each month less than 15 years up to a minimum of 10 years; 50 percent of deceased's pension if spouse is disabled and married for at least one year; 50 percent if spouse has children under age 7	For life, if spouse meets one of the first three spouse replacement rate conditions; until youngest child turns 7; or 6 months if none of spouse replacement rate conditions is met	No	16 (26 if orphan is student; for duration of disability if orphan becomes disabled while receiving survivor benefit)	50 percent if sole survivor	75 percent for two survivors; 100 percent for three or more survivors

Source: European Commission 2007.

For spouses who meet none of the three eligibility conditions specified in table 7.6, benefits are paid for six months or until the spouse's youngest child turns seven. Spouses who are eligible for a pension of their own may choose to receive their own pension or a survivor pension.

Orphans are entitled to survivor benefits until age 16 (26 if orphan is enrolled in school) or for the duration of their disability in cases in which the orphan becomes disabled while receiving a survivor benefit. The benefit replacement rate for orphans who have lost both parents is 75 percent.

Under the second pillar, if a participant dies before becoming eligible for a pension, his or her beneficiaries are entitled to the balance of his or her account. Beneficiaries who are not participating in a private pension fund can elect to receive a lump-sum payment or periodic payments for up to five years. Beneficiaries who are participating in a private pension fund can elect to have the deceased's account merged with their own.

Assessment of the Performance of Romania's Pension System

The World Bank has established four principles for evaluating public pension systems, which together should guide the process of pension reform (see Holzmann and Hinz 2005). Broadly speaking, these principles include the adequacy and security of benefits, the affordability of contributions, the sustainability of the system over time, and the robustness of the system in the face of demographic changes and macroeconomic shocks. This chapter focuses primarily on the adequacy of benefits and financial sustainability of the first-pillar earnings-related pension scheme. The remaining principles are mentioned only briefly. Adequacy is analyzed through the lens of net replacement rates. Financial sustainability is evaluated using projections of pension expenditure and revenues.

Benefit Adequacy

Replacement rates are a useful yardstick for measuring the adequacy of pension benefits, because they express benefits relative to preretirement earnings, thereby indicating the degree to which income is replaced when workers retire. Two variants are commonly used. Gross replacement rates compute income replacement as the ratio of benefits paid to pretax preretirement earnings. Net replacement rates compute income replacement as the ratio of benefits received (that is, after the payment of taxes and other levies, including contributions for social insurance) to posttax preretirement earnings. In general, net replacement rates are a more useful

measure of benefit adequacy, because they capture the degree to which actual take-home pay is replaced when workers retire.

The level of income replacement at retirement is not the only measure of benefit adequacy. For a full assessment of benefit adequacy, it is also important to determine how postretirement indexation rules will affect replacement rates during retirement. Pension benefits in retirement are expected to be indexed to inflation, so that their real value is maintained. In a growing economy with rising real wages, however, mere price indexation of pensions leads to a deterioration of the relative consumption position of the retirees. For this reason, some countries have introduced mixed indexation of pensions that use varying weights of inflation and wage growth in the indexation formula.

For an evaluation of the effect of indexation on replacement rates in Romania, the replacement rates are normalized to 100 and the assumptions for calculating the replacement rates are maintained (that is, inflation is 2.5 percent a year and real wage growth is 2 percent a year). The change in the replacement rate is measured in comparison with full wage indexation or the earnings of an active worker.

The results of this analysis indicate that the relative income position of a retiree would deteriorate by 5 percent after 10 years in retirement and by 13 percent after 35 years in retirement. This deterioration is much more modest than that of countries that use price indexation for adjusting retirement benefits. This is because Romania revalues existing pensions from the first pillar on the basis of changes in the point value, which maintains the value of pensions relative to the average wage. The evaluation of income replacement that follows considers replacement rates only at retirement; it does not take into account the impact of indexation policies on replacement rates during retirement.

Replacement rates are a function of the formula governing pension benefits; an individual's contribution history; and, in the case of net replacement rates, the rules of income tax, social security contributions, and other relevant levies. The benefit formula establishes the degree to which the system redistributes income across individuals of different levels of preretirement earnings. Progressive systems provide higher levels of income replacement to people with lower levels of preretirement income. In general, the degree to which a system is redistributive depends on the existence (and value) of flat transfers and minimum pension guarantees, the degree to which benefits are earnings related, and the existence of ceilings on earnings subject to contributions. An individual's contribution history can be characterized by his or her age of entry into

the labor force, contribution density, and decisions regarding the timing of retirement. To some degree, these three factors are influenced by the incentives embodied in the pension system. The tax and contribution system affects net replacement rates through the progressiveness of the income tax formula, which taxes (higher) income during a worker's active life more than it taxes (lower) pension benefits in retirement. In addition, social security levies (for pensions; unemployment; health care; and, at times, housing and family benefits) are typically reduced or eliminated altogether in retirement. These benefits are particularly important for low- to middle-income groups.

Benchmarks need to be established for the evaluation of the adequacy of the income replacement provided by the earnings-related pension schemes. Unfortunately, there is no consensus on what constitutes adequacy. According to one widely respected definition, pensions are adequate when they are sufficient to prevent poverty among the elderly and provide the vast majority of the population with a reliable mechanism for smoothing income over their lifetime. Even with a definition, however, establishing benchmarks is problematic, because attitudes vary across countries as a result of social and cultural perceptions. Moreover, benchmarks ignore the other factors that affect the welfare of the elderly—and that also vary across countries—including the existence and generosity of health insurance and long-term care, the cost of housing, the structure of traditional living arrangements, the presence of informal intrafamily or intergenerational sources of financial and nonfinancial support, and the availability and security of other mechanisms for people to save for their own retirement.

One reputable nine-country study (OECD 2001) observes that living standards are roughly comparable for people 10 years older than the normal retirement age and people 15 years younger than the normal retirement age when retirees have disposable income equal to roughly 80 percent of the disposable income of working-age people. In part, this is attributable to the fact that retirees have no work-related expenses (they do not have to commute or buy special clothing or uniforms, for example). This finding, however, does not imply that mandatory first-pillar pension schemes should actually target an 80 percent net replacement rate. To the contrary, in middle- and high-income countries, one can reasonably expect individuals to save for their own retirement—and the empirical evidence suggests that, in practice, they do so.⁸ There is also some evidence to suggest that the ratio between pre- and postretirement income is somewhat independent of the income replacement mandate of

the public pension system. Put simply, individuals tend to save more in countries with more modest mandates (and vice versa).

Because Romania has access to relatively well-developed financial markets, it would seem reasonable to expect middle- and higher-income workers to save enough to finance at least 25 percent, if not closer to 50 percent, of this 80 percent income replacement target. Given this, three benchmarks are provided: a 40 percent net replacement rate (which implies that individuals would be expected to save enough to finance half of the total income replacement target); a 60 percent net replacement rate (which implies that individuals would be expected to finance a quarter of the target); and an 80 percent net replacement rate (which implies that individuals, most of whom would be low-income earners, would not be expected to contribute anything toward the target).⁹ In the following analysis, these three benchmarks are used to evaluate the adequacy of benefits in Romania compared with the average net replacement rate observed in 53 countries around the world, the average net replacement rate observed in selected countries in Europe and Central Asia, and the poverty line in Romania.

For an estimation of gross and net replacement rates, two critical dimensions—earnings levels and contribution periods—are considered, with the help of the Analysis of Pension Entitlements across Countries (APEX) model.¹⁰ This model generates estimates for replacement rates under steady-state assumptions (that is, as if the rules of the reformed pension scheme had been in place over the entire active life of the individual). Because life expectancies at retirement are projected to increase over time—which will affect the benefits paid by defined-contribution pension schemes—a reference year must be chosen. The year 2040 is used here, because it provides a sufficiently long contribution period to approximate steady-state conditions.

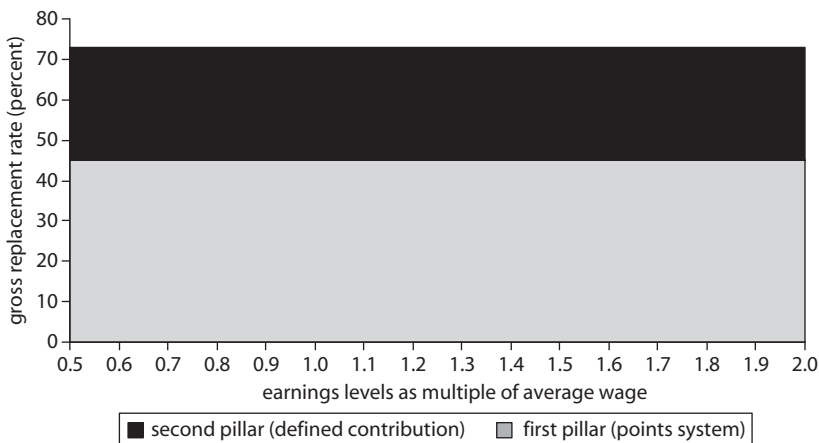
The first critical task is to investigate levels of income replacement across a relevant spectrum of income. Income is represented as a percentage (50–200 percent) of average earnings. The second task is to investigate the impact on income replacement of differences in the duration, timing, and density of an individual's contribution history (density refers to the percentage of time an individual actually contributes over a given period). To facilitate the presentation of these multidimensional results, we compute replacement rates as a function of the age at which an individual exits the labor market. They are presented separately for full-career and partial-career workers.

Replacement rates for full-career workers Full-career workers are examined first. For the purpose of this analysis, a full career is defined as continuous employment from age 20 to the normal retirement age of 65 for men (effective in 2015). Replacement rates are simulated for an unmarried man working a hypothetical career path under the assumption that real wage growth is 2 percent, inflation is 2.5 percent, the rate of return on invested assets is 3.5 percent, and the worker retires at the statutory retirement age.

Gross replacement rates clearly show why the earnings-related pension schemes have been described as providing a strong link between benefits and contributions (figure 7.1). Irrespective of income, gross replacement rates are 72.9 percent, of which 45.0 percentage points are provided by the first pillar and 27.9 percentage points are provided by the second pillar. The situation does not change significantly when taxes are taken into consideration (figure 7.2). As a result of the impact of taxes and contributions, net replacement rates vary somewhat by income.

Pensions for full-career workers in Romania can be considered adequate (figure 7.3). Replacement rates for all levels of preretirement income are substantially higher than the highest benchmark (and highest for middle-income workers), indicating that the pension system is smoothing consumption effectively from work into retirement. The objective of poverty alleviation is also being met, with levels of income replacement for full-career workers in Romania far higher than regional and world averages.¹¹

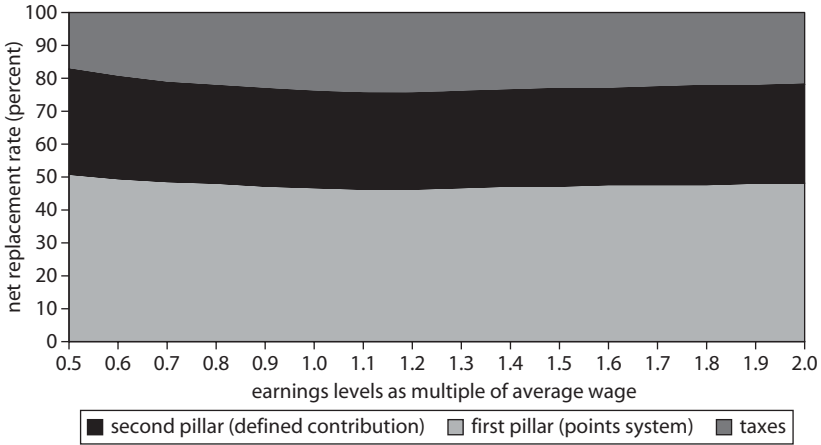
Figure 7.1 Gross Replacement Rates in Romania, by Income Level



Source: APEX model.

Note: Figure shows projected replacement rate for 2040 as approximation of steady-state conditions.

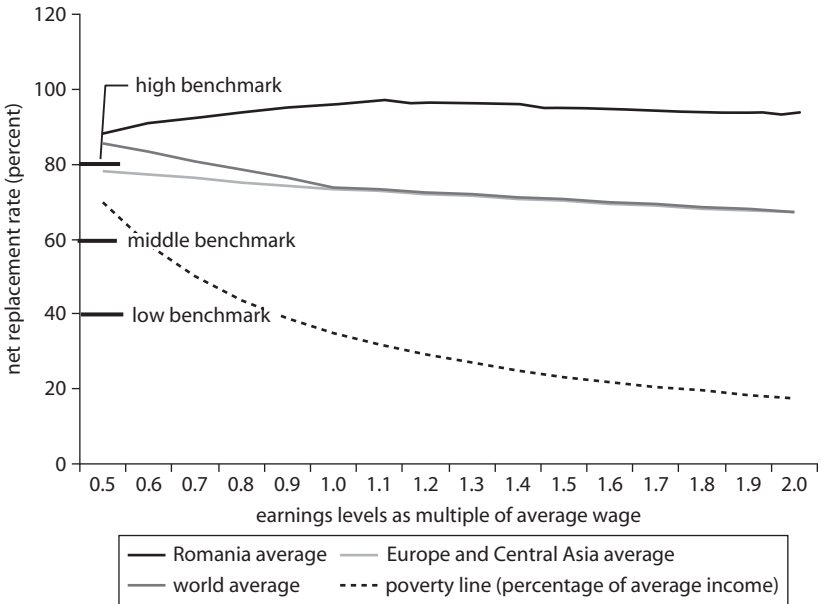
Figure 7.2 Sources of Net Replacement Rates in Romania, by Income Level



Source: APEX model.

Note: Figure shows projected replacement rate for 2040 as approximation of steady-state conditions.

Figure 7.3 Net Replacement Rates for Male Full-Career Workers in Romania, Europe and Central Asia, and the World



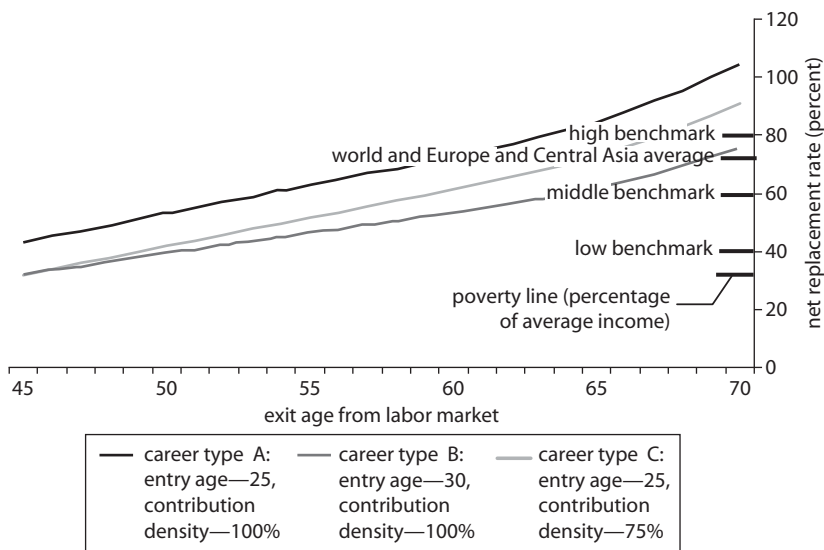
Source: Authors' calculations based on World Bank 2007a and the APEX model.

Note: Figure shows projected replacement rate for 2040 as approximation of steady-state conditions.

Replacement rates for partial-career workers. Not everyone works from age 20 to the statutory retirement age. Many individuals enter and exit the labor force (often at different ages and for different periods of time) and earn different wages while working (figure 7.4). To examine the adequacy of benefits for partial-career workers, we consider three stylized cases. These cases include career type A (someone entering the labor force at age 25 who works continuously for a period of years before leaving the workforce at some point between the ages of 50 and 70 and then claims a benefit); career type B (identical to career type A, except that the worker enters the workforce at age 30 and leaves no earlier than age 55); and career type C (identical to career type A, except that the individual contributes in only three years out of four while in the labor force). In cases where the withdrawal from the formal labor market occurs before the statutory retirement age, the pension is claimed (and the replacement rate calculated) only at the later age. For withdrawals after the statutory retirement age, the ages coincide.

Four conclusions can be drawn from examination of net replacement rates for middle-income partial-career workers.¹² First, almost all workers

Figure 7.4 Net Replacement Rates for Male Middle-Income Partial-Career Workers in Romania, by Career Type and Exit Age



Source: Authors' calculations based on World Bank 2007a and the APEX model.

Note: Figure shows projected replacement rate for 2040 as approximation of steady-state conditions. See text for descriptions of career types.

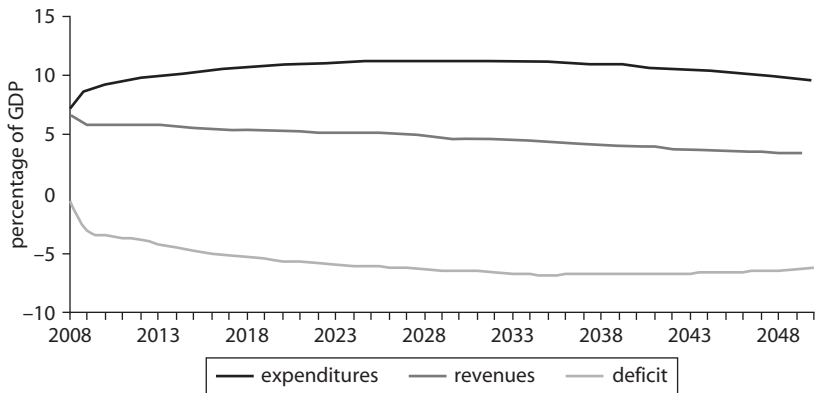
receive levels of income replacement higher than the poverty line. Second, leaving the workforce very early can be costly. Someone retiring long before reaching the retirement age will receive levels of income replacement barely higher (and, in some cases, lower) than the lowest of the three benchmarks. Third, entering the workforce later in life is costly. Someone entering the workforce at age 30 receives a net replacement rate that is 11–13 percentage points lower than someone entering the workforce at age 25. Fourth, working intermittently is costly. Someone entering the workforce at the same age but who contributes only three years out of four will receive a net replacement rate that is 11–29 percentage points lower than someone who contributes continuously. Although career type A workers can attain the 80 percent benchmark before reaching the normal retirement age, career type B workers must work three years beyond the normal retirement age in order to attain this benchmark. Career type C workers will not be able to attain the 80 percent benchmark even if they work until age 70.

Fiscal Sustainability

The sustainability of a pay-as-you-go first-pillar pension scheme is best evaluated in actuarial terms by estimating the scheme's actuarial deficit as the difference between its assets and liabilities. If a large actuarial deficit exists, the scheme is financially unsustainable and needs policy actions that increase its assets, reduce its liabilities, or both. A good proxy for the actuarial deficit is the difference between the present value of the scheme's expected future revenues (that is, contributions and other income) and expected future expenditures (that is, benefit payments, administrative costs, and other expenses) over an extended projection period. The difference between these two values represents an unfunded liability (sometimes referred to as a financing gap) on the public-sector balance sheet. Because this study is also concerned with the time path of revenues and expenditures (and the resulting balance across the projection period ending in 2050), this more pragmatic approach has been taken. Projections of expenditures, revenues, and deficits are presented on the basis of available postreform fiscal projections.

Despite (and, in part, because of) the government's reforms, the first-pillar scheme is projected to continue generating deficits, which are expected to grow for the next three decades relative to GDP before improving slightly (figure 7.5). Rising deficits are caused partly by the need to finance the transition to the second pillar. Revenues are projected to decline steadily, from 6.6 percent of GDP to 3.4 percent of GDP by 2050, as the number of contributors declines and an increasing share of

Figure 7.5 Projected Fiscal Balance of Romania's Public Pension System after Reform, 2008–50

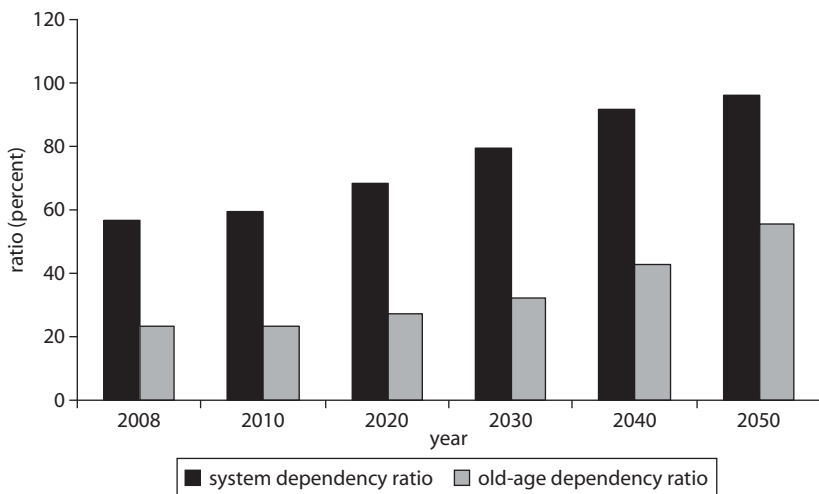


Source: Unpublished World Bank Pension Reform Options Simulation Toolkit (PROST) projections.

contributions is diverted from the first to the second pillar.¹³ Over the same period, expenditures are projected to increase from 7.2 percent of GDP in 2008 to 9.6 percent of GDP by 2050 as the number of beneficiaries increases and benefits are indexed to wages. The net result is a projected deficit of 6.2 percent of GDP in 2050.

These projected deficits are also driven by the aging of the population. Romania's old-age dependency ratio is projected to increase from 23.6 percent in 2008 to 55.3 percent by 2050 (figure 7.6). The aging of the population, in turn, will raise the system dependency ratio (the number of people receiving a pension divided by the number of people contributing to the pension scheme) from 56.9 percent in 2008 to 95.9 percent by 2050.¹⁴

What options exist for restoring the system to fiscal balance? Unfortunately, for policy makers, the options are limited. Revenues can be increased by increasing the contribution rate. Alternatively—or in addition, because the options are not exclusive—expenditures can be reduced by cutting benefits, increasing the minimum number of years required to become eligible for benefits, or delaying the payment of benefits by raising the retirement age further. Because raising the contribution rate could threaten competitiveness and will likely strengthen incentives for tax evasion, it is typically not embraced. Raising the contribution rate would also represent a reversal of policy because Romania has been deliberately reducing the rate to dampen the adverse impact of high taxes on labor markets. This leaves policy makers with limited

Figure 7.6 Projected Old-Age and System Dependency Ratios in Romania, 2008–50

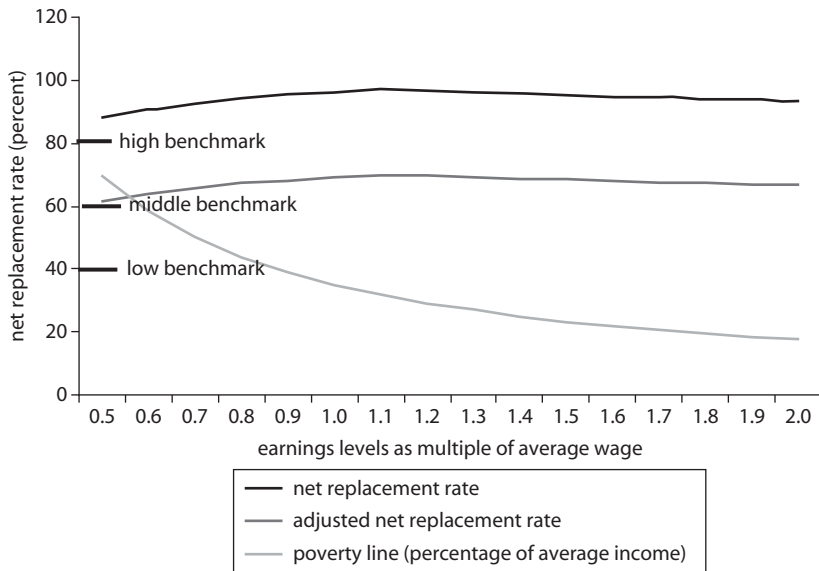
Sources: Unpublished World Bank Pension Reform Options Simulation Toolkit (PROST) projections; Reiterer 2008.

options: cutting benefits, tightening eligibility conditions, or raising the retirement age. Given that a major part of the deficit reflects the transition costs associated with the second pillar, the government may also consider financing part or all of these costs using general revenues. If it does otherwise, restoring sustainability may reduce the adequacy of benefits provided to future beneficiaries.

If retirement ages are left unchanged and the current structure of the system is retained, further cuts in benefits—on the order of a 59 percent reduction in the average benefit provided under the first pillar—will be required for the system to become sustainable (figure 7.7). If benefits are adjusted to maintain a similar fiscal balance in proportion to the overall size of the first-pillar scheme, full-career workers will receive replacement rates that are roughly 28 percentage points lower in 2050 than they are today.

Two conclusions can be drawn from comparing these new (lower) net replacement rates with the three benchmarks. First, a 59 percent reduction in first-pillar benefits would not cause income replacement for full-career workers to fall below the poverty line, except for those with very low incomes. This indicates that Romania's pension system would still broadly achieve its poverty alleviation objective. Second, the same reduction in benefits would still support the objective of smoothing

Figure 7.7 Net Replacement Rates for Male Workers in Romania before and after Benefit Adjustment



Source: Authors' calculations based on World Bank 2007a and the APEX model.

consumption for middle- and high-income full-career workers, because levels of income replacement are still equal to or higher than the middle 60 percent benchmark. Replacement rates for low-income workers, however, would fall substantially below the 80 percent benchmark.

This last observation is subject to three caveats. First, this analysis considers only full-career workers, while the average worker now contributes for only about 27–30 years, substantially less than the 45 years of a full career. Contributing to the pension scheme for only 35 years, for example, reduces net income replacement 23 percentage points for middle-income workers. This suggests that restoring the system to fiscal balance on the basis of benefit cuts alone may not provide many partial-career workers with adequate levels of income replacement. Second, if benefit cuts are combined with further increases in the retirement age, the benefit cuts will not need to be as steep to restore fiscal balance. Third, workers always have the option of saving outside of the first-pillar pension scheme. To increase income replacement by 1 percent, for example, a full-career worker would need to save only about 0.43 percent of his or her earnings from age 40 to the current age of retirement.¹⁵

Conclusions

Recognizing that a pension system that offers generous benefits, low retirement ages, and lax benefit eligibility conditions would not be sustainable over the long term as the population ages, Romania's government introduced substantial pension system reforms in 2000. These reforms raised retirement ages, extended the service period required to become eligible for a full pension, imposed new conditions on early retirement, and replaced the traditional defined-benefit formula with a new formula based on points. In 2006, the government also passed legislation to introduce a mandatory, fully funded, defined-contribution scheme, which became operational in May 2008.

The resulting gross and net replacement rates for full-career workers after reform are projected to be well above regional and world averages, especially for middle- and high-income workers (see chapter 1). Future net replacement rates for full-career workers are projected to be 88–97 percent across the analyzed income spectrum. The generosity of these initial replacement rates is enhanced by generous indexation policies, which will fully index first-pillar benefits to wages. As in other countries, workers with less than full careers—because they left the workforce before reaching retirement age, worked intermittently, or have gaps in their employment history—risk receiving a level of income replacement closer to the lower benchmark of 40 percent or possibly even lower.

Following reform, Romania's pension system is projected to generate ever-larger deficits relative to GDP for the next three decades before improving slightly to 6.2 percent of GDP by 2050. These deficits are driven by the aging of the population, as well as by the generous benefits in the reformed system (especially given recent large increases in benefits) and the transition costs associated with replacing part of the unfunded first-pillar scheme with a funded second-pillar scheme. Population aging by itself will reduce the number of contributors relative to the number of beneficiaries to such an extent that by 2050 the number of pension system beneficiaries will approach the number of contributors. The lower retirement age applied to women, in combination with their longer life expectancy, greatly increases their lifetime benefit costs relative to their contributions.

To restore long-term fiscal balance to the first-pillar scheme without recourse to general revenue financing, the government needs to raise retirement ages further—rough estimates suggest to well above age 70 by 2050. To realize the full fiscal impact of this measure, the government

must maintain income replacement at levels associated with current retirement ages. Increasing the retirement age in step with increases in life expectancy at retirement is a natural choice, for both individuals and for policy makers, but it requires cross-sectoral policy reforms to enable elderly workers to continue to participate in the labor market.¹⁶

Other options for restoring fiscal balance including cutting first-pillar benefits at retirement, reducing the generosity of benefit indexation, or adopting some combination of the two. Rough estimates suggest that average first-pillar replacement rates would have to fall by about 28 percentage points. Moving from wage to price indexation would reduce average first-pillar benefits by some 25 percentage points. Reducing benefits by this amount would not compromise the objective of alleviating poverty among the elderly, because levels of income replacement would still not fall anywhere near the poverty line. Doing so may, however, compromise the objective of smoothing lifetime consumption for full-career workers of all income levels when measured against the highest of the three benchmarks examined here. Individuals who wish to defer more of their lifetime consumption into retirement would still have the option, of course, of participating in the voluntary third-pillar pension scheme.

Notes

1. The required contribution rate under the old system would have needed to be increased from 25.5 percent to 50 percent in the long term for the system to provide the same level of benefits provided now (World Bank 1998).
2. For more information regarding these population projections, see Reiterer (2008).
3. In 2007, the average number of points of existing pensioners was 1.38.
4. As a percentage of the gross average wage, the point value was about 31.0 percent in 2006, 37.5 percent in 2007, and 37.5 percent in 2008; it will rise to 45 percent in 2009. Existing pensions are revalued on the basis of changes in the point value by multiplying an individual's average points by the new point value. The increase in the point value over the past few years resulted in pensions rising faster than wages, because the point value, as a share of the average wage, increased from 30 percent to 45 percent (in 2009)—an increase of 50 percent.
5. In 2007, life expectancy at retirement age was 13.6 years for men and 20.9 years for women. These values are projected to increase to 16.0 years for men and 24.4 years for women by 2050. Lengthening life expectancy will substantially increase the average period over which benefits are paid. Many

pension systems worldwide are designed to provide individuals with 15 years of benefits in retirement (Schwarz 2006).

6. The law does not specify by how much first-pillar benefits will be reduced when contributions are made to the funded second-pillar scheme. This study assumes that the reduction will be proportional to the reduced share of contributions flowing to the first pillar.
7. The second-pillar pension scheme will eventually provide these benefits as well; many of the provisions governing the payment of benefits have yet to be determined.
8. In Chile, for instance, 70 percent of retirees from the mandatory public pension system own their home, which is a form of savings (Valdés-Prieto 2008).
9. These benchmarks approximate the standards developed by the International Labour Organization (ILO) (1952) and the Council of Europe (1990). ILO Convention 102 of 1952 sets a minimum benefit equal to 40 percent of the reference wage for married men of pensionable age. This amount was raised to 45 percent in 1968. The European Code of Security of 1990 sets a minimum standard for members of the Council of Europe equal to 65 percent for married people of a specific age.
10. The APEX model was developed by Axia Economics, with funding from the Organisation for Economic Co-operation and Development and the World Bank. The model codes detailed eligibility and benefit rules for first- and second-pillar schemes based on available public information that has been verified by country contacts. Because the details of the rules sometimes change on short notice (and limited public disclosure), the calculations presented here should be considered as best approximations only.
11. As a proxy for the poverty line, a figure of 35 percent of the average net wage is used, because this percentage broadly approximates a US\$2.25-a-day poverty line converted into national currency, adjusted for purchasing power parity, expressed relative to the national average net wage, and averaged across the eight study countries.
12. Only middle-income, partial-career workers are examined because replacement rates are comparable for workers with lower and higher levels of pre-retirement income.
13. Projections reflect the 1.5 percentage point decrease in the contribution rate planned by the government as well as the diverting of contribution revenues to the second pillar.
14. Over the same period, the population is projected to decrease from 21.5 million to 17.1 million (Reiterer 2008).
15. This estimate is based on the assumption that real wage growth is 2.0 percent, the net real rate of return on invested assets is 3.5 percent, and benefits (from both the unfunded and the funded pillars) are price indexed.

16. See Holzmann, MacKellar, and Repansek (2009) for a conference volume that addresses these issues for the countries of southeastern Europe.

Bibliography

- Council of Europe. 1990. *European Code of Social Security (Revised)*. Rome.
- European Commission. 2007. Mutual Information System and Social Protection (MISSOC) database. http://ec.europa.eu/employment_social/.
- GVG (Gesellschaft für Versicherungswissenschaft und -gestaltung) and European Commission. 2003. *Study on the Social Protection Systems in the 13 Applicant Countries: Romania Country Report*. Cologne.
- Holzmann, R., and R. Hinz. 2005. *Old-Age Income Support in the 21st Century*. Washington, DC: World Bank.
- Holzmann, R., L. MacKellar, and J. Repansek, eds. 2009. *Pension Reform in South-eastern Europe: Linking to Labor and Financial Market Reforms*. Washington, DC: World Bank.
- ILO (International Labour Organisation). 1952. *ILO Convention 102*. Geneva: ILO.
- . 1967. *ILO Convention 128*. Geneva: ILO.
- OECD (Organisation for Economic Co-operation and Development). n.d. Database. <http://www.oecd.org/dataoecd/13/30/38708660.pdf>.
- . 2001. *Ageing and Income: Financial Resources and Retirement in 9 OECD Countries*. OECD: Paris.
- Reiterer, A. 2008. *Population Development and Age Structure in Southeastern Europe until 2050*. World Bank, Washington, DC.
- Schwarz, A. 2006. Background paper for *Public Expenditure Review: Overview of Pension Sector in Serbia*. World Bank, Washington, DC.
- U.S. Social Security Administration. 2006 *Social Security Systems throughout the World: Europe*. Washington, DC: Social Security Administration.
- Valdés-Prieto, S. 2008. *Designs for the First Pillar Pensions and the 2008 Chilean Reform*. http://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=SECHI2008&paper_id=130.
- Whitehouse, E. 1999. *Tax Treatment of Funded Pensions*. Washington, DC: World Bank.
- World Bank. 1998. *Romania: Pension Reform Note*. Washington, DC: World Bank.
- . 2003. *Romania Poverty Assessment*. Washington, DC: World Bank.
- . 2004. *The Pension System in Romania: Challenges of Pursuing an Integrated Reform Strategy*. Washington, DC: World Bank.
- . 2006. Background paper for the Romania Poverty Assessment. World Bank, Washington, DC.

- . 2007a. *Pensions Panorama*. Washington, DC: World Bank.
- . 2007b. Background paper for the *Romania Poverty Monitoring Analytical and Advisory Assistance Program*. World Bank, Washington, DC.
- WHO (World Health Organization). 2000. *Healthcare Systems in Transition: Romania*. Copenhagen: WHO.
- . 2008. Database. <http://www.who.int/research/en/>.