

**Development Research Group  
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**THE SWISS  
MULTI-PILLAR PENSION SYSTEM:  
TRIUMPH OF COMMON SENSE?**

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Switzerland is the first country to have publicly articulated the benefits of a multi-pillar approach to pensions and the first OECD country to have imposed a mandate on employers to provide occupational pension plans for their employees. Not surprisingly, the Swiss system has many unique and attractive features.

The views expressed in this paper are entirely those of the authors. They do not reflect the views of the Organization of Economic Cooperation and Development or the World Bank, their Executive Directors, or the countries they represent.

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## **Abstract**

This paper provides a detailed study of the Swiss multi-pillar pension system, analyzing its strengths and weaknesses.

The unfunded public pillar is highly redistributive. It has near universal coverage, a low dispersion of benefits (the maximum public pension is twice the minimum), and no ceiling on contributions. Low-income pensioners receive means-tested supplementary benefits. Payroll taxes are low, but government transfers cover 27 percent of total benefits. Total benefits amount to 9.1 percent of GDP, equivalent to 15.2 percent of covered earnings.

The funded private pillar was made compulsory in a defensive move against the relentless expansion of the public pillar. The compulsory pillar stipulates minimum benefits in the form of age-related credits, a minimum interest rate on accumulated credits, and a minimum annuity conversion factor, aimed to smooth changes in interest rates over time. Low-income workers are not required to participate in the second pillar. The first and second pillars as well as supplementary benefits are admirably integrated.

Company pension plans are totally free to set terms and conditions in excess of these minimums and most offer super-obligatory benefits. The second pillar has accumulated large financial resources, equivalent to 125 percent of GDP. Investment returns have historically been low, but a shift in asset allocation in favor of equities and international assets has increased reported returns in recent years.

The third—voluntary—pillar covers self-employed workers and others not covered by the second pillar. It plays a rather small role in the system.

Many of the positive features of the Swiss pension system are not due to some grand original design but are rather the result of periodic revisions. In large part, they reflect the collective common sense of the Swiss people in voting for stable and fiscally prudent social benefits. However, the Swiss system also has some weaknesses. In common with many other countries, the public pillar faces a deteriorating system dependency ratio, due to demographic aging and a large increase in disability pensions. The second pillar is fragmented (more than 4,000 funds with affiliates), lacks transparency, and has achieved low investment returns.

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# I. INTRODUCTION AND MAIN FINDINGS

## 1.1 Introduction

This paper<sup>1</sup> is motivated by three basic questions. What accounts for the “excellent” design of the unfunded public pillar of the Swiss pension system? Being a thrifty nation, why did the Swiss people vote in a 1972 referendum for a mandatory funded private pillar? And having established such a pillar, why has the real rate of return been so low?<sup>2</sup>

To answer these three questions it is necessary to address two supplementary ones: What are the main features of the first pillar that could justify its characterization as “excellent”? And what are the main features of the second pillar that could explain its relative underperformance?

Answering these five questions is not an easy task. As in most other countries, the Swiss pension system is highly complex and has myriads of detailed provisions that are difficult to summarize, let alone evaluate. The system has been evolving over time and evaluating its performance is like aiming at a moving target. Moreover, the lack of transparency of some aspects of the second pillar increases the difficulty of this exercise. However, using the information that is available and contrasting the Swiss experience with that of other countries, this paper makes an attempt at answering these five questions and in the process offering an analytical overview of the Swiss pension system.

The structure of the paper is as follows. The remainder of the introduction provides a brief historical perspective, a summary of main findings, and an overall assessment. Chapter II offers a more detailed discussion of the main features of the unfunded public pillar, Chapter III covers the funded private pillar and Chapter IV reviews the voluntary third pillar. Annex I documents briefly the historical evolution of the Swiss pension system and Annex II contains all the statistical tables.

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<sup>2</sup> Some Swiss experts maintain that the design of the public pillar is not excellent, while the real returns of the funded private pillar are not very low. While all pension systems have shortcomings, the Swiss system has fewer weaknesses than those of most other countries. Regarding investment returns, some large pension funds seem to earn high returns, that are comparable to those reported by Anglo-American funds, but for the whole of the sector, most international surveys show much lower returns for Swiss pension funds.

## 1.2 Historical Perspective

Like most OECD countries, Switzerland has a multi-pillar pension system. It comprises an unfunded and highly redistributive public pillar, a funded occupational pillar, and a pillar based on personal savings. The first two are compulsory and the third voluntary<sup>3</sup>. The three pension pillars have many interesting features that support and reinforce each other and make for a very coherent whole. But the Swiss system also has a number of important weaknesses.

Switzerland is the first country that articulated publicly the benefits of a multi-pillar pension system in a 1963 report accompanying the sixth revision of the old age and survivors pension system<sup>4</sup>. Switzerland also was the first OECD country to introduce a mandatory funded but privately managed second pillar.

The national (federal) public pillar for old age and survivor pensions was introduced in 1948. It absorbed pre-existing cantonal systems, the first of which was established in 1904 (Helbling 1991:27). Disability pensions were offered in 1960. The occupational pillar, which became compulsory in 1985, also built on pre-existing voluntary occupational plans. Such plans covered 40 percent of the labor force in 1970. The assets of occupational pension funds already amounted to 31% of GDP in 1942, 40% in 1970 and as high as 65% in 1984 (Helbling 1991:28). The second pillar is in fact a mixed compulsory/voluntary pillar as most of the large employers offer benefits that go well beyond the prescribed minimal requirements. The voluntary third pillar covers the self-employed workers, dependent workers who are not covered by the second pillar, and additional retirement savings made by employees who are already covered by the second pillar.

In both compulsory pillars, there was considerable delay between the acceptance of constitutional amendments and enactment of implementing legislation. The first pillar took 22 years to implement, following the passing of a constitutional amendment in December 1925 and introduction of the federal public pillar in January 1948<sup>5</sup>. The long delay was caused by the intervening economic depression and Second World War, but it may also reflect the cautious attitude of the Swiss people and their concern for sound financing (Charles 1993:13).

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<sup>3</sup> In reality, the Swiss system has six components: the public pillar is supported by the offer of noncontributory supplementary benefits; the private pillar can be divided into the legally required benefits and the super-obligatory benefits, which continue to play a large part in the private pillar; and the third pillar comprises “tied individual retirement savings” that benefit from tax incentives and other personal savings.

<sup>4</sup> The approach was publicized in the Lausanne Fair of 1964 with the graphical presentation of a house with three more or less equal pillars (Helbling 1991:23).

<sup>5</sup> Annex I offers a more detailed but brief discussion of the historical evolution of the first and second pillars.



Many of the most positive features of the public pillar that characterize its current design, such as the low dispersion between maximum and minimum pensions, the proportionality rule, the extensive government co-financing, the offer of supplementary pensions, the “Swiss” indexation of pension benefits, and the splitting of pension benefits between spouses, were not present when the system was first introduced. These features were added in subsequent revisions of the system.

The structure of the first pillar is not therefore the result of some grand original design but rather a collective response to new challenges and issues. As most changes must be approved in a referendum vote, policymakers are forced to adopt measures that can win the support of the majority of Swiss people. In a very real sense one can argue that the excellent design of the first pillar is due to the common sense of the Swiss people in voting for stable and viable benefits that satisfy the strongly felt need for solidarity, while maintaining fiscal prudence.

Swiss social security experts emphasize the concept of total solidarity on which the first pillar is based. This covers solidarity between the generations, income groups, sexes, single and married people, regions, and urban and rural areas (Charles 1993:13-14). The main features and principles of the first pillar as a social insurance scheme based on this concept of intergenerational and social solidarity have remained unchanged, even though various refinements have been introduced over the years.

The referendum making compulsory the second pillar was passed in December 1972, but the new compulsory private pillar was not introduced until January 1985. The economic problems caused by the oil crisis of the early 1970s were primarily responsible for the 12-year delay, but uncertainty and debate about the exact nature of the mandate and the typical concern for introducing a sound system also were contributing factors.

An important aspect of the “collective common sense” that underpins the Swiss pension system is provided by the brief history behind the adoption of the mandatory second pillar. The first attempt to make the second pillar compulsory was rejected in 1968. But when faced with an alternative proposal to nationalize all existing occupational pension plans and expand the public pillar in 1972, Swiss voters opted for making the second pillar compulsory. As discussed in Helbling (1991:29), the 1972 vote was effectively a defensive measure against a relentless expansion of the public pillar<sup>6</sup>. This probably explains why there was little concern about the long delay in implementing the constitutional amendment. The referendum vote did not cover any of the details of the minimum legal requirements in designing the second pillar.

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<sup>6</sup> It is important to note that at that time neighboring countries (Austria, France, Germany and Italy) were in the process of implementing large expansions of their public pillars.

### 1.3 Main Findings: First Pillar

#### Coverage

- **The public pillar has achieved near universal coverage.** Since 1997, all residents, including non-working persons, are required to contribute regardless of their employment status. **In 1998, 3.8 million people contributed to the first pillar**, out of a total economically active population of 4.3 million people.

#### Benefits

- **Pension benefits are modest and are characterized by low dispersion.** The maximum public pension is about 40 percent of average earnings, while the minimum pension amounts to about 20 percent.
- **A progressive benefit formula that is resistant to strategic manipulation is used.** Recent changes in the benefit formula, coupled with the use of supplementary benefits, suggest a gradual move toward “flat” benefits.
- **Normal retirement ages at 65 for men and 62 for women are reasonable** (that of women is scheduled to rise gradually to 64 by 2001), while **early retirement is discouraged**.
- **Disability pensions have increased much faster than old age pensions.** In the early and mid-1990s, this reflected the use of disability pensions for dealing with the growing unemployment of older workers in declining industries. Disability pensions convert to old age pensions on reaching the normal retirement age.
- Low-income earners and disabled workers have a high replacement rate from the public pillar. But because minimum pensions are below the official poverty line, **means-tested supplementary benefits are provided to those with total incomes below the poverty line**.
- **Pension benefits (and lifetime earnings) are linked to “Swiss” indexation**, i.e. the average of price and wage inflation, an inventive compromise between full inflation protection and full participation in the fruits of economic growth.
- **The public pension system is highly redistributive.** There are no ceilings on contributions, while there is a maximum benefit that amounts to twice the minimum pension. The functioning of such a pillar depends on compliance and a widespread sense of solidarity since the link between contributions and benefits is very weak.
- **The first pillar has over the years introduced significant benefit innovations**, although some may be more expensive than others. The most recent include bonus credits for child rearing and assisted living as well as the splitting of pension benefits between spouses.
- **The overall System Dependency Ratio (the number of beneficiaries to contributors) exceeds by a large margin the (Old Age) Demographic Dependency Ratio (the number of old age people to those of economically active age).** But

excluding disability and survivor pensions, the discrepancy is only about 2 percentage points.

## **Financing**

- **Despite the modest level of benefits, total annual expenditure has been growing.** Old age and survivor benefits absorbed 7 per cent of GDP in 1998, up from 3.3 percent in 1970. Disability pensions cost an additional 2.1 percent, for a **total cost of 9.1 percent of GDP**, up from a total of 4 percent in 1970.
- With covered earnings amounting to 60 percent of GDP, **the cost rate of the first pillar is about 15.2 percent of earnings.**
- The contribution rates levied on employers and workers amount to 8.4 percent for old age and survivors pensions and 1.4 percent for disability pensions. The total payroll taxes of 9.8 percent are equally divided between employers and workers.
- **The low payroll taxes cause fewer distortions in the labor market**, but they are potentially misleading because they overlook the substantial subsidies paid by government.
- Government co-financing covers by design 20 percent of the cost of old age and survivor pensions and 50 percent of disability pensions. **Total government co-financing amounts to 27 percent of benefits. This corresponds to 2.4 percent of GDP or 4 percent of covered earnings.** Investment income on the reserve fund (0.5 percent of covered earnings) and the annual deficit (0.9 percent of covered earnings) make up the difference.
- **The cost of disability insurance in Switzerland - as measured by the total contribution rate plus government transfers – amounts to a very high 3.5 percent of covered earnings.** This is expensive by comparison to countries that have privatized the offer of disability insurance. The high cost probably reflects the greater maturity of the Swiss system, the older age of Swiss workers, and the use of disability pensions instead of unemployment benefits. Disability insurance is shared with the private pillar, which makes even more puzzling its high cost rate.

## **Future Prospects**

- **The Swiss public pillar faces growing financial pressures because of the aging of the population.** But due to its relatively low expenditure and redistributive nature and the existence of a robust and well funded private pillar, the Swiss pension system is better prepared to face the challenges of an aging population than most other OECD countries.
- Although reliance on government financing was part of the original design of the public pillar, **the growing transfers may generate pressures for significant changes in the structure of the system.**
- **There is a pressing need to address disability insurance, the cost of which appears to be very high.**
- **There is a gradual trend toward “flat” benefits.** Pressure to replace the progressive formula with some kind of means-tested flat benefits is likely to grow.

## 1.4 Main Findings: Second Pillar

### Coverage

- **Participation is compulsory for all workers in dependent employment whose annual income exceeds a minimum level.** Enrollment starts at age 17 for death and disability benefits and at age 24 for retirement benefits. Compulsory coverage ends at termination of employment, at retirement, or when the income of the insured worker falls below the minimum threshold.
- Retirement ages are currently set at 65 years for men and 62 years for women. Early retirement is possible according to the statutes and regulations of the individual pension funds.
- Self-employed people, unemployed and disabled workers, and workers on short-term contracts are not required to participate.
- **The second pillar covers 3.1 million workers.** Allowing for some double counting, only about 74 percent of the labor force is covered., although the proportion of “eligible” workers that is covered is probably close to 90 percent.
- **The second pillar is based on the concept of “coordinated” earnings.** These are defined as earnings between one and three times the maximum pension from the public pillar, i.e. between 40 and 120 percent of average earnings. This is the minimum definition of “coordinated “ earnings. Pension plans may specify a higher basis, either by using a lower or even no threshold and/or by applying a higher or no ceiling.
- The use of the concept of “coordinated earnings” allows for an admirable integration of the two pillars.
- **Uninsured “eligible” workers are covered by the Suppletory Fund.** This is financed by the Guarantee Fund (see below).

### Pension Plan Design

- **Second-pillar pension plans must satisfy the minimum legal requirements but boards of trustees are free to set their terms and conditions**, covering such features as the level and nature of benefits, the rate of contribution, vesting and portability rights, etc.
- **Boards of trustees are also free in their choice of plan type**, i.e. defined-contribution (DC) or defined-benefit (DB) plans. DC plans provide benefits based on the contributions made by and on behalf of the individual member with the interest accrued over the contribution period. DB plans provide retirement benefits, which are defined as a percentage of previous earnings, e.g. final pay, final average, or career average earnings.
- The minimum conditions specified in the law take the form of **defined credits**<sup>7</sup>. These include minimum age-related credits for contributions as well as minimum credits for

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<sup>7</sup> This is noted in Smalhout (1996:244).

investment income. The law also specifies a **minimum annuity conversion factor**. Pension plans are required to maintain **notional individual retirement (aging) accounts and must guarantee an annual nominal rate of return of 4 percent**.

- The minimum conditions aim to achieve a 30 to 35 percent replacement rate that together with the public pension would result in an overall replacement rate of 60 to 70 percent for workers with average earnings.
- **The retirement benefits provided by the second pillar depend on the design of individual pension plans.** In general, benefits are paid in the form of pensions. Lump sums payments are allowed for very low amounts of retirement capital, for the purchase of housing, when workers become self-employed and when they permanently leave Switzerland. Lump sum payments may also be authorized, provided a request is made at least three years before retirement.
- **The law does not specify a uniform or even a minimum contribution rate** but requires that employer contributions are at least equal to those of employees. Employer contributions have accounted for 63 percent of total contributions.
- **Insured workers have no choice of fund.** They have to join the pension institution established or selected by their employers. However, when they change employment they may leave their accumulated capital with the pension fund of the company from which they are leaving, provided their employer agrees. Workers may thus belong to several funds, only one of which can be active.
- **The compulsory system also requires the provision of disability and survivors' pensions.** As accumulated balances that have been converted into an annuity are not inheritable, pensions are also paid to dependent children of retired workers.
- **The benefits of the second pillar are not linked to “Swiss” indexation.** Adjustment to increases in the cost of living is mandatory every 3 years for disability and survivor pensions. Old age pensions, however, are adjusted at the discretion of the individual pension funds according to their financial situation.

### **Regulatory Framework**

- **A robust regulatory framework governs the operations of pension funds.** This requires the establishment of pension funds as separate legal entities (most are established as foundations), independent fund governance based on joint administration with equal representation, asset segregation, internal controls and safe custody<sup>8</sup>, and appointment of independent auditors and pension experts.
- **No minimum funding requirement is imposed but pension funds must be able to meet their financial obligations.** The law requires that pension fund assets are managed prudently to ensure the security of assets, achieve a reasonable return on investments,

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<sup>8</sup> The segregation of assets and safe custody seems to be based on a simplistic view that involves the mere use of separate safes for the safekeeping of securities.

maintain a suitable diversification of risks, and allow for the liquidity requirements of the plan.

- **Vesting and portability rules are set by the terms and conditions of pension plans.** However, there are minimum legal requirements that aim to protect the interests of workers. Since 1995, these also cover super-obligatory benefits.
- **Investment regulations impose quantitative restrictions on the allocation of assets,** but investment policies have also been shaped by valuation and accounting rules. These various rules have discouraged investments in equities, although investment policies have become more equity and internationally oriented in recent years. A very recent change has placed strong emphasis on prudent asset and liability management and has expanded the scope for investments in private equity and other assets by funds that demonstrate professional management. Thus, although quantitative limits are still applied, the “prudent expert” approach seems to be gaining acceptance.
- **The second pillar pension schemes are insured through a government-created but privately-managed Guarantee Fund.** This fund provides subsidies to individual funds with an unfavorable age structure as well as transfers to compensate for insolvency of pension funds. The Fund also covers the expenses of the Suppletory Institution and will support individual funds that face financial difficulties because of the new stricter rules on vesting and portability.

### **Institutional Structure**

- **The second pillar is fragmented.** In 1996, it had about 11,600 institutions of which only 4,300 had affiliates. **Despite the large number of funds, concentration is high.** 100 large funds represent close to 70 percent of affiliates. Nearly 60 percent of funds with affiliates have less than 100 members each, while 87 percent of funds have less than 500 members each.
- **80 percent of pension funds with members, covering 70 percent of affiliates, operate defined-contribution (DC) plans.** 18 percent of pension funds offer defined-benefit (DB) plans for 29 percent of affiliates. Most DC plans operate in practice as hybrid plans crediting investment income at 4 percent or higher rate and placing any excess income in special reserves, but aiming to achieve targeted replacement rates.
- **The conversion of DB into DC plans is continuing** with the pension fund of the Federal Government and the Canton and City of Zurich being the latest to announce their conversion to a DC plan for all new employees.
- **Employers have a number of administrative choices for their company pension plans:** operation as a single-employer entity or participation in multi-employer funds, which are again subdivided into four types:
  - collective funds, organized by insurance companies, banks or fiduciary institutions and offering the benefits of collective administration, while maintaining separate accounts as well as separate rules and conditions for the occupational pension schemes of participating employers;

- professional association funds, open to association members and generally operating one scheme with similar rules, conditions, and accounts for all participating employers;
- multi-employer funds for public sector entities, created for employees of public sector entities; and
- conglomerate group funds, set up for the companies of particular groups.
- **Large employers operate self-insured plans, but smaller companies usually affiliate their employees with insured funds.** These are established as collective or pooled foundations by life insurance companies. They involve the contracting out of full insurance coverage for old age, disability and survivorship benefits. The premiums payable to life insurance companies have to be submitted to and approved by the Federal Office of Private Insurance. Until 1996, the premium was the same for all companies and life insurance companies competed only through the level of dividends and quality of services for their member funds. Today, there is wide range of fees and conditions from which the funds can choose.

### Financial Performance

- **Annual contributions amounted in 1997 to 6.5 percent of GDP or 11 percent of earnings covered by the first pillar.**
- The number of second pillar beneficiaries rose from 0.22 million in 1970 to 0.67 million in 1997. **The ratio of beneficiaries to contributors is 22 percent, while about 30 percent of old age people receive a second-pillar pension.** Annual benefits amounted to 4.4 percent of GDP in 1997.
- The total assets of pension funds amounted in 1997 to CHF 379 billion or 102 percent of GDP. This total does not include CHF 85 billion (23 percent of GDP) of pension fund assets that are managed by insurance companies. **Total assets equaled in 1997 CHF 464 billion (125 percent of GDP)**<sup>9</sup>. Total pension reserves, excluding debt obligations of pension funds, probably amount to CHF 425 billion.
- **The funds invested in 1996 21 percent in equities, up from 8 percent in 1987, and 14 percent in real estate.** The largest category was represented by debt instruments, including bonds, loans, mortgages and deposits, at nearly 65 percent of the total, but down from 75 percent in 1987. **Foreign assets accounted for 19 percent of assets.**
- **Claims on sponsoring employers, including equity investments and loans, accounted in 1996 for 12.7 percent of total assets,** down from 16.6 percent in 1987 and 33 percent in 1970.
- **There is a large dispersion in asset allocation and investment returns between different types of funds.** In 1996, public sector pension funds still invested 31 percent of their assets in loans to employers, down from 60 percent in the mid-1980s. They probably

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<sup>9</sup> Adding the other assets of insurance companies and mutual funds, the total assets of Swiss institutional investors exceed 200 percent of GDP. Only 3 other countries (the Netherlands, the United Kingdom and the United States) have achieved a similar level of institutional investor assets.

also invested much less in equities or foreign assets. At the other end of the spectrum, some large funds invest well over 40 percent in equities and more than 5 percent in private equity.

- **Investment returns have been low. These are probably the result of conservative investment policies and asset valuation rules that discourage investments in equities.** There are quantitative limits on equity and foreign investments but these are not binding in the aggregate. The low real returns on Swiss bonds, which reflect official policy in favor of low real interest rates, have also been a factor.
- **Another reason for the low returns may have been the use of the 4 percent minimum rate of return as a benchmark by most fund managers.**
- **Swiss workers have not voiced much concern about the low returns.** For low-income workers, this may be because the pension from the private pillar is of marginal relevance. For middle to high-income workers, it may be because they participate either in defined-benefit plans or in defined-contribution plans that receive high contributions from employers.
- **Returns have risen recently because of changes in asset allocation and improved performance of both Swiss equities and bonds. Some large pension funds report returns that are similar to those achieved by large funds in Anglo-American countries.**
- **Reported operating costs at less than 7 percent of contributions or 0.5 percent of assets are low, but they may understate the true level of costs as various costs are absorbed by sponsoring employers.**

### Supervision

- **Supervision is fragmented and institutionally weak,** although professional auditors and pension experts are required to report to the regulators any infractions of rules.
- **Information disclosure is poor and lack of transparency is a problem.** It may have contributed to the lack of concern about investment returns.
- **The Guarantee Fund has been faced with increasing outlays** because of fund insolvencies. The vast majority of these cases were due to bankruptcy of the sponsoring company and not a consequence of bad fund management. (Nussbaum 1999) The fee to the Guarantee Fund has been raised from 0.04 percent in 1990 to 0.1 percent in 1998.

### Future Prospects

- **The large number of small institutions makes supervision and transparency difficult without offering any real benefits to workers.** This is one of the major weaknesses of employer-based schemes, that is made worse by the captivity of workers, who do not have the right to switch funds (except when they change employers) and can exert little direct influence on the efficiency and performance of the funds. A consolidation trend may be set in train.
- **Another major weakness is the use of a uniform type of annuity.** This is shared by most public and private compulsory pillars. It forces all retiring workers to purchase the



same type of annuity, irrespective of their individual circumstances and needs. Demand for greater choice may increase.

- **There is growing pressure for the achievement of higher returns and for giving employees greater choice in selecting pension funds and directing their investments.** Many large funds are considering the pros and cons of adopting more flexible structures.
- **Investment regulations are likely to be substantially relaxed with a more general move toward adoption of the “prudent expert” rule.** Over the years the pension funds have moved gradually away from claims on employers (effectively book reserves) and domestic bonds in favor of equities and foreign securities.

### 1.5 Main Findings: Third Pillar

- The third pillar is based on voluntary savings and plays a small part in the pension system.
- **It consists of two parts: the “tied individual retirement savings”, which benefit from tax incentives; and other personal savings** in the form of life insurance, investments, bank accounts, or property ownership.
- **Tax incentives are provided to self-employed workers and to workers covered by occupational plans**, though the limits for the self-employed are much higher.
- **Tied individual retirement savings are subject to regulatory constraints.** They are operated by insurance companies and specially authorized banking foundations.

### 1.6 Overall Assessment

**A distinguishing feature of the Swiss pension system is the excellent design of the unfunded public pillar.** Its many positive features are not due to some grand original design but are the result of the periodic revisions that have addressed emerging issues. Since its introduction, the first pillar has gone through 10 revisions as well as some minor modifications.

- **Public pensions are modest and aim at an average replacement rate of 30% to 35% of average earnings.** As a result, payroll taxes, which are shared equally between employers and employees, are also modest. Payroll taxes have also been kept low because the federal and cantonal governments contribute by design 20% of pension payments.
- **The maximum public pension is limited to twice the minimum.** While pensions are subject to ceilings, contributions to the public pillar are not. The system achieves high (intragenerational) redistribution, especially among people of similar marital status, with considerably higher replacement rates for low-income workers and lower ones for high-income earners. Public pensions are based on both

earnings and years of contributions and use indexed (actualized) career earnings as a basis for determining initial pensions.

- **Both lifetime earnings and pensions in payment are indexed to the average of wage and price inflation (so-called Swiss indexation).** Finally, the tax treatment of the first pillar is EET (the same as for the second and third pillars).<sup>10</sup>

**The unique features of the second pillar in Switzerland are:**

- **It is a compulsory occupational pillar that is extensively funded and privately managed.**
- **It is effectively a defined-credit system.** The law specifies the minimum credits that must be made to individual “notional” or “shadow” accounts<sup>11</sup>. It also specifies the minimum interest that must be credited to these accounts and the annuity conversion factor that must be used on retirement. **Most occupational pension plans effectively operate with targeted benefit levels** and many plans continue to offer additional “super-obligatory” benefits.
- **The defined credits are related to the age of worker.** The notional contribution rates increase with age, so a higher contribution rate is paid or imputed at a time of life when it is more affordable for most workers. At the same time, it increases the cost of employing older workers for companies.
- **Low-income earners are not obliged to participate in the second pillar** but employers may voluntarily enroll them in their pension plans.

**The Swiss system exhibits an admirable coordination and integration between the two pillars and with social assistance (supplementary) pensions.** While all employees are required to contribute without ceiling to the first pillar, contributions to the second pillar are exempt on all earnings below a limit that is specified annually and corresponds to about 40% of average earnings. In this way, low-income workers are not forced to “oversave” and retire with very high replacement rates<sup>12</sup>.

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<sup>10</sup> An EET regime involves Exemption of contributions, Exemption of investment income, and Taxation of benefits.

<sup>11</sup> Thus, the use of “notional” individual accounts in the Swiss second pillar predates the development of “notional” accounts in Sweden. Moreover, the Swiss combine “notional” accounts with funding, while the Swedish approach, which has also been copied in Italy, Latvia and Poland, is applied in an unfunded plan.

<sup>12</sup> As argued in Vitas (1997:34) this feature is absent in the new Argentine pension system. It is also absent from the new pension systems that were recently introduced in Hungary and Poland.

In addition, workers below the age of 24 are not required to contribute to the second pillar, although all employees have to participate in disability insurance. Self-employed people are not required to contribute to the second pillar, but they are given tax incentives to save in voluntary retirement savings plans. **Compulsory contributions to the second pillar are based on the concept of “coordinated earnings”** (those between roughly 40 and 120 percent of average earnings) and aim at achieving a 60 to 70 percent overall replacement rate for most workers. Compulsory second pillar contributions are thus subject to a ceiling that is equal to about 120 percent of average earnings. However, additional voluntary contributions are allowed and benefit fully from the same tax advantages as the compulsory contributions.<sup>13</sup>

**Another aspect of pillar integration is the sharing of responsibility for disability pensions between the public and private pillars.** In most other countries, disability pensions are the responsibility of either the private or the public pillar. Total disability pensions from the public and private pillars are limited to 90 percent of previous annual earnings.

**Integration of both pillars with the payment of supplementary pensions to people with inadequate means is also important.** Old people with incomes below the poverty line receive a supplement from the state. It is interesting to note that the public pension paid to most people is below the official poverty line. However, most workers also receive a private pension and/or have other financial means in old age.

**Despite the integration of the two pillars and the modest level of public pensions, the total cost rate of the two pillars is not low.** As already noted above, public pensions absorb 9.1 percent of GDP, while second pillar benefits amount to 4.4 percent of GDP, resulting in a combined total of 13.5 percent of GDP. As covered earnings amount to 60 percent of GDP, this corresponds to a cost rate of 22.5 percent of covered earnings. The total financing rate, which also includes the reserves set aside in the funded pillar, amounts to 15.6 percent of GDP or 26 percent of the covered earnings. In the funded pillar, investment income now represents the dominant component behind the vast accumulation of pension assets.

The discussion has so far focused on the main strengths of the Swiss pension system. But as already noted **the system also suffers from some important weaknesses.** For the public pillar, one problem is the **gradually deteriorating system dependency ratio.** This is due to demographic aging, resulting from declining fertility and increasing longevity<sup>14</sup>. But it is also caused by the **high and increasing number of disability pensioners.** Disability insurance is particularly expensive with a 3.5 percent total cost rate.

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<sup>13</sup> Recently, a proposal has been put forward to place an upper limit on the tax-exempt voluntary contributions to the second pillar, but no such limit has been imposed so far. Under this proposal, contributions to the second pillar would be tax exempt up to an annual salary of CHF 300,000.

<sup>14</sup> This is a weakness that will also affect the funded pillar.

**A second problem concerns the unequal treatment of single and married workers as well as the unequal treatment of working wives**, although this has been addressed recently. Connected with this is **the use of a single annuity product** (joint and contingent survivor life annuity) that tends to penalize workers who belong to groups with shorter average life expectancies.

**The main weaknesses of the second pillar relate to its lack of transparency, the generally low investment returns, and the use of standardized annuity products.**

Consistent, timely and reliable data on the size and structure of private pension funds, the asset composition of their portfolios, and their performance in terms of investment returns and operating costs are conspicuous by their absence. **Several regulations and valuation rules constrain investment choice. Together with the imposition of a low minimum nominal rate of return, they probably explain the low investment returns.** The conservative investment policies pursued by most pension funds also were a contributory factor. Although individual funds may apply for an exemption from binding investment rules, most fund managers preferred to adopt conservative policies and operate within the prescribed limits. They also tended to adopt conservative accounting and valuation policies, using the lower of cost or market values rather than “mark-to-market” policies.

**Rather surprisingly, workers and the public at large seem in general to be unconcerned about the low returns.** Various explanations can be offered for this. First, workers covered by large company plans may belong to defined-benefit plans, where the performance risk is assumed by employers. Second, because of the use of the concept of “coordinated earnings”, low-income workers may rely only to a limited extent (or not at all if their income is below the stipulated threshold) on their private pension for their old age. They are thus little affected by low returns. Moreover, such workers probably benefit from the redistributive effects of the public pillar and have little reason to be critical of the overall system. Third, middle and high-income workers participating in defined-contribution plans may be insulated from the effects of low investment returns by the effective operation of such funds as hybrid funds with targeted replacement rates and high employer contributions. Fourth, the impact of low investment returns may be substantially mitigated, if not offset, by the stipulation of a rather generous annuity conversion factor.

**The special provisions and transfers in favor of the “transition generation” may also have mitigated any adverse criticism of the pension system.** Few retiring workers have suffered so far from the poor investment returns, although continuation of these patterns may have an adverse impact on future retirees.

**The only strong criticisms of the Swiss pension system have related to vesting and portability rules and the unequal treatment of working wives and single persons.** Both of these issues have been addressed in recent years.

## 1.7 Future Prospects

**The Swiss public pillar faces growing financial pressures because of the aging of the population.** Serious consideration is already being given to **raising the normal retirement age** to 67 or more. As in all other countries, this is likely to face strong political opposition. To overcome these political problems, Swiss experts are contemplating **linking in a more automatic but practical way the normal retirement age to life expectancy at retirement.** Another possibility is to insulate financially the public pillar from retirement decisions of individual workers by an appropriate redefinition of the actuarial decrements (in cases of early retirement) and increments (in case of late retirement). Current plans envisage lower actuarial reductions for workers with low benefits. Since retirees on low pensions are entitled to supplementary benefits, this could effectively mean that this group could retire at a lower age with the same benefits. These plans should be evaluated carefully.

**Other options include raising the contribution rate or using earmarked taxes,** such as a percentage of VAT, a special tax on energy, a wealth tax, or inheritance tax, to increase the revenues of the public pillar.<sup>15</sup> Raising the contribution rate will increase payroll taxes with adverse effects on labor market incentives, while using earmarked taxes will increase further the already high reliance on government co-financing.

**Another alternative is to consider more fundamental changes in the structure of benefits.** The use of means-tested supplementary benefits and the recent introduction of a progressive benefit formula suggest that the first pillar has been moving slowly but steadily in the direction of “flat” benefits. It is unlikely, however, that a drastic change would happen in the foreseeable future. **A more pressing issue is to address the very high cost of disability pensions.**

As regards the second pillar, **the main issues are to improve its transparency and supervision,** which implies an encouragement of consolidation in the sector, and to **enhance its investment performance.** There seems to be growing pressure for the further relaxation of investment rules and for giving employees greater choice in selecting pension funds and directing their investments. Many large funds are considering the pros and cons of adopting more flexible structures.

**Given its record of innovation, Switzerland could be the first country to contemplate seriously the creation of a dual regulatory structure,** comprising a heavily regulated part with strong government guarantees that caters for those with low risk tolerance

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<sup>15</sup> The value-added tax was increased by 1 percentage point in 1999 and the additional revenues are channeled to the first pillar. Further scheduled increases are envisaged in the on-going revision of the law. Also, part of the revenues from recent sales of gold reserves were allocated to the public pension system.

and a more liberal part with strong conduct rules but fewer state guarantees for those seeking a higher return.

**Another major issue is the development of a more sophisticated market for annuities.** The current compulsory annuitization on the basis of a uniform type of annuity may need to be replaced by a more flexible system. In this, compulsory annuitization with a standard annuity product could be limited to a reasonable overall replacement rate, while additional balances could be linked either to variable annuities or to scheduled withdrawals.

In view of the relatively low expenditure and redistributive nature of the first pillar and the long presence of a robust and well funded second pillar, **the Swiss pension system is better prepared to face the challenges of an aging population as well as changing financial technology than most other OECD countries.**

## II. The First Pillar

### 2.1 Introduction

How did the Swiss authorities design a near-perfect public pillar? And what are the main features of the public pillar that justify this characterization? The design of the public pillar as it stands today reflects the various revisions that have been implemented over the years. Many of the current features were not present when the public pillar was first introduced in 1948.

Design improvements have been a collective response to the various problems facing the public pillar. Because major revisions are submitted to a public referendum for approval, the package of new measures needs to be balanced. This provides a strong incentive for sensible policies, while the public is able to vote on the whole package and is often forced to accept or reject “the bitter with the sweet”. For example, the 10<sup>th</sup> revision that was enacted in 1997 combined compulsory contributions for non-working wives and widows and a gradual increase in the retirement age of women with splitting pension rights between men and women (and thus protecting divorced women) and introducing credits for child rearing and home care.

The main features of the first pillar include the following:

- *near universal coverage*
- *modest benefits with low dispersion*
- *a manipulation-resistant progressive benefit formula*
- *reasonable normal retirement ages and discouragement of early retirement*
- *somewhat “lax” disability pensions*
- *“means-tested” supplementary benefits*
- *“Swiss” indexation of both benefits and earnings*
- *no contribution ceilings and consistent tax treatment*
- *considerable redistribution*
- *significant benefit innovations*
- *sustainable but rising system dependency ratios*
- *low contribution rates*
- *government co-financing*
- *low administration costs*
- *sound but weakening finances*

## 2.2 Coverage

*Near universal coverage.* After the 10<sup>th</sup> revision in 1997, all residents in Switzerland, including non-working wives, students, people receiving public transfers (such as unemployed and disabled workers), the self-employed, and family workers paid in kind, are compelled to be insured and contribute to the public pillar. Before the 10th revision, non-working wives and widows as well as non-income earning family workers were not required to contribute, although they were allowed to make contributions based on wealth since 1973.

The first pillar has achieved high coverage since 1950 when it counted 2.16 million contributors, representing 82 percent of the economically active population. In 1998, coverage reached 3.8 million people or 89 percent of the economically active population (Table 1)<sup>16</sup>.

## 2.3 Benefits

*Modest benefits with low dispersion.* The maximum pension from the public pillar is twice the minimum pension. These levels are set annually and correspond to about 20.3 and 40.6 percent of average earnings<sup>17</sup>. This feature was introduced in 1969 as part of the 7<sup>th</sup> revision of the system. The ratio of maximum to minimum pensions amounted to 3.1 in 1948 when the first pillar was introduced. The compression of the max/min ratio was motivated by the need to expand minimum benefits in the 1970s while keeping contribution rates low and avoiding a crowding out of the (then voluntary) private pillar. It is important to note that these measures were taken at a time when most neighboring European countries were expanding the benefits of their social security systems and in so doing were undermining the prospects of private pillars and occupational pensions.

Pension benefits vary by the marital status of pensioners. Pensions for married couples are equal to 150 percent of the pensions for single persons. The corresponding proportions for other categories of beneficiaries are 80 percent for widows, and 40 percent for orphans. Pensioners with wives aged between 55 and 62 received a 30 percent supplementary pension. However, the 10th revision eliminated this supplement for persons retiring after 1997. The 10th revision also replaced the pensions for couples with individual pensions. But a limit of 150 percent on the level of the combined individual pensions continues to apply to married couples.

The average old age pension benefit amounted to CHF 1,657 for single recipients in 1998 (equivalent to 33 percent of the average covered wage). Allowing for supplementary

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<sup>16</sup> Table 1 also reports coverage in relation to the labor force, although some members of the labor force are not required to contribute, while some contributors do not belong to the labor force.

<sup>17</sup> For 1999, they are respectively equal to CHF 12,060 and 24,120. These correspond to about 20.3 and 40.6 percent of the average covered wage, which amounted in 1998 to CHF 59,400.



benefits (see below), the average pension increases to CHF 1,842 (or 37 percent of the average wage).

***A manipulation-resistant progressive benefit formula.*** Many countries, especially in the developing world, have public pension systems that provide unintended incentives for evasion and for understatement of income for most of working life with overstatement of income during the last few years before retirement. This is the case when pension benefits depend on average earnings over the last three to five years before retirement and on fulfillment of a minimum contribution period. A short minimum contribution period encourages evasion by young low-income workers (especially when a minimum pension is offered), while a long minimum contribution period encourages evasion by both young and old workers.

In Switzerland, public pensions consist of two parts. One is based on years of contributions and the other on average lifetime earnings. Persons who have complete contribution records are entitled to a full pension, while incomplete contribution periods give rise to partial pensions. The proportionality rule was introduced in 1960. But since practically the entire population is compulsorily insured, incomplete contribution careers are not very common, except for persons who have spent long periods abroad. It is estimated that over 90 percent of all single old age pensioners receive pensions based on a full contribution period.

Prior to 1993, the benefit formula was the same for all workers. It provided 80 percent of the minimum pension (pro-rated by years of contributions) and 20 percent of pensionable salary, subject to the maximum pension ceiling. Under this formula, the replacement rate would amount to 100 percent for a worker earning 20 percent of the average, 36 percent for a worker at average earnings, and 8 percent for a worker earning five times the average. A two-step pension benefit formula was introduced in 1993<sup>18</sup>. This aimed to increase the public pensions of workers with below average earnings and thus reduce the number of pensioners that rely on means-tested supplementary benefits (Table 2).

***Reasonable normal retirement ages and discouragement of early retirement.*** Many countries have public pension systems with low retirement ages and lax conditions for early retirement. These features cause a disproportionate increase in the number of beneficiaries and result in unsustainably high system dependency ratios. In Switzerland the normal retirement age is 65 for men and 62 for women. After the 10<sup>th</sup> revision in 1997, the retirement age for women is scheduled to increase gradually to 63 by 2001 and 64 by 2005.

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<sup>18</sup> For pensionable incomes up to 3 times the minimum pension, the fixed component is equal to 74 percent of the minimum pension and the variable component is calculated as 26 percent of pensionable earnings. For workers earning above this limit, the fixed pension component is 104 percent of the minimum pension, while the variable component is calculated as 16 percent of the applicable income. With this formula, those earning less than average earnings receive a higher replacement rate by a few percentage points, while those with above average earnings continue to receive low replacement rates. The replacement rate for a worker with half the average earnings would increase from 52 to 56 per cent.

Until the 10<sup>th</sup> revision, there were few opportunities for early retirement, while deferred pensions, introduced in 1969, were allowed for up to five years, with corresponding increases in pension benefits. Early retirement will now be permitted but the public pension will be reduced by 6.8 percent for every year of early retirement<sup>19</sup>.

***Somewhat “lax” disability pensions.*** Introduced in 1960, disability insurance is compulsory for all affiliates of the old age and survivors pension scheme. Responsibility for disability pensions is shared with the private pillar. The primary objective is to provide vocational rehabilitation and labor force reintegration rather than to pay disability pensions. However, in the early and mid-1990s, disability pensions were used as a less socially divisive way of coping with the unemployment of older workers in declining industries.

Beneficiaries of disability pensions and other monetary benefits must pay contributions to OASI and unemployment insurance. If they are employed, contributions are calculated according to income, but if they have no other income, contributions are calculated on the basis of wealth or imputed wealth. Disability pensions are paid only until the beneficiary reaches the regular retirement age of 65 years for men and 62 years for women. Thereafter, regular old age pensions are paid. The average single person disability pension amounted to CHF 1,298 per month in 1998, corresponding to 78 percent of the average old age pension.

***“Means-tested” supplementary benefits.*** The minimum pension of the first pillar is supplemented by means-tested, non-contributory benefits that were introduced in 1964. The supplementary benefits evolved from cantonal welfare programs supported by fiscal subsidies, which were the only public income support for the aged before the establishment of the OASI insurance. When the first pillar was introduced, the cantons received the reserves of these programs to continue providing benefits on a discretionary basis. But a large number of the old age and, especially, disability pensioners were found to lack adequate protection. Supplementary benefits were preferred to the alternative of raising the minimum pension to the subsistence level, which would have been too costly.

Supplementary benefits are targeted at old age and disability pensioners who have to rely exclusively on the first pillar for their old age income. They are calculated to reach a minimum 1999 income of CHF 16,460 for single persons (136 percent of the minimum pension) and CHF 24,690 for couples. In 1998, about 64 thousand old-age pensioners received a supplementary pension amounting on average to CHF 543 per month or CHF 6,516 per year. This corresponds to 11 per cent of the average covered wage. Receipt of a supplementary pension would raise the total pension income of persons at the minimum pension level to 31

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<sup>19</sup> During the transitory period of raising the normal retirement age for women, the actuarial reduction will amount to 3.4 percent.

percent of the average covered wage. Supplementary pensions were also paid to 134 thousand recipients of disability pensions at an average benefit of CHF 440 per month.

The supplementary benefits are financed predominantly by the cantons with subsidies from the Confederation ranging between 10 and 35 percent of expenditure. During recent years, the share of pensioners eligible for these benefits has been rising for various reasons: minimum pensions were usually raised less than the subsistence income limit, and more pensioners required financial support to cover the costs of long-term care.

**“Swiss” indexation of benefits and earnings.** Indexation of pensions was introduced in 1979. In earlier years, adjustments were made on ad hoc basis. Major increases in pension benefits were authorized in the 1970s to protect pensioners from the high rates of inflation of that decade. After 1979 both new pensions and current pensions are calculated by applying the mixed Swiss pension index. This composite index is defined as the average of the national consumer price and the BIGA wage index. The index is cumulative based on 1979, the year of its introduction. Adjustments are made every two years, unless prices rise by more than 4 percent in any one year, in which case pensions are adjusted annually. The Swiss pension index is also used for revaluing lifetime earnings.

**No contribution ceilings and consistent tax treatment.** Both employer and employee contributions are tax-exempt and are levied on total income without ceiling for all income-earning contributors. Switzerland is one of few countries, if not the only one, that imposes no ceilings on the salaries that are subject to contributions to the public pillar and also applies the same tax treatment on contributions to the first and second pillar. The absence of a ceiling increases the redistributive impact of the first pillar.

**Considerable redistribution.** Since the first pillar provides pensions within minimum and maximum limits, the replacement rate declines from more than 100 percent for very low-income earners toward 0 percent for very high-income earners. In 1992, 31 percent of all single old age pensioners received the maximum pension, while 7 percent received the minimum pension (Table 7). 93 percent of single old age pensions paid were full pensions, i.e. based on a full contribution record. The average replacement rate for full single old age pensions was around 30 percent of previous earnings. Redistribution is increased by the payment of supplementary benefits. Because no ceiling is applied on the level of income that is used as a base for calculating contributions, the extent of redistribution is greater than in the United States and most other countries that normally impose such a ceiling. In fact, the contribution on incomes above a certain threshold level is often described as a “solidarity contribution” (Helbling 1991:448).

Nevertheless, as in other OECD countries with similar schemes, redistribution often takes place in unintended directions. There is extensive redistribution from single to married affiliates, because of the 50 percent supplement for marital pensions, and from men to women, because of the lower retirement age and longer life expectancy of women. This often works in

perverse ways in the sense that lower-income single men may “support” higher-income married women. However, because of the low maximum limit on public pensions, such perverse redistribution is likely to be smaller than in other countries. Moreover, changes in rules regarding contributions and benefits in the 1990s (such as the compulsory contribution by non-working spouses and the more progressive benefit formula) are likely to increase redistribution from high to low-income workers for particular groups of participants and to reduce (though not eliminate) perverse redistribution across different groups.

***Significant benefit innovations.*** The Swiss first pillar has an impressive record of innovation. Benefit innovations cover the adoption of the proportionality rule in 1960, the low dispersion rule in 1969 and the “Swiss” indexation of benefits in 1979. Two new features that are part of the 10th revision include the offer of bonus credits for child rearing and assisted living (home care) and the splitting of pension benefits between spouses.

Bonus credits will be granted for raising (educating) children and for assisting old and disabled persons. The educational credits will take the form of “notional” salaries added to the earnings of the beneficiaries for all the years during which a family has children aged less than 16, thus increasing the pensionable salary that is used for determining the pension. A family having 3 children at 2-year intervals will receive this “notional” salary for a total of 20 years. The “notional” salary will be equal to 3 times the minimum pension. A similar bonus will also be credited for assisted living, although only one bonus per year can be credited.

The educational and assisted living bonuses will be divided between the two spouses or will be credited to the single person who raises the children or looks after a person needing assistance. These provisions are likely to benefit low and middle-income people, since the total pension is still subject to the maximum level set each year. But they will also increase the total cost of the system at a time when there are growing concerns about the deteriorating system dependency ratio.

The other major innovation of the 10th revision is the splitting of pensions between spouses. This will apply in the case where both spouses are retired for all pensions obtained after 1997. The spouses will share equally all income earned during the marriage, but will be entitled to their own personal incomes earned before the marriage or after the marriage in cases of divorce. Splitting will also apply in the case of divorce as well as when survivor pensions are set.

***Sustainable but rising system dependency ratios.*** A feature of most public pension systems is that the system dependency ratio tends to exceed the (old age) demographic dependency ratio, especially in mature systems. This is usually because the number of beneficiaries increases faster than the number of contributors, while growing evasion may also contribute to the discrepancy. In Switzerland, evasion is non-existent or, at best, negligible. Any discrepancy would originate in a disproportionate increase in the number of beneficiaries.

The number of people receiving an old age, survivor or disability pension increased steadily over the years, from 0.3 million in 1950 to 1.8 million in 1998 (Table 3). This exceeded by as much as 50 percent the number of people aged over the normal retirement age. To a significant extent this is explained by the fact that all the reported survivor pensions, which represent 7 percent of the total, and disability pensions, which account for an additional 12 percent, are paid to people of a younger age. As noted above, all these benefits convert into old age pensions on reaching normal retirement age.

But even the number of old age pensions, which amounted to 1.45 million in 1998, is higher than the number of old people. This discrepancy is probably explained by the counting of pensions for married couples as two individual pensions. As a high proportion of spousal beneficiaries is likely to be below the normal retirement age, the number of old age pension recipients exceeds the total number of people above the normal retirement age. Counting pensions paid to couples as one reduces the number of old age pensions to 1.15 million, which corresponds to 94 percent of old people.

Indirect evidence on the impact of below retirement age pensions is provided by labor market statistics. Data for 1998 show that 97 percent of men and 79 percent of women between the ages of 25 and 54 participated in the labor force. These proportions fell to 82 and 64 percent for people aged between 55 and 64/61 years respectively, while for people above the normal retirement age, the labor force participation rate (LFPR) was much lower at 13 and 9 percent. The data also show a contrasting trend in the employment pattern of men and women over the 1990s. While the LBFR of men aged between 55 and 64 fell from 86 percent in 1991 to 82 percent in 1998, that of women aged between 55 and 61 rose from 53 to 64 percent.

During the early and mid-1990s, disability pensions were used as a less socially divisive way of dealing with the unemployment of older workers in declining traditional industries (such as textiles, watches, and precision instruments). The number of disability pensioners increased by 37 percent between 1990 and 1998, while that of recipients of the old age pension benefit rose by only 18 percent. Although the growing use of disability pensions weakens the finances of the pension system, the financial cost would not be much smaller from an overall public perspective if unemployment benefit were to be paid. Exiting the labor market on vague disability grounds would be less distressing than being made redundant, although special care is always required to discourage abuse and to prevent employable workers from taking the easy way out<sup>20</sup>.

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<sup>20</sup> Swiss pension officials and experts argue that the rise of disability pensions is not due to their misuse but rather to the easing of labor market conditions in the 1990s. The argument is that during very tight labor markets many older and weaker workers participate in the labor force and thus the number of disability pensioners is kept below its normal level. When labor market conditions ease, most of these workers exit the labor force by taking disability pensions and this explains the large rise in their number in the 1990s. No hard evidence is provided to support this widely-held thesis.

The system dependency ratio, which shows the number of beneficiaries as a percentage of contributors and includes all types of beneficiaries (old age, survivor and disability pensions)<sup>21</sup>, amounted to 47 percent in 1998 up from 14 percent in 1950 and 39 percent in 1980 (Table 4). The (old age) demographic dependency ratio, which shows the number of old age people as a percentage of people of “economically active” age, stood at 28 percent in 1998, having increased from 23 percent in 1950.

The difference of 19 percentage points is quite large. Excluding disability and survivor pensions, which together accounted for 19 percent of all pension benefits, the system dependency ratio for old age pensions falls to 38 percent, i.e. 10 percentage points higher than the (old age) demographic dependency ratio. Counting couples as one benefit recipient would reduce the number of old age pension benefits to 1.15 million and the SDR to 30 percent.

## 2.4 Financing

**Low contribution rates.** Contribution rates are low because the public pillar offers modest benefits, operates on an unfunded basis with a targeted one-year liquidity reserve, and enjoys considerable government co-financing. Contribution rates were initially set at 4 percent, but after successive increases in the 1960s and 1970s they have amounted since 1975 to 8.4 percent, divided equally between employers and workers (Table 5). Self-employed persons contribute between 4.2 percent and 7.8 percent depending on their level of income, which is established in accordance with the income assessed for tax purposes. Non-working persons contribute according to their personal assets, including the imputed wealth from the receipt of annuity income, but their contributions are subject to an upper limit. In 1999, the minimum annual contribution of non-working persons amounted to CHF 324 and the maximum to CHF 8,400. This maximum has also remained constant since 1975.

Contributions are payable by all employees aged 17 years and older, while non-employed persons must start contributing at age 20. If employment continues beyond the retirement ages of 62 years for women and 65 years for men, contributions are payable only for monthly incomes above a specified limit. (The obligation to contribute above retirement age was abolished shortly after the introduction of the first pillar but was reinstated a few years ago.) The exempt limit for working pensioners amounts to CHF 1,400 per month.

Disability insurance is financed in equal shares by payroll taxes and by government contributions. Payroll taxes are shared equally between employers and employees. They amount to a total of 1.4 percent of income. The self-employed pay the same rate, while non-working people pay between CHF 54 and 1400. The payroll tax for disability insurance was initially set at 0.4 percent. After several small increases in the late 1960s and early 1970s, it

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<sup>21</sup> Supplementary pensions are not included in this total to avoid double counting.

reached 1 percent in 1975. It was raised to 1.2 percent in 1988 and has been at its current level since 1995 (Table 6).

Revenues from contributions and a small amount of investment income cover approximately 50 percent of total expenditure on disability pensions. The other half is funded by the federal government (37.5 percent) and the cantons (12.5 percent). In the past few years government contributions accounted for an increasing share of total revenues, reaching nearly 55 percent of the total in 1998. Contributions to disability insurance are collected and administered by the old age and survivors insurance funds.

At a total contribution rate of 3.1 percent, disability insurance is expensive by comparison to rates charged by private insurance companies in Chile and Argentina. Adding the existing deficit, the cost rate rises to 3.5 percent of covered earnings. The cost of public disability insurance looks particularly high if account is also taken of the disability insurance offered by the private pillar and of the fact that disability pensions are not paid for life but only up to the normal retirement age, when they convert into old age pensions. The higher cost may be explained by the greater maturity of the Swiss pension system, the older age of Swiss workers, the redistributive component of the public pillar, and perhaps also the use of more lax conditions for granting disability pensions.

**Government co-financing.** The first pillar operates on a pay-as-you-go basis with government co-financing. It aims to have a liquidity fund covering one year's spending. It is financed from employer and employee contributions, from the investment income earned on the liquidity reserves, and from federal and cantonal transfers. The latter cover respectively 17 and 3 percent of annual expenditures for old age and survivor pensions, although the share of the federal government has fluctuated over the years<sup>22</sup>. Allowing for the government transfers, the total contribution rate for the old age and survivor pension scheme amounts to 10.7 percent. This is low by the standards of most European countries and is explained by the more modest level of public pensions. If one abstracts from the surplus that is being accumulated in the US social security system to cover the future retirement needs of the baby boom generation, the Swiss and US contribution rates are comparable.

Government also pays half the cost of disability pensions. This amounts to 1.7 percent of covered earnings. The total government contribution for old age, survivor, and disability pensions is equivalent to 4.1 percent of covered earnings.

**Low administration costs.** The public pension pillar is organized and administered on a decentralized structure. A total of 105 funds with about 3,000 branch offices throughout the country register the insured, collect contributions, administer accounts, and pay benefits. Of

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<sup>22</sup> The federal subsidy was substantially reduced in the 1970s when the federal government was facing strong budgetary pressures, but was restored in the 1990s.

these, 77 are run by professional associations, 26 by the cantons, and 2 by the federal government. A clearing and equalization office under the federal government keeps a central register of all insured persons and manages the central reserve fund. The clearing office balances income and expenditure flows among the individual funds and invests the surplus reserve.

The administration costs of the first pillar amounted to less than 1 percent of total benefits for old age, survivor and disability pensions in 1998. The old age and survivors scheme had expenses of less than 0.4 percent of total benefits. But administrative costs were much higher in the case of disability pensions at nearly 3 percent of benefits. The costs involved in assessing the individual degree of disability and administering the different types of disability and rehabilitation benefits are clearly higher than those for old age and survivor pensions.

The administrative costs of social insurance are financed through fees payable by contributing employers, the self-employed and non-working contributors. The cantonal pension funds charged an average fee of 1.78 percent of contributions, the funds of professional associations charged on average 0.81 percent. The cantonal funds also receive transfers from the social insurance central fund to cover additional administrative tasks.

***Sound but weakening finances.*** Revenues of the old age and survivors scheme increased from 3.3 percent of GDP in 1950 to 6.6 percent in 1998, when they amounted to CHF 25.3 billion (Table 8). Revenues evolved largely in line with contribution rates, which increased sharply in the 1970s but have been constant since then, and covered wages, which fluctuated around 60 percent for most of the period. This explains why revenues from contributions have remained relatively constant as a percent of GDP since 1980.

Old-age benefits, including supplementary and survivor benefits, were less than 1 percent of GDP in 1950 but increased steadily since then and reached nearly 7 percent in 1998 (Table 9). The old-age scheme produced a small deficit in 1998, equivalent to 0.4 percent of GDP. However, adding the government transfers that are made by design, the total “deficit” for the old age scheme amounted to CHF 6.7 billion or 1.8 percent of GDP.

The public pillar is required to maintain a reserve fund that covers one year’s benefits<sup>23</sup>. The system has failed to achieve this since 1980. The gap was small in the early 1990s but widened considerably in the past couple of years. It stood at 82 percent of paid benefits in 1998, effectively covering 10 months’ expenditure (Table 10). The capital fund, which corresponds to 5.7 percent of GDP, was invested in domestic bank deposits, loans, and government bonds for most of the period since the creation of the public pillar in 1948.

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<sup>23</sup> Some Swiss experts argue that maintaining a reserve fund for liquidity purposes is unnecessary in countries with well developed financial markets where liquidity needs can be met more efficiently by short-term borrowing.



However, following a 1997 relaxation of investment rules that aimed at raising its profitability, the fund placed 7 percent in Swiss equities and 2 percent in foreign bonds in 1998.

Revenues of the disability insurance scheme rose from 0.3 percent of GDP in 1960 to 1.9 percent in 1998 (Table 11). Government transfers cover by design half the spending on disability pensions. The disability insurance scheme has been running a growing annual deficit that was equivalent to 0.2 percent of GDP in 1998 (Table 12).

Combining the two components of the public pillar shows total revenues for 1998 of CHF 32.6 billion, total payments of CHF 34.7 billion, and a total deficit CHF 2.1 billion. These correspond to 8.5, 9.1 and 0.6 percent of GDP. Government transfers covered 27 percent of total benefits. Adding the government transfers, which correspond to 2.4 percent of GDP, brings the total “deficit” of the first pillar to 3 percent of GDP. Although reliance on government financing was part of the original design of the public pillar, the growing “deficit” may require increased government transfers which may in turn generate pressures for significant changes in the structure of the system. The total cost rate of old age and survivor pensions, expressed in relation to the covered wage bill, amounted to 11.7 percent in 1998, while that of disability insurance equaled 3.5 percent.

## **2.5 Future Prospects**

The combined cost rate of the two systems is 15.2 percent of covered wages and is likely to increase further. This is because, like most other European countries, the Swiss pension system will face considerable pressures in the future as a result of demographic aging. The old age dependency ratio is expected to increase substantially, because of declining fertility and increased longevity. It is forecast to reach 45% by 2030 and 47% by 2040, up from 28% at present. To meet the financial pressures of aging, several measures are under consideration. Increasing the normal retirement age features prominently among them, although it is likely to face strong political opposition. Swiss experts are considering linking the retirement age to life expectancy at retirement, either by aiming to keep the length of retirement life constant or by keeping the ratio of the passive to active life constant.

On the financing front consideration is given to raising the contribution rate or using earmarked taxes, such as a percentage of VAT, a special tax on energy, a wealth tax, or inheritance tax (IAD FiSo 1996). Financial projections, incorporating the effects of the 10th revision, show that expenditures will continue to exceed revenues and the reserve fund will be exhausted in 2010. With unchanged policies, the contribution rate may have to be raised to 10% and a 1% VAT rate allocated to the pension system to maintain financial equilibrium. Reliance on VAT revenues would imply a substantial increase in government financing. Although no decisions have been taken yet, the modest level of public pensions and the existence of a well-funded private pillar suggest that the transition will be easier to manage in Switzerland than in most other European countries.

### III. THE SECOND PILLAR

#### 3.1 Nature of System

One of the most intriguing aspects of the Swiss second pillar is its complexity and the difficulty of providing a precise characterization of its nature. This impedes a clear understanding of its functioning and an evaluation of its performance. The complexity of the system is related to the fact that while the law imposes minimum legal requirements, it leaves most of the terms and conditions and operational elements of pension funds to be determined by the pension plan. The founders of pension funds enjoy considerable freedom in determining the level of benefits and contributions, the investment policies, the use of insurance, and the level of transparency and communication with affiliates. As a result, there is wide variation in terms and conditions as well as many different types of funds. As the mandate is imposed on employers, there is also a large number of pension funds.

The complexity of the system is made more opaque by the lack of transparency and the limited availability of data on the investment performance of pension funds. Detailed aggregate data on pension funds, based on a bi-annual survey undertaken by the Federal Office of Statistics, are published every other year with a two-year delay<sup>24</sup>. Although wide-ranging and comprehensive, the bi-annual surveys do not report any data on individual pension funds, while the information they provide on the financial accounts of pension funds and especially on their investment performance and operating efficiency suffers from many shortcomings.

These problems are, however, mitigated by the highly sophisticated set of minimum requirements that are imposed by the law and its implementing regulations. These specify the posting of minimum credits to notional individual retirement accounts that vary by age as well as the provision of disability and term life insurance (that also take account of projected credits). They also stipulate a minimum rate of interest to be credited to these accounts<sup>25</sup>. Thus, the compulsory element of the second pillar could most aptly be characterized as a “defined-credits” system.

These requirements aim at the accumulation of a targeted amount of capital. The law further specifies a minimum annuity conversion rate that ensures that the accumulated capital is converted into an annual pension that corresponds to around 35 percent of covered earnings. Added to the pension from the public pillar this would ensure that a worker on average earnings would retire with a 60 to 70 percent replacement rate.

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<sup>24</sup> For instance, the results of the 1996 survey were published in November 1998.

<sup>25</sup> This has been set at a nominal 4 percent since the introduction of the compulsory system in 1985. The implicit assumption appears to be that this is equal to the projected long-term growth rate of nominal earnings.

The law does not specify a minimum contribution rate, but requires that the contribution of employers is at least equal to that of employees. It also requires that employees have equal representation at the top governing body of the pension fund. While there are various requirements aiming at safeguarding the interests of workers, there is no explicit minimum funding requirement but only a provision that pension funds must be able to meet their financial obligations.

### **3.2 Regulation and Supervision Agencies**

The second pillar is subject to an extensive array of regulations that, in line with pension fund regulation in most other countries, has prudential and protective objectives. It aims fundamentally to ensure the financial safety of pension funds and to safeguard the interests of covered workers. The regulatory regime is of moderate intensity, lying between the “draconian” orientation of Latin American countries and the more “relaxed” approach of Anglo-American countries<sup>26</sup>.

Supervision is reactive rather than proactive and is institutionally fragmented. It does not appear to address potential “moral hazard” problems in an effective way. The law provides for the creation of a Guarantee Fund to guarantee the minimum benefits stated in the law as well as a Suppletory Fund (or Substitution or Residual Fund) to cover uninsured workers but does not seem to include enough safeguards to ensure that recourse to these two institutions is kept to a minimum.

Second pillar institutions are supervised by a number of authorities. All pension plans providing the mandatory occupational retirement benefits must register with their respective supervising authorities. The cantonal authorities designate supervisors to control the funds within the borders of the individual cantons. Pension funds and social insurance institutions operating on a national or international level are supervised by the Federal Office of Social Insurance. Insurance institutions of confederational entities are under the supervision of the Ministry of Finance. Life insurance companies, which undertake the management of pension funds under collective insurance contracts, fall under the supervision of the Federal Office for Private Insurance. Overall supervision is exercised by the Federal Council of Switzerland and the Federal Office of Social Insurance. The law has created an advisory Federal Commission on Occupational (Professional) Pensions with representatives from federal and cantonal governments, employers, employees, and the pension funds.

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<sup>26</sup> This distinction was drawn in Vittas (1998:2-4) and refers to the whole panoply of pension fund regulations and not just to those applicable on investments and asset allocation.

The regulatory framework for pension funds covers a wide area of complex issues. These range from licensing criteria that define the institutional structure of the system to rules regarding fund governance, coverage, contribution and benefit levels, asset allocation and valuation, auditing and supervision, and information disclosure and publicity standards.

### 3.3 Institutional Structure

**Number of funds.** As in other countries where private pensions are offered by employer-based plans, there are a large number of occupational pension schemes. Pension institutions can be established as non-profit foundations, as cooperative societies, or as institutions incorporated under public law. The latter form is only possible for funds covering employees of public sector entities. In 1996, there were only 39 cooperative societies and 168 public sector funds. The vast majority of pension institutions, of which there were nearly 11,600, were created as foundations. They account for 98 percent of pension institutions and 79 percent of affiliates (Table 14).

The number of institutions declined over the years as part of a long-drawn consolidation process. There were 17,500 institutions in 1980. The number of affiliates grew after 1985 but fell slightly in the 1990s. In contrast, the number of beneficiaries has been on a more steadily rising trend (Table 15).

The multitude of pension institutions provides a misleading picture of the structure of the Swiss second pillar. Many of the institutions do not operate as traditional pension funds but as charitable entities offering welfare benefits, while others have been established as purely financing vehicles. A significant but declining number represents “frozen” pension funds that have stopped accepting new contributions after the introduction of the new system in 1985 and remain in existence only for the payment of benefits. Most of these three categories of institutions do not have active affiliates (Table 16). Out of 11,600 institutions in 1996, 7,300 had no affiliates and only 4,300 (or 37 percent of the total) had active affiliates.

On the basis of the total number of pension institutions, the average size is less than 300 affiliates per fund. If only funds with active affiliates are taken into account, the average size is still only 735 affiliates per fund. This is very low and is due to the large number of very small funds. Yet despite the large number of institutions, concentration in the sector is high. The largest 52 funds (representing 1 percent of all funds with affiliates), each with more than 10,000 members, covered 1.9 million workers or 60 percent of the total (Table 17). They had on average 36,000 affiliates per fund and CHF 3.5 million in assets and accounted for 53 percent of total assets. However, concentration in Switzerland is nowhere near the levels found in Latin American countries, where the total number of funds is less than 20 (in several countries less than 10) and the largest 4 account for more than 70 percent of affiliates and assets.

In 1996 nearly 2,500 funds with affiliates had fewer than 100 members each, while there were also some 7,300 funds with no affiliates. The large number of small institutions makes supervision and transparency difficult without offering any real benefits to workers. It is one of the major weaknesses of employer-based schemes, that is made worse by the captivity of workers, who do not have the right to switch funds (except when they change employers) and can exert little direct influence on the efficiency and performance of the funds.

**Licensing and Registration.** Only those institutions that offer the mandatory minimum benefits are required to be registered under the law on occupational pensions. In 1996 some 3,075 institutions (or about 27 per cent) of the total number of pension institutions were registered. More than 60% of pension institutions had no affiliates and were not registered. An additional 10 percent of institutions (about 1,200 funds) had affiliates but were not registered under the law. The nonregistered funds covered about 8 percent of affiliates and presumably operated “top hat” schemes for senior staff. Most of them are set by foundations and cover private sector employees.

Employers must affiliate with a registered pension institution for the minimum legal benefits but they may affiliate with more than one registered pension institution as well as with nonregistered institutions. The latter explains the use of nonregistered institutions for “top-hat” benefits. Presumably some employees with benefits that go beyond the minimum are affiliated with more than one pension institution, giving rise to some double counting of covered employees.

As in other countries with employer-based schemes, licensing and registration criteria are not particularly onerous. Registered pension institutions must provide a copy of the pension plan to their supervisory agency, must create its governing bodies in accordance with the provisions of the law (equal representation of covered employees on the board of trustees, appointment of auditors and pension experts, preparation of an annual report, etc.), and must provide a reassurance that they can maintain the appropriate accounting records and ensure the payment of mandated benefits. There are no minimum capital and membership requirements and no explicit minimum funding provisions, although expert certification of long-term financial balance is required. Pension institutions with fewer than 100 active affiliates that intend to assume fully the various insurance risks must take additional measures to ensure their financial equilibrium.<sup>27</sup> Pension institutions that do not satisfy the minimal registration conditions are deleted from the register. Unless employers affiliate with another pension institution, their employees are compulsorily covered by the Suppletory Institution (see below).

**Classification of funds.** Swiss law and statistics classify pension funds by several characteristics. First, there is classification by legal form (private sector, subdivided between

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<sup>27</sup> This is a vague and weak provision with potentially important ramifications for some workers. In 1996, 2,500 pension institutions had fewer than 100 insured workers for a total of 80 thousand affiliates. However, it is not indicated how many of these institutions assumed all the various insurance risks.

foundations and cooperatives, and public sector). Then, there is classification by registration or not. However, of greater functional interest is the classification by form of administration, risk management and type of plan.

There are five different forms of administration. Operation as a single-employer entity and participation in multi-employer funds, which are subdivided into four types.

- *Collective funds*, which are organized by insurance companies, banks or fiduciary institutions. They offer the benefits of collective administration, but maintain separate accounts as well as separate rules and conditions for the occupational pension schemes of participating employers.
- *Professional association funds*, which are open to association members and generally operate one scheme with similar rules, conditions, and accounts for all participating employers.
- *Multi-employer funds for public sector entities*, which are created for employees of public sector entities.
- *Conglomerate group funds*, which are set up for the companies of particular groups.

In 1996, there were 1684 multi-employer pension institutions, covering 279,000 employers and 2.83 million affiliates (representing 90% of all affiliates). Most of these multi-employer funds have low memberships as only 559 institutions reported more than 500 insured workers in 1996 (accounting for 88 percent of all affiliates but clearly including some large single-employer funds).

With regard to risk management the law distinguishes five types of institutions:

- *autonomous funds without any reinsurance cover* (these are generally created by large employers and multi-employer institutions and provide in-house insurance for old age, disability and survivorship to their members without contracting out any risk coverage to private insurance companies);
- *autonomous funds with reinsurance cover* (similar to the first type except that they may be supported by some form of reinsurance --“excess-of-loss” or “stop loss” contracts);
- *semi-autonomous or mixed funds* (these cover the risks of old age benefits, but transfer to an insurance company the risks of survivorship and disability pensions);
- *insured funds* (these insure all types of benefits with insurance companies); and
- *savings funds* (these accumulate the savings capital but cover none of the risks involved).

Small companies usually affiliate their employees with insured funds operated by collective or pooled foundations. These are mostly established by life insurance companies and involve the contracting out of full insurance coverage for old age, disability and survivorship benefits. The premium payable to life insurance companies is uniform for all companies and is approved by the Federal Office of Private Insurance. Life insurance companies compete through the level of dividends for their member funds, which are used either for premium

bonuses (in defined contribution plans) or cost reduction for the employers (in defined benefit plans).

Enactment of the compulsory law had a positive impact on the role of insured funds. Despite the fall in their number, which resulted from the decision of many smaller employers to join larger collective schemes, the number of affiliates covered by insured funds increased. This happened at the introduction of the new law when the number of affiliates of insured funds rose nearly threefold, while that of self-insured autonomous funds increased by half. In 1996, insured funds had a slightly higher share of affiliates than autonomous funds (Table 18).

The number of pension funds in the second pillar has been on a steady decline. When occupational pension funds became mandatory, many employers decided to join collective foundations and gradually dissolved existing funds. In 1978, there were 14,000 autonomous, semi-autonomous, insured and savings funds. This number decreased to 6,000 in 1987 and further to just over 3,000 in 1996.

**Type of Plan.** Plans can be designed at the discretion of the foundations as long as the minimum requirements for benefits are fulfilled. The funds are also free in their choice of plan type, i.e. defined contribution or defined benefit plans. Defined contribution plans provide benefits based on the contributions made by and on behalf of the individual member with the interest accrued over the contribution period. Defined benefit plans provide retirement benefits, which are defined as a percentage of previous earnings, e.g. final pay, final average, or career average earnings.

In 1996 the vast majority of funds (80 percent) operated as defined contribution plans. They covered 70 percent of all affiliates, up from 57 percent in 1987 (Table 19). The number of DC funds fell by half between 1987 and 1996 (from 7,101 to 3,454), while that of DB plans declined by 30 percent (from 1101 to 759). It should be noted, however, that the fall in the number of funds with active affiliates is overstated in the reported statistics because the 1987 data included some 2,278 “frozen” funds, while in later surveys they were excluded. The average size of a DC fund was 640 affiliates in 1996 and that of DB plans 1212.

The conversion of DB into DC plans is continuing. The pension funds of the Federal Government and Canton and City of Zurich are the latest to announce their conversion to DC plans for all new employees.

### 3.4 Fund Governance

**Joint Administration with Equal Representation.** Pension funds must be legally separated from their sponsoring employers. As already noted, the vast majority of pension funds are established as foundations. According to pension fund regulations, registered pension funds, i.e. those providing at least the mandatory minimum benefits, must be administered jointly by employers and employees with an equal number of representatives in each of the executive committees of the fund. The law also stipulates that the employer representatives should not include any senior managers<sup>28</sup>.

Decisions related to the statutes and governing regulations of the fund, benefit levels and contribution rates as well as investment policy are made jointly. However, all decisions related to benefits exceeding the legal minimum are at the sole discretion of the employer. Companies often establish a separate legal entity for the administration of benefits, which were either granted to employees before the introduction of the law, or which supplement the minimum benefits on a voluntary basis.

Every foundation is governed by a board of trustees, which decides on the benefits and funding of the plan, makes asset investment decisions, supervises all activities of the foundation, and provides information to participants and supervisory authorities. Persons entrusted with the management and auditing of a foundation are personally liable for any losses or damages caused willfully. The sponsoring employer has no direct power over the foundation apart from a 50 percent representation on the foundation board. In turn, the foundation board cannot decide to increase benefits if this would force an employer to pay contributions in excess of the legally mandated equal matching of employee contributions. Thus, the effectiveness of pension fund management is greatly dependent on consensus between employers and foundations.

Conflicts are most likely to arise with respect to the use of excess plan reserves. The foundation board may theoretically use any such surplus to grant benefit increases. If the employer would then threaten to reduce contributions accordingly, such move would be made impossible. Assets of the foundation, however, cannot be taken out by employers or any of their creditors (Nussbaum and Mosberger 1994). Any moves to provide non-regular benefits for certain groups or early retirement must be considered by the board within the legal and financial framework of the pension plan and, if necessary, accompanied by amendments to the statutes or additional contributions.

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<sup>28</sup> This is a rare example of absence of common sense. While the measure aims to create a greater balance of influence between worker and employer representatives, it may inadvertently deprive foundation boards of the professional expertise of senior managers. The use of experienced professionals as trustees may have contributed to the greater sophistication and higher investment performance of Anglo-American pension funds.



Many smaller companies join a pooled pension foundation to avoid the considerable amount of administrative work involved in setting up their own independent foundation. Pooled foundations can be autonomous or established and administered by life insurance companies, banks, pension consulting firms, or employers' associations. In such pooling arrangements, the individual occupational funds keep their own statutes, regulations on contributions and benefits as well as their investment committee. In addition, a joint foundation board is established, which is composed of representatives of the affiliated funds and the managing life insurance company or bank. This board is responsible for cash flow and account management, benefit administration, and the investment of assets according to the provisions of the law. Additional investment restrictions may be imposed by the foundation board, which must be accepted by the affiliated funds. The individual funds are administratively and actuarially separated, but in most cases, their assets are invested jointly. If an affiliated company or pension fund defaults, the pooled foundation is not liable. Instead, the respective fund is assessed individually and, if applicable, supported with resources from the Guarantee Fund.

**Asset Segregation, Internal Controls and External Custody.** The Swiss law requires the creation of a separate legal entity and the segregation of assets from those of the sponsoring employer. The management of the pension institution is responsible for the maintenance of separate accounts, the administration of contributions and benefits, and the investment of assets. As already noted, managers, auditors and pension experts are personally liable for any losses suffered by the pension fund as a result of breach of duty or gross negligence. However, there are no detailed requirements on the efficacy of internal control systems and no specific provisions for the use of external custodians.

Helbling (1991:344) mentions a rather simplistic view of asset segregation that involves the mere use of separate safes for the safekeeping of securities<sup>29</sup>. There is no requirement to create robust internal control systems in which internal custodians would aim to prevent the misappropriation of funds and would also be responsible for ensuring that asset managers comply with all asset allocation rules (those imposed by the authorities as well as those established by the board of trustees or its investment policy committee). To enable internal custodians to discharge their duties, they should have a direct reporting line to the board of trustees as well as to the supervisory agency. There is also no legal requirement that any pension funds, large or small, that do not operate such stringent internal control systems must employ external custodians. And no indication that external custodians should be selected from an approved list of authorized custodians with adequate human, technical and financial resources to provide an efficient and effective custodial service.

The law places clear limits on the loans and investments that pension funds can make in their sponsoring employer, although these are high by the standards of Anglo-American

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<sup>29</sup> This is another example of lack of common sense in the regulatory framework. It appears to be placing excessive trust in the integrity of employers and pension fund managers.

countries<sup>30</sup>. Pension funds are also required report to their supervisory authority any employer contributions that have not been paid for three months. But without adequate internal control systems, breaches of these important rules could go undetected for long periods and could endanger the financial security of the pension funds. These problems can be very important in the case of small pension funds that are established by small employers but are not insured.

**Appointment of Auditors and Pension Experts.** In contrast to the lax treatment of internal control systems and the use of internal or external custodians, the law is very clear on the appointment of auditors and pension experts. Both of these must be independent from the founders and managers of the pension funds.

The duties of auditors include the annual verification of compliance with the law and its implementing regulations and the legality of pension fund operations (including the receipt of contributions and payment of benefits as well as the management of assets). Auditors are also required to examine the annual accounts of the pension institution and to submit a written report to the board of trustees on the findings of their audit.

Pension experts are required to determine periodically that pension institutions are able to meet their obligations and that the terms and conditions of their pension plan comply with legal provisions. Pension experts play in this sense a role similar to that of appointed actuaries in Anglo-American countries, although pension experts may also include lawyers, accountants and others. Pension experts must have a federal diploma of experts in pension insurance.

Both auditors and pension experts are required to report to the competent supervisory authority any infractions of rules by pension institutions as well as any problems that would require immediate intervention. They must also notify to the competent supervisory authority the termination of their contract.

Auditors and pension experts address some of the issues that would be the responsibility of custodians. But their involvement is infrequent and does not cover day-to-day operations. They are therefore unable to prevent a misuse or misappropriation of funds, although their involvement ensures that any malpractice does not go undetected for too long.

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<sup>30</sup> Claims on employers must be limited to less than 20 percent of pension fund assets if they are not guaranteed or secured but they can be as high as 100 percent if they are secured by real estate and other collateral or guaranteed by a public authority. Thus, public sector funds can effectively operate in an unfunded basis without violating the law.

### 3.5 Coverage: Affiliates and Beneficiaries

**Affiliates.** The law mandates compulsory coverage for all workers in dependent employment whose annual income exceeds a minimum level that is set annually and is equal to the maximum pension from the public pillar. In 1999, this was equal to CHF 24,120, equivalent to about 40% of average earnings. Persons earning less than this amount will reach a replacement rate of at least 60 percent through their public pension alone and thus their compulsory participation in the second pillar is not deemed necessary. Enrollment is mandatory at age 17 for death and disability benefits and at age 24 for retirement benefits<sup>31</sup>. Compulsory coverage ends at termination of employment, at retirement, or when the income of the insured worker falls below the minimum threshold.

There is considerable difference in the compulsory coverage of the first and second pillars. In addition to workers earning less than the stipulated minimum and those of less than 24 years of age, self-employed persons as well as unemployed workers, disabled workers, and those working for less than three months are not subject to compulsory participation, but may enroll on a voluntary basis. No estimates of the number of eligible employees are available but this is clearly much smaller than the total labor force.

Insured workers have no choice of fund in which they make contributions as they have to join the pension institution established or selected by their employers. However, when they change employment they may leave their accumulated capital with the pension fund of the company from which they are leaving. Workers may thus belong to several funds, only one of which can be active.

Before 1985, slightly more than 50 per cent of the Swiss labor force was covered by occupational pension schemes. The introduction of the compulsory system led to a strong growth of second pillar coverage. Between 1984 and 1987, the number of insured workers increased by 67 percent compared to annual increases of about 3 percent before the law was passed. In 1997, the second pillar covered an estimated 3.1 million employees (Table 20), of which about two thirds were male and one third female. These figures include some double counting as many insured workers belong to more than one pension fund. The correct number of insured workers is below 3 million, probably around 2.8 million. This would correspond to 74 percent of the labor force.

However, non-compliance is much smaller than these estimates might imply. Recent years have seen a decline in coverage, perhaps because of the economic difficulties of early and mid-1990s, the growth in unemployment and the increasing use of disability pensions by retrenching companies in declining industries. Taking account of all those who are not subject to compulsory participation and comparing with the number of eligible employees, effective

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<sup>31</sup> Enrolment is compulsory as of the 1<sup>st</sup> of January after reaching the respective age.

coverage is likely to be well above 90 percent. In fact, only 2,500 employees are affiliated with the Supplementary Institution, the residual fund that covers all uninsured eligible workers.

**Beneficiaries.** Retirement ages are currently set at 65 years for men and 62 years for women. Early retirement is possible according to the statutes and regulations of the individual pension funds. Unlike the number of affiliates, which fell in recent years, the number of beneficiaries has increased steadily over time and reached an estimated 0.67 million in 1997. Nearly half of benefits are paid as survivor and disability pensions with the number of old age retirees around 0.35 million. The ratio of beneficiaries to affiliates has increased steadily from 17 percent in 1970 to 22 percent in 1997. Old age pensions amounted to 0.35 million in 1996 or 30 percent of old age people. Thus, the second pillar still has a long way to go before it reaches universal coverage of old people (Table 21).

### 3.6 Contributions

The pension funds in the second pillar are basically free in their choice of financing mechanism as long as they are able to meet their obligations. The funds' financial resources must be sufficient to cover expenditure for the old age, disability and survivors' pensions and the compulsory transfers that must be made to the Guarantee Fund (see below). The majority of funds have chosen the mechanism of full funding. However, the cantonal pension funds, which tend to operate as defined benefit plans, are allowed to be partially funded. Because of the presence of government guarantees they are legally allowed to be underfunded by up to 25 percent of their actuarial liabilities.

Except for the guarantees given to public sector pension institutions, the second pillar is based exclusively on contributions by employers and employees and the investment income earned on accumulated reserves. Unlike the first pillar, government authorities are not required to make any contributions. Compulsory contributions are levied only on the "coordinated earnings" of covered workers. These are set each year as the income between the maximum public pension and 3 times that level. In 1999, the lower and upper limits amounted respectively to CHF 24,120 and CHF 72,360. These correspond to about 40 and 120 percent of average earnings. Thus, the maximum applicable income for compulsory contributions to the second pillar is CHF 48,240. The minimum applicable income corresponds to 1/8 of the maximum pension in the public pillar or CHF 3,015. This is used in all cases where the coordinated income of the insured worker is lower, i.e. it is used for all workers who earn more than CHF 24,120 but less than CHF 27,135.

The law sets the minimum and maximum amount of "coordinated income" on which compulsory contributions and the legally required benefits must be based. Individual pension plans may impose no upper limit on the covered income and may also dispense with the lower threshold. The former would enable high-income workers to attain a reasonable replacement rate from both pillars, while the latter would allow low-income workers to participate in the

second pillar for the whole of their wage income and thus benefit more fully from the contributions made by employers.

In 1996, out of 4285 institutions with affiliates, only 689 funds (16% of the total but covering 36 percent of affiliated workers) applied the legal limit on coordinated income. A small number (32) applied a limit below the legal limit, 356 institutions applied a ceiling of up to twice the legal limit and 814 funds applied a ceiling that was higher than twice the legal limit. However, the largest number of pension funds (2394 or 56 percent of the total and accounting for 39 percent of affiliates) applied no ceiling on the level of coordinated income.

Unlike most other countries with compulsory second pillars (Argentina, Chile, Mexico, Peru, Australia, Hungary, Kazakhstan, or Poland), the rate of contribution for the Swiss second pillar is not fixed by law. Contribution rates are set by each pension fund. Employers' contributions, however, must be at least equal to the amounts contributed by the employees. There appears to be a wide variation in the pattern and rates of contribution specified by different plans. Data for 1996 show that 1490 (34 percent of all funds with affiliates) applied a fixed contribution rate on all affiliates irrespective of their age or seniority, while 2318 funds (54 percent of the total) varied the employee contribution rate by age or seniority. The first group covered 1.15 million affiliates (37 percent of the total) and the second group 1.82 million affiliates (58% of the total).

The remaining funds either did not require any employee contributions or used a different system. The vast majority of those funds that imposed a uniform contribution rate applied a rate between 5 and 9 percent of insured earnings.

Total contribution revenues by all second pillar institutions amounted in 1997 to CHF 24 billion, corresponding to approximately 11 percent of the earnings covered by the first pillar. Thus, the total contribution rate for the first and second pillar, including old age, survivors and disability pensions and the transfers made by the federal and cantonal governments, amounts to 24.3 percent of covered earnings.

Contribution revenues increased from 3.8 percent of GDP in 1970 to over 6.5 % in the 1990s (Table 22). Employers account for 63 percent of all contributions and thus provide substantially more than half the total. The higher share paid by employers may be explained by additional contributions made in defined-benefit plans.

### **3.7 Benefits**

The retirement benefits provided by the second pillar depend on the design of the individual occupational pension plans. In general, benefits are paid in the form of pensions rather than lump sums, but exceptions are made for very low amounts of retirement capital and for the purchase of housing. Lump sum payments are also made when workers become self-employed and when they permanently leave Switzerland. In all cases, the spouse's agreement is required.

In case of divorce, the lump sum is split between the two ex-spouses. Lump-sum withdrawals must be requested three years before retirement (in an effort to reduce moral hazard), but in practice most plans let people opt at retirement.

The application of quasi-compulsory annuitization implies that the accumulated capital is not bequeathable to the heirs of covered workers. However, occupational pension plans are required by law to provide pensions to dependent children at the time of retirement. These are not survivor orphan benefits but additional pensions for retired workers, who happen to have young children. The role of these pension benefits is unclear, but their aggregate amounts are insignificant. However, their existence adds a redistributive element in the second pillar and helps to confuse its objectives.

Total benefits increased from CHF 1.3 billion (1.5 percent of GDP) in 1970 to CHF 16 billion (4.4 percent of GDP) in 1997 (Table 23). Pension payments accounted for 88 percent of total benefits in 1970 but their share of total benefits has fallen steadily and now accounts for 81 percent of the total. The average old age pension from the second pillar amounted in 1996 to CHF 25,027 and the average lump sum payment to CHF 93,500.

Unfortunately, it is not possible to add the average pension from the second pillar to that received from the first pillar in order to obtain the average pension from both pillars. This is because the pension from the second pillar is based on the concept of coordinated earnings and is likely to apply to a typical worker with a much higher total income than the typical recipient of the average public pension.

**Defined Credits.** The law defines the minimum requirements based on the concept of defined credits. Retirement benefits are calculated based on "old age credits" accruing in "shadow" or "notional" individual retirement accounts. Interest is also credited in these accounts. The minimum rate has been set at 4 percent since 1985. Assuming an average wage growth of 4 percent, this interest rate would enable the pension fund to keep the ratio between retirement benefit and insured earnings, i.e. the replacement rate, constant.

By targeting a certain replacement rate, this method of calculation introduces an element of defined benefit schemes into defined contribution plans<sup>32</sup>. The old age credits are calculated as percentages of the coordinated income scaled according to age groups in order to reach a maximum retirement capital equivalent to 500 percent of the annual coordinated income for men at age 65 and 479 percent for women at age 62 (Table 24).

Defined benefit plans usually aim for higher replacement rates that are calculated on the covered earnings. Of affiliates covered by defined benefit plans, 80 percent belong to funds that

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<sup>32</sup> The Swiss second pillar may be seen as an early example of the use of notional accounts albeit on a funded basis (unlike the notional defined contribution system developed by Swedish actuaries that is unfunded). It may also be seen as an early example of the use of cash balance plans.

promise a replacement rate ranging from 60 to 74 percent. As already noted, a large number of funds impose no limit on the coordinated income that is taken into account, while many others impose a limit that is higher than the legal amount.

**Annuity Conversion.** The accumulated retirement capital is converted to an annual pension by using an annuity conversion factor. The law and its implementing regulations stipulate a minimum annuity conversion factor of 7.2 percent. This has remained unchanged since 1985 despite considerable fluctuations in interest rates and a persistent gradual increase in longevity. Given a full career contribution period, the mandatory occupational retirement pension thus amounts to 36 percent of coordinated earnings for men and 34.5 percent for women. The annuity conversion factor falls by 0.2 for every year of earlier retirement and increases by 0.2 for every year of later retirement. These imply a growing accrual decrement in the annual pension for each additional year of early retirement and a declining accrual increment for each additional year of late retirement.

The conversion factor of 7.2 percent corresponds to a single annuity for a period of 20 years at a 4 percent discount rate and an initial commission of 2.15 percent. Alternatively, it corresponds to a joint and 60 percent contingent annuity<sup>33</sup> where the average covered worker has a life expectancy of 17 years, his or her spouse survives for an additional 5 years, the discount rate is still 4 percent, and the initial commission is 2.53 percent. Compared to voluntary annuities obtained from insurance companies, the conversion factor of 7.2 percent appears quite reasonable. These calculations do not take into account any bonus payments made to compensate workers for the effects of inflation. Second pillar pension benefits are not indexed to inflation but pension funds make ad hoc adjustments depending on their financial situation. Without detailed data on projected mortality rates of compulsory and voluntary annuitants and inflation adjustments it is not possible to assess the “fairness” of the resulting pension payments<sup>34</sup>.

A major weakness of the compulsory system, which is shared by most public and private compulsory pillars, is that it forces all retiring workers to purchase the same type of annuity, irrespective of their individual circumstances and needs. But assessing the potential

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<sup>33</sup> A contingent annuity is one where the beneficiary continues to receive the full pension if his or her spouse dies but the pension reduces to a pre-specified level (60 percent in the Swiss second pillar) if the main beneficiary dies.

<sup>34</sup> The 1998 annual report of the Federal Office of Private Insurance suggests that the implied rate of return is higher than 5 percent. A 5 percent discount would produce a 7.2 percent annuity conversion if the life expectancy of a single immediate annuity was 23 years (with a commission charge of 2.88 percent) or if a joint and 60 percent contingent annuity was paid for 20 years to the main beneficiary and for an additional 6 years to the surviving spouse (with a 2 percent commission charge). No data are published on the projected mortality tables for annuitants but the FOPI remark implies a substantial increase in longevity. An alternative interpretation is that bonus payments add more than 1 percent to the discount rate. To the extent that these projections are validated by longevity trends in Switzerland, they should raise concerns about the exposure of insurance companies offering fixed annuities to a large reinvestment risk arising from the mismatching of the duration of their assets and liabilities (see below).

adverse impact on economic welfare of this provision would require considerable more data. Some of these would need to cover individual circumstances from the point of view of financial standing, socioeconomic background, mortality experience, and risk tolerance, while other data would need to focus on the solutions and outcomes that greater choice in a more competitive environment could offer.

**Disability and Survivor Pensions.** The compulsory system also requires the provision of disability and survivors' pensions. The Swiss system differs from pension reforms in Latin American countries where responsibility for disability pensions has been shifted to the private pillar. In Switzerland disability pensions are provided by both pillars.

Disability pensions are calculated in a similar way to old age benefits but also take account of projected credits but without interest. The degree of disability and the remaining years until regular retirement are taken into account. Pensions for widows amount to 60 percent of the old age pension and pensions for children and orphans to 20 percent. Occupational disability and survivor pensions may be reduced if the sum of total benefits from the first and second pillars exceeds 90 percent of the previous annual earnings of the insured worker.

The financing of disability and survivor pensions is determined by the rules of the pension plan. One approach that may be followed by employers who apply the same contribution rate on all employees and who do not wish to increase their own contributions above the legally required amount is to apply a declining share of contributions to the financing of disability and survivor benefits (Table 25).

**Inflation Indexation.** Adjustment to increases in the cost of living is mandatory every 3 years for disability and survivor pensions. Old age pensions, however, are adjusted at the discretion of the individual pension funds according to their financial situation. As already noted, allowing for these adjustments, the total rate of return for pensioners of the second pillar would be higher than the discount rate implied in the minimum annuity conversion factor.

**Transition Generation.** For the entry or transition generation, defined as all persons above the age of 25 at the date of effectiveness of the law, pension funds are obliged to take special measures within their financial possibilities. Beneficiaries during the first 9 years of the law received minimum benefits determined by the Federal Council and were financed from an additional contribution set aside by the funds.



### **3.8 Tax Treatment**

Switzerland is one of few countries in the world that applies a broadly consistent tax treatment of all pillars of the pension system. There are small differences in the treatment of the three pillars. The general approach is EET, i.e. contributions and investment income are exempt, but benefits are taxed. Moreover, unlike other OECD countries, no ceilings are imposed on investment income, while lump sum payments are subject to tax.

The main deviation from this approach is the limit imposed on contributions to the third pillar. There is also a proposal to place a limit on the tax-exempt contributions in the second pillar. The proposed salary limit is CHF 300,000, which is 5 times the level of average earnings. As no ceiling is imposed on the contributions to the public pillar, this proposal is likely to face considerable opposition.

Another exception to the consistent application of rules was the exemption of second pillar benefits from taxation for the first 15 years of the compulsory system. A further deviation concerns the special treatment of withdrawals for housing, which are not taxed as lump sums but are first converted into equivalent annuity income and taxed accordingly. Although they represent departures from the application of a fully consistent tax treatment on pensions, the Swiss system suffers from fewer such problems than any other country.

### **3.9 Vesting and Portability**

As in all other aspects of private pension provision, the rules on vesting and portability of pension rights are set out in the pension plans, but subject to some minimal legal provisions. A new law on the portability of vested benefits was enacted in 1993 and became effective on January 1, 1995. This extended minimum legal rights to super-obligatory benefits. Upon changing employment, the beneficiary has a choice of leaving the retirement capital with the pension fund, provided the old employer agrees, or transferring it to the fund of the new employer.

The transfer value is calculated according to three different methods and the highest sum resulting from these calculations is applied. The first method varies depending on the type of plan. In defined contribution plans, the transfer sum is equal to the contributions made by and on behalf of the affiliate plus accrued interest of at least 4 percent annually. In defined benefit plans, accrued pension rights are equal to the insured final benefits for a full career worker multiplied by the fraction of a worker's service (and completed contribution years) in relation to a full career necessary to receive the final benefits. The present value of accrued benefits is then established by accepted actuarial rules and transferred to the new pension fund. The entry capital necessary upon joining a defined benefit pension plan at mid-career is calculated accordingly. If the transfer sum is insufficient, additional capital may be necessary. Employers

are obliged to let new employees buy into the plan if they wish. Some employers even offer to make up for part of the shortfall and also give loans to enable employees to buy into the plan.

The second and third methods use different definitions of the minimum transfer value. According to the second method (given in article 17) the transfer value is equal to the entry capital a worker may have paid into the fund plus interest and his own contributions during service increased by 4 percent per year after age 20 but up to 100 percent of his contributions<sup>35</sup>. This amount may be reduced by premiums charged for disability, survivor and other benefits (administrative costs are not listed as deductible items). The third definition (given in article 18) is equal to the balance outstanding on their “notional” retirement accounts. When a worker does not immediately join a new pension fund, because of unemployment, part-time work, earnings below the coordinated threshold or other reasons, the transfer sum is held in a frozen account or is placed in a special life insurance contract, which is dissolved when the worker joins a new fund.

The new law also addresses the treatment of transfer values in cases of marriage and divorce. Since the new law may result in actuarial and financial difficulties for some plans, the Guarantee Fund of the second pillar will close gaps, which are due to the law until the year 2000.

Before the enactment of the new law, there were disputes regarding the vesting and portability of super-obligatory benefits, while before the introduction of the compulsory system in 1985, vesting of employer contributions was graded, starting on the fifth year of joining a plan and reaching 100 percent on the 30<sup>th</sup> year (Hepp 1990:86).

### **3.10 Withdrawal for Housing**

The individual retirement capital in the second pillar may be used for the purchase of owner-occupied housing. The funds may be used for the purchase of housing, investment in homes, participation in housing cooperatives and for repayment of the mortgage principal but not for the financing of home maintenance or mortgage interest payments. Plan participants may withdraw or pledge the full portable amount they would be entitled when leaving or switching

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<sup>35</sup> The wording of this provision is both unclear and unsatisfactory (article 17 paragraph 1 of the law on portability). The annual 4 percent credit is not in the form of interest that compounds annually but rather an additional payment that results in a graded vesting of some of the employer contributions. If the employer and employee contribution rates are equal, then 100 percent of employer contributions will vest after 25 years. But if the employer contribution rate is double the rate of employee contributions, only half the total employer contributions will vest after 25 years. Finally, no provision is made for interest on the contribution amounts, whereas the entry capital is credited with interest. It would appear that the wording of the law penalizes young workers who move jobs frequently. For older workers and those with longer service, the definition of article 18 would produce a higher transfer value.

the fund. The minimum withdrawal amount is CHF 20,000 and withdrawals can be requested only once every five years.

After the age of 50, participants may withdraw the higher of the amount corresponding to their entitlement at age 50 or half of their current entitlement. This regulation is meant to ensure that older beneficiaries are left with some retirement capital for the provision of pensions. The lower entitlement to disability and death benefits can be compensated for by purchase of additional insurance coverage at the expense of the participant.

The amount withdrawn for the purchase of housing is taxable. For tax calculation purposes, the amount is converted to an annuity and taxed accordingly. The same applies to pledged capital that is claimed by the creditor. Taxes are payable to the cantons and vary considerably depending on the canton of residence as well as on the amount withdrawn. If the purchased housing is sold or rented, the withdrawn amount must be repaid to the pension fund; the participant may reclaim the tax payment on which no interest is paid.

Before 1995, participants could withdraw or pledge only half of the compulsory part of their retirement capital three years before retirement at the earliest. Also, pension funds were allowed to provide mortgages to their participants and other persons within the legally established investment limits. The share of mortgages from pension funds, however, has been declining from 7 percent in 1975 to 4 percent in 1992. At the same time, the share of mortgages provided by banks increased from 78 to 88 percent. Pension funds usually are at a disadvantage, since they lack the resources to administer the mortgage business. Pension funds also rented housing units to their affiliates, usually in apartment blocks that they owned. An interesting aspect of the sound approach to fund regulation that is followed in Switzerland is that any subsidies on mortgage interest rates or on housing rents would not be incurred by the pension fund but directly by the sponsoring employer<sup>36</sup>.

The Swiss housing market is characterized by a very low rate of home ownership of only 31 percent, compared to 54 percent in France, 63 percent in the U.K. and 64 percent in the U.S. The average rate hides large differences within Switzerland; in rural areas, 50 percent of the population own their homes while in the urban areas only 24 percent do so. The low number of homeowners can be attributed to several factors. Home ownership is not encouraged by Swiss tax laws since owner occupation is taxed and high taxes are levied on property sales and gains from real estate appreciation. In cities, home ownership is especially low since partial (etage) ownership in houses was prohibited until the mid-sixties. In spite of the low home ownership rates, more than 66 percent of all housing is owned by individuals.<sup>37</sup> Thus,

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<sup>36</sup> A further aspect of the common sense exhibited in Swiss arrangements is that half the rent is indexed to prices and half to mortgage rates (Helbling 1991:327).

<sup>37</sup> The remaining third is owned to 8 percent by construction and real estate companies, 5 percent by housing cooperatives and 21 percent by others which includes the public sector, private companies, and pension funds.

homeowners are at the same time renters and a considerable number of individuals own more than one property.

Real estate investment of pension funds is often blamed for pushing up property prices and rents and thus leading to a collapse of the Swiss housing market. However, the share of dwellings owned by pension funds was less than 8 percent in 1990, which does not indicate a strong influence of pension funds on the housing market. The new law of 1995 is not expected to have a major impact on home ownership. The amounts that participants will be able to withdraw or pledge will not be very significant for younger participants with families, who are most likely to be interested in purchasing homes.<sup>38</sup> The administrative burden will increase significantly both for the pension funds and the cantonal tax administrations. It seems more likely that existing mortgages might be swapped for more favorable new ones, which make use of the retirement capital. For the pension funds, both the new housing withdrawal and the portability laws might lead to increased substitution of defined benefit with defined contribution plans, since full portability and capital withdrawal increase considerably the uncertainty in the financing of future liabilities.

### **3.11 Valuation and Asset Allocation Rules**

The law requires pension fund assets to be managed prudently to ensure the security of assets, achieve a reasonable return on investments, maintain a suitable diversification of risks, and allow for the liquidity requirements of the plan. The board of trustees is responsible for setting the direction of investment policy, although asset allocation has to observe quantitative limits that have been imposed by the regulatory agency. The limits have been adjusted over time but have in aggregate been non-binding because of the conservative investment policies pursued over the years by most Swiss pension funds. There is, however, wide variation in the investment policies pursued by individual pension funds. Exemptions from the quantitative limits are approved for pension funds that apply for them, provided they satisfy the supervisors about their ability to manage the more risky assets.

Investment policies have also been shaped by the valuation and accounting rules that are applied by Swiss pension funds. The law provides for several alternative methods of asset valuation and allows the pension funds to define their accounting policies within the context of accepted Swiss practice. The law requires that accounting and valuation rules must be consistent across assets and liabilities and must not be changed without adequate justification.

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<sup>38</sup> For example, a 40 year old male participant earning the average income of about CHF 60,000 with a contribution period of 16 years would be entitled to withdraw CHF 64,650. Following the guideline that current costs should not exceed one third of the annual income, housing could be purchased for approximately CHF 350,000.

A very recent change in approach has placed strong emphasis on prudent asset and liability management and has expanded the scope from investments in equity and other assets by funds that demonstrate professional management. Thus, although quantitative limits are still applied, the “prudent expert” approach seems to be gaining acceptance.

**Valuation Rules.** Pension funds may use several methods of valuation, ranging from purchase or book value to adjusted book value, nominal value, yield-equivalent value, market value, and average market value. Hepp (1990:204-205) states that the most common valuation methods used by pension funds were the lower of book or nominal value for fixed income securities and the lower of book or market value for equities and other real assets. Under this approach, investment income includes received interest and dividend income and realized capital gains but excludes unrealized capital gains.

These valuation rules are extremely conservative and have distorting effects on both investment policies and financial reporting. Coupled with the legal provision that pension funds must be able to meet their obligations at all times, which is equivalent to imposing a minimum funding requirement, they discourage investing in equities and valuing them at market prices. They favor investing in bonds that generate regular income and have more stable values. Conservative valuations tend to create large hidden reserves and understate the true share of equities and other real assets, such as property, in the portfolios of pension funds. Failure to use market values may also make a mockery of applied quantitative restrictions since the true exposure to individual assets or to particular classes of assets may be understated.

The valuation rules used by pension funds have been changing in recent years in response to increasing pressures for better investment returns, the strong performance of equity markets, and changing asset allocations. A survey conducted by Robeco (1998:27-33) among some 240 large pension funds found that in the case of bonds 46 percent of pension institutions use nominal values, while 33 percent use market values, with only 15 percent using the lower of the two. In the case of equities, market values are used by 71 percent of pension institutions and book values by 15 percent.

**Asset Allocation Limits.** Investment regulations have long imposed quantitative restrictions on the allocation of assets of Swiss pension funds. In earlier periods, these were more restrictive. For instance, before 1985 investments in foreign equities were permitted only up to 10 percent of the fund and only for foreign equities listed in a Swiss stock exchange. In 1985 the requirement of listing in a Swiss stock exchange was removed and in 1989 the limit was increased to 25 percent.

The currently imposed limits include a 30 percent limit on domestic equities, 50 percent on domestic real estate, and 75 percent on mortgages (Table 26). The limits on foreign assets are 30 percent on equities, 30 percent on CHF bonds, and 20 percent on foreign currency bonds. Additional limits are placed on combinations of asset classes. The total share of foreign bonds may not exceed 30 percent, total domestic and foreign equity 50 percent, foreign

currency investments 30 percent, and real assets (real estate and equity) 70 percent. There are also limits on exposure to individual issuers, although no limits are applied on bonds and deposits held with individual banks and insurance companies.

The applied investment limits are generally non-binding as pension funds pursue conservative investment policies. However, the applied limits do not prevent excessive concentration of risks as well as inefficient practices. For instance, small pension funds may place all their assets on deposit with one bank or they may invest most of their assets in one mortgaged property. Moreover, claims on employers are still permitted to a much greater extent than in Anglo-American countries. Historically, pension funds held large claims on employers. In the 1940s, these amounted to over 25 percent of total assets for private sector funds but declined to less than 5 percent since the mid-1980s. Public sector pension funds still had nearly 60 percent of their assets in employer claims in the mid-1980s (Hepp 1990:215). These were still as high as 31 percent of assets in 1996 (FOS 1998:21).

Allowing pension funds to hold large uninsured and unguaranteed claims on their sponsoring employers undermines the principle of external funding on which the second pillar is based. As already noted, public sector pension institutions are allowed to be formally underfunded by 25 percent if their liabilities are guaranteed by the federal or cantonal governments. Allowing for another 30 percent of assets to be represented by loans to employers, often arising from contribution arrears, reduces considerably the effective level of funding. There is a gradual move away from holding claims on employers, but the pace of change could be accelerated by permitting only equity investments in the sponsoring employer, up to no more than 5 or at most 10 percent of the fund, and replacing existing claims with marketable bonds.

As already noted, a very recent change in approach emphasizes prudent management. This is likely to free the pension funds that demonstrate a sophisticated and professional management from the traditional quantitative limits.

### **3.12 Investment Performance**

The Swiss pension funds have accumulated huge resources and have become a major force in the domestic financial system. Their total assets increased steadily over the years. From CHF 33 billion (36 percent of GDP) in 1970, they reached an estimated CHF 379 billion in 1997, equivalent to 102 percent of GDP. This excludes CHF 85 billion (23 percent of GDP) that were managed by insurance companies. Total pension assets thus amount to 125 percent of GDP. Switzerland is one of four countries where the total assets of institutional investors exceeded 200 percent of GDP in 1997<sup>39</sup>.

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<sup>39</sup> The other three are the Netherlands, the United Kingdom, and the United States. It should be noted that the ratio of assets to GDP fluctuates with the cyclical behavior of both asset prices and economic

**Investment Policies.** The investment policies of the pension funds used to be extremely conservative and did not reach the limits of any type or category of investment. Rather than diversifying in order to maximize both security and yield, the fund managers traditionally interpreted managing funds within the legal limits as good pension fund management.

However, over the past decade or so, pension funds have steadily increased their equity investments as well as their investments in foreign securities (Table 27). Equity investments rose from 8 percent in 1987 to 21 percent in 1996. This includes employer equity, other domestic equities and foreign equities. Total investments in foreign securities have also been rising and reached 16 percent of total assets in 1996. Investments in real assets, covering both equities and real estate, amounted to 36 percent of assets, up from 19 percent in 1970.

Compared with other countries with large pension funds their holdings of equities continue to be small. Private sector pension funds, especially the larger funds, are reported to have much higher proportions of their assets invested in equities. But even large funds pursue more conservative policies than would be justified by the nature of their liabilities. As reported in Robeco (1997:70), large pension funds with assets in excess of CHF 500 million intended to raise their total equity allocation from 27 percent in 1996 to 35 percent five years later. As noted in the Robeco study, these proportions are quite modest by comparison to the patterns prevailing in US (50-60 percent) or UK pension funds (70-80 percent).

Insurance companies and banks play a large part in the management of pension fund assets. As already noted, insurance companies directly managed CHF 85 billion of pension fund assets in 1997 as a result of collective insurance contracts. Banks participate in the second pillar mainly through asset management rather than direct administration of second pillar foundations. They manage more than half of the total second pillar assets. Yet, compared to the total assets administered by Swiss banks, the assets of second pillar institutions are not very important. Pension fund assets correspond to only about 10 percent of the total assets managed by Swiss banks.

**Investment Returns.** Given their conservative investment policies, it is not surprising that the investment returns of Swiss pension funds are reported to be very low (Table 28). Although international comparative studies point to the negative correlation between asset restrictions and investment returns (European Commission 1999:64), the fact that asset limits are not binding suggests that the limits as well as the result reflect conservative policies.

There are no comprehensive and systematic data on the investment returns of Swiss pension funds, nor on the interest rates credited on the “notional” individual retirement accounts

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activity. Nevertheless, it is a good indicator of the level of development of pension funds and institutional investors.

that they have to maintain. As already noted, the funds must post a minimum nominal return of 4 percent but may of course offer a higher rate. This would be of limited relevance for defined benefit plans, where the investment risk is assumed by employers, but would be very important for defined contribution plans (as well as for the calculation of transfer values when workers change employers). Yet no information is available as to the range of interest rates credited by pension funds.

The aggregate statistical information included in the bi-annual surveys of the Federal Office of Statistics is based on reported book values and excludes unrealized capital gains. It is therefore of little reliability and usefulness. Davis (1995:127-157) estimated the investment returns of Swiss pension funds for the period 1966-1990 by using asset portfolios and annual total returns on market indices of different instruments and assuming one-year horizons. This approach assumes that pension funds invest in the market index for each instrument and abstracts from transaction costs as well as from the effects of changes in asset allocations within each year. The study found that Swiss pension funds achieved an average real rate of return between 1967 and 1990 of 1.5 percent per year. With average inflation amounting to 4 percent over this period, this translates into a nominal return of 5.6 percent. Real returns were much higher in the two subperiods 1976-80 and 1981-85, but were negative in the early 1970s and in the late 1980s.

The returns of the Swiss pension funds reported by Davis (1995:150) compared unfavorably with those achieved by pension funds in the United Kingdom, Germany, Japan, the Netherlands and Denmark. Rather surprisingly they were not much lower than those reported for pension funds in Australia, Canada and the United States<sup>40</sup>. The weak performance compared to German and Danish pension funds, which also have a low exposure in equities, is due to the policy of low real interest rates on bonds and mortgages pursued by the Swiss authorities over this period. The average real rate of interest on mortgage loans was 4.7 percent in Germany, 5.8 percent in Denmark and only 1.3 percent in Switzerland. Similar, if somewhat less pronounced, differences also characterized the average real returns on other long-term loans and on bonds.

Three main reasons can be offered for the persistently low returns achieved by Swiss pension funds. First, the specified minimum return may have become the norm and encouraged conservative policies that protected pension fund managers from the risk of a large shortfall in any particular year. Specifying the minimum rate as an average requirement over the life of an individual account could mitigate this problem as negative returns in any one year could be admissible as long as the average compound rate was no lower than the specified minimum.

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<sup>40</sup> The low average returns for US pension funds, which are reported in Davis (1995), reflect the very poor performance of US corporations and the US equity market in the late 1960s and throughout the 1970s. Since the beginning of the 1980s, US pension funds have reported very high real returns in line with the very strong performance of the US markets.



Second, there was probably little pressure from the public for higher returns. This may be because of the particular design of the second pillar. At one end of the spectrum, high-income workers covered by large company plans effectively belong to defined-benefit plans, where the investment risk is assumed by employers. Moreover, large private sector pension funds, which invest more in equities, probably achieved higher returns than those reported above. At the other end of the spectrum, because of the use of the concept of “coordinated earnings”, low-income workers, who are covered by small company plans that tend to operate defined-contribution plans, rely only to a limited extent (or not at all if their income is below the stipulated threshold) on their private pension for their old age. They are thus little affected by low returns. Moreover, such workers probably benefit from the redistributive effects of the public pillar and have little reason to be critical of the overall system. Middle-income workers participating in DC plans may benefit from high employer contributions and the use of targeted replacement rates. Whatever the reason, there seems to be little criticism in Switzerland of the low investment returns.

Third, the use of a minimum annuity conversion factor that appears to produce a reasonably fair pension payment and a satisfactory replacement rate for workers with average or close to average earnings probably mitigates any criticism. As already noted above, the strongest criticisms have been leveled at the vesting and portability rules of pension funds rather than at their low returns.

In Latin American countries, where pension funds operate like mutual funds, valuation rules specify the method of measuring investment returns and allocating them to affiliated members. In Switzerland, where defined contribution pension funds operate more like “savings accounts” or “pooled endowment insurance policies” than mutual funds, the specification of minimum interest credits on “notional” individual accounts appears to have obviated the need for specifying clear rules on this score. As discussed above, insurance companies offer bonuses if investment returns exceed those that were used for calculating the uniform premiums for insured pension funds. However, it is not clear if workers have a legal right on any returns in excess of the specified minimum that may be earned either by insurance companies or by self-administered private pension funds.

Swiss private pension funds may effectively be operated as cash balance plans. These are increasingly used in the United States and other Anglo-American countries to replace defined-benefit plans. Cash balance plans use notional accounts and stipulate an annual investment return that is credited to these accounts, while employers assume the investment risk. They may thus provide some comfort to workers with a low tolerance for investment risk, but they raise many policy issues relating to potentially weaker incentives for strong investment performance as well as lack of transparency and potential conflicts of interest between pension fund sponsors, asset managers, and covered workers.

Whatever the reasons for the poor investment performance in the past, during the 1990s the returns of Swiss pension funds must have been much higher reflecting the much stronger

performance of equity markets and the capital gains realized in bond markets (as a result of the persistent fall in interest rates). Between 1990 and 1998 Swiss equities produced a total nominal return of 22.1 percent per year and a real return of 19.3 percent. Swiss bonds achieved a total return of 3.8 percent and mortgage rates averaged 4.5 percent, both well above the average rate of inflation that amounted to 2.4 percent. With a growing allocation in equities, the total return of Swiss pension funds must have increased, although it would still be well below that of pension funds in Anglo-American countries.

Data published in the professional publication *Pensions and Investments* (Table 29) show real returns for large Swiss pension funds averaged 12.1 percent between 1995 and 1998. These were much higher than the returns achieved by large Japanese funds and relatively close to those earned by Australian, UK, US and Canadian funds.

### **3.13 Operating Costs**

As in the case of investment returns, comprehensive data on operating costs are not readily available. The data published by the Federal Office of Statistics indicate a low level of costs. Reported administrative costs ranged between 3 and 4 percent of contributions, with reported asset management costs, but excluding interest payments on debt, adding another 3 to 4 percent. Total operating costs amounted to between 6 and 8 percent of contributions or between 40 and 50 basis points of average total assets (Table 30). These numbers are of the same order of magnitude as those reported for UK and South African pension funds. No information on the cost experience of different types of funds or even more so on individual pension funds is available.

However, as noted by the Federal Office of Social Insurance (OFAS 1996:56-59), many employers absorb a substantial part of the administrative costs of the pension funds they sponsor and thus the total costs may be much higher. But because Swiss pension funds are sponsored by employers and individual workers have no choice of fund, very little, if anything, is spent on marketing and on selling commissions to agents. Moreover, the limited provision of data on the performance of funds may also keep costs down. However, what matters for employees is not so much the level of costs as the level of net returns. Little systematic evidence is available linking costs and net returns for pension funds, although competitive markets with pluralistic structures tend to report higher net returns despite higher operating costs.

### **3.14 Guarantee Fund**

The Guarantee Fund of the second pillar is a government-created by privately-managed entity. It is a foundation managed on the basis of private contracts by the association of cantonal banks and by a private management company. Prior to 1990 pension funds were required to contribute to the Fund 0.2 percent of the coordinated income on which their revenues are

based<sup>41</sup>. In 1990 the fee was lowered to 0.04 percent. But following increasing outlays, the fee was raised to 0.06 percent in 1997 and further to 0.1 percent in 1998. This increase was necessitated by the growing number of insolvencies and by the wider responsibilities imposed on the Fund.

The Guarantee Fund provides subsidies to individual funds with an unfavorable age structure as well as transfers to compensate for insolvency of pension funds. The Fund also covers the expenses of the Suppletory Institution. Since the implementation of the new law on portability, it will also provide subsidies to individual funds that face financial difficulties because of the new rules on vesting and portability. The Guarantee Fund used to cover only the obligatory minimum benefits. However, following a change in the law it now extends guarantees to additional benefits up to an insured salary of CHF 108,450.

During recent years, the number of insolvency cases has been increasing rapidly. From 625 in 1991, they reached 2,288 in 1998. Total expenditure for the insolvency cases increased from CHF 5.4 million in 1990 to 109.9 million in 1997, representing an increase from 0.07 to 0.83 percent of annual pension payments. Almost all cases were due to bankruptcy of the sponsoring employer rather than insolvency of only the fund.

Total reserves of the Guarantee Fund amounted in 1997 to CHF 134 billion, down from CHF 295 million in 1993. The Fund suffered an annual deficit of CHF 76 million in 1997, which also helps to explain the increase in the fee. The Fund invests 45 percent of its assets in Swiss bonds, 10 percent in foreign bonds denominated in Swiss Francs, 20 percent in equity, 15 percent in foreign denominated bonds and 10 percent in other assets. Because of the extension of the guarantee to higher benefits, the Fund now covers 7,500 institutions up from the 3,300 institutions that were covered before.

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<sup>41</sup> The fee was initially set at 0.2 percent but this was perceived to be too high and was lowered to 0.04 percent in 1990.

### **3.15 Suppletory Fund**

The Suppletory Fund plays a marginal but important role in the Swiss second pillar. All employers, who fail to establish a separate pension scheme or to join a pooled foundation, are automatically affiliated with the Suppletory Institution. This fund is a pension foundation that is jointly established by employers and trade unions. It is managed by a group of large insurance companies and also enrolls persons applying for voluntary insurance. It covers about 2500 employees and 1.5 percent of all employers are registered. The administrative expenses of the Suppletory Fund are covered by the Guarantee Fund.

### **3.16 Disclosure and Publicity Standards**

Unlike pension funds in Latin American countries, Swiss pension funds are not subject to extensive rules on disclosure and publicity. The funds are required to produce annual reports and accounts, which are submitted to their supervisory authorities. They are also required to inform their affiliates about their individual retirement capital upon request but at least every three years. They are also required to provide detailed statements of the transfer capital when workers change employment.

In general, however, the Swiss pension funds provide little information to the public. The results of the bi-annual surveys undertaken by the Federal Office of Statistics are published with a two-year delay. They contain very limited information on investment performance and operating costs. They also have no data at all on individual funds. Although they contain some information on the structure of different types of funds, this information is of little practical use in the absence of any data on relative performance. Without extensive research effort, workers have no way of comparing the performance of their own fund with other funds.

Because pension funds are employer-based and do not compete for affiliates, little effort and expense are spent on publicity. Marketing campaigns are presumably undertaken by insurance companies and asset managers in trying to win management mandates from the pension funds but these are not addressed to the public at large.

The lack of transparency on the structure and performance of Swiss pension funds is one of the mysteries of the Swiss pension scene, especially when the people voted in a referendum to make participation in such schemes compulsory. As in the case of investment returns and operating costs, the public shows little concern about the lack of transparency. This may be linked to the prevalence of financial secrecy in Switzerland. As already noted, it may also be explained by the satisfactory overall results that the present policies have produced. This may relate not only to the performance of pension funds but also to the overall performance of the economy.

Another possible explanation is that the Swiss public appreciates the benefits that the Swiss financial system and the Swiss economy reap from observing strict rules of financial secrecy as it applies to foreigners. And it may also realize that it would be difficult to insist on complete transparency on the operation of financial institutions for residents but maintain extensive secrecy for foreigners. A practical compromise would be to avoid calls for greater transparency but to rely on the supervisory authorities and financial experts to ensure that pension funds are managed prudently and guarantee the promised benefits in cases of misuse or misappropriation of funds. Of course, it would be very difficult to prove or disprove such conjecture. However, the benefits of acting as a financial heaven have declined in recent years. This is both because foreign financial centers have become more liberal and because there is now greater emphasis on fighting corruption and money laundering. Coupled with growing pressures for better performance it would seem highly likely that calls for greater financial transparency would become louder and more persistent in the future.

### **3.17 Supervision**

Pension funds are supervised by the authorities with which they must register. These range from cantonal supervision agencies for funds operating within the borders of individual cantons to the Federal Office of Social Insurance for funds covering employees of national or international companies and the Ministry of Finance for confederational entities. Life insurance companies, which undertake the management of pension funds under collective insurance contracts, fall under the supervision of the Federal Office for Private Insurance.

The fragmented supervision gives rise to differences in supervisory practice, especially between the cantonal and national level. However, of greater practical relevance is the reliance of supervisory authorities on external auditors and certified pension experts for ensuring that pension funds comply with the rules and maintain appropriate records and accounts. Switzerland is one of the first countries that have imposed a legal obligation on auditors and other experts of financial institutions, be they banks, insurance companies or pension funds, to report to the supervisory authorities any infraction of the rules by the supervised institutions and any developments that require immediate intervention. Auditors and other experts are also required to notify the supervisory agency if their contract is terminated.

Pension funds are required to be audited annually. If the fund is part of a pooled foundation, the administering insurance company and bank must be examined as well. The Federal Office of Social Insurance can issue inspection guidelines to the supervising authority. In general, however, supervision instructions are not very specific. All pension funds are required to appoint certified pension fund experts, who assist the sponsoring firm in the establishment of the pension fund and in accounting and actuarial calculations. Actuarial analyses of the pension funds are to be conducted every 3 to 5 years. There are no set guidelines with respect to the actuarial assumptions to be made for such analyses. The individual pension experts determine the assumptions for wage and liability projections at their discretion.

The pension fund supervisory authorities undertake little off-site surveillance of individual funds and perform limited analyses of the submitted financial returns. They also rely on external experts for detailed on-site inspections and forensic investigations. The task of the supervisory authorities is made more difficult by the fact that pension funds are not required to submit regular quarterly returns in electronic form, but only have to provide annual written reports several months after the end of the calendar year. Any sharp deterioration in the financial position of individual pension funds is unlikely to become known before the passage of between six and eighteen months.

Despite the operation of a Guarantee Fund, supervision is reactive rather than proactive and does not appear to address potential “moral hazard” problems in an effective way. The situation is made worse by the fact that pension funds are allowed to deviate from the prescribed asset allocation rules if they can provide adequate justification on an ex post basis. Departures from accepted prudent practice are more pronounced among smaller pension funds, which are the least able to bear the higher risks of such deviations. As pension funds are now allowed to invest in more volatile assets, such as precious metals and financial derivatives, there is an increased risk that sudden large losses may be incurred but remain undetected for a long period of time. The absence of effective internal or external custodial requirements also allows scope for misappropriation or misuse of pension fund assets by dishonest or unscrupulous employers and fund managers. Recent years have witnessed a growing number of cases of malpractice, although both their frequency and the total losses suffered are still on the low side.

Pension funds are also allowed to self-insure the mortality and interest rate reinvestment risk for the fixed annuity payments into which accumulated capital must be converted. Very small pension funds, those with fewer than 100 affiliates, are required to take special measures on the advice of their certified expert but larger funds are free to determine their own approach. In practice, insurance companies probably insure most of the fixed annuities offered by small and medium-size pension institutions. However, neither the insurance companies nor the pension funds that self-insure are required to undertake periodic dynamic solvency tests (DSTs). These are used in Canada and increasingly other countries such as Australia, Singapore and the United Kingdom, to assess the impact of large and persistent falls in equity prices and/or interest rates on the financial situation of insurance companies and pension institutions.

The large fall of Swiss and European interest rates in the 1990s is already causing concern among insurance companies and pension funds in Denmark, Spain, Switzerland and the United Kingdom. In Switzerland the insurance supervisory authorities have approved a decline in the technical rate used by insurance companies for their voluntary policies from 3.5 to 2.5 percent (OFAP 1998:E17-18). However, both the minimum interest rate for retirement accounts and the minimum annuity conversion factor have remained unchanged. Lowering these rates may not be warranted at this juncture, since they are deemed to be long-term rates, and since both insurance companies and pension institutions have strong capital positions. But

applying a dynamic solvency test and taking necessary measures to ensure the long-term solvency of insurance companies and pension funds would appear essential.

The Swiss authorities are also introducing new mortality tables that are based on cohort mortality data rather than mortality data at any particular point in time. This is a move in the right direction. Cohort tables are introduced at first for the voluntary life and annuity business of insurance companies. However, they should also be developed for compulsory annuities, which may experience different mortality patterns. The new mortality data and more sophisticated financial data should be used for assessing the solvency of both insurance companies and uninsured pension funds.

### **3.18 Future Prospects**

The second pillar has grown to become a very large system in terms of both affiliates and financial assets. Its future prospects are therefore less likely to be associated with further massive growth but rather with major improvements in performance. The system faces a major challenge in strengthening supervision and enhancing transparency. Both of these appear to suffer because of the fragmentation of its structure and the presence of a large number of very small institutions. A consolidation process may be necessary for this and acceleration of recent trends may be appropriate.

In terms of transparency, more frequent and regular reporting of the performance of individual institutions as well as the whole pillar would be warranted. This would inform individual workers and would allow them to exert more effective pressure for improved performance.

The second, equally important, challenge is to improve its investment performance. Pressures for a further relaxation of investment rules are likely to increase and to lead to better performance. There may also be growing pressures for giving employees greater choice in selecting pension funds and in directing their investments. Switzerland may need to follow in the steps of the United States, Australia, Canada and other countries in offering multiple choice of funds within particular pension plans. At present, many large funds are considering the pros and cons of adopting more flexible structures.

Given its record of innovation, Switzerland could be the first country to contemplate seriously the creation of a dual regulatory structure, comprising a heavily regulated part with strong government guarantees that caters for those with low risk tolerance and a less regulated part with strong conduct rules but fewer state guarantees for those seeking a higher return<sup>42</sup>.

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<sup>42</sup> A dual regulatory structure is proposed in Vittas (1998:9).

Another major issue is the development of a more sophisticated market for annuities. The current compulsory annuitization on the basis of a uniform type of annuity may need to be replaced by a more flexible system. In this, compulsory annuitization with a standard annuity product could be limited to attaining a reasonable overall replacement rate, while any additional balances could be linked either to variable annuities or to scheduled withdrawals.



## **IV. THE THIRD PILLAR**

### **4.1 Overview**

The Swiss pension system is a multi-pillar system that comprises 3 basic pillars. However, each pillar is sub-divided into 2 important components and thus it could be argued that the system consists of six pillars. The first pillar covers the ordinary and supplementary benefits. The second pillar covers in practice both the compulsory and the voluntary group (employer-sponsored) benefits. In many cases, the same pension institution offers both types of benefits, while in other cases separate institutions are created. The third pillar covers individual savings and also consists of two parts: pillar 3a, which covers all tied savings that benefit from tax incentives and are linked to retirement saving; and pillar 3b, which does not benefit from tax incentives and can be used freely.

### **4.2 Institutional Structure**

Free savings can be maintained with all financial institutions in Switzerland, and presumably overseas, and they can also take the form of houses or other assets, including ownership of unlisted companies. But tied savings that benefit from tax incentives can only be held with insurance companies and specially authorized banking foundations that operate in Switzerland. The banking foundations are special institutions that are created by banks to operate such accounts. Tied savings must be covered by special retirement contracts. Although the law does not specifically allow the participation of mutual funds, it is possible for tied retirement savings to be invested in mutual funds if the latter are operated by insurance companies or banks.

### **4.3 Coverage, Contributions and Tax Treatment**

Participation in the tied retirement savings plans is open to both employees and self-employed people. Contributions are deductible from their taxable income for all direct income taxes imposed by the Confederation, the cantons, and local communities. Both spouses, if they engage in an economic activity and have earnings, may participate and benefit from these tax incentives. Tax-deductible contributions are allowed as follows:

- For people who are already covered by a second pillar plan, up to 8 percent per year of the upper limit set on “coordinated earnings” used by the second pillar. In 1999, the upper limit was equal to CHF 72,360 and the limit for tied savings amounted to CHF 5,789 per year. It is interesting that this limit is not linked to the earnings of the contributor and thus low-income people can benefit proportionately more than high-income ones from this tax incentive.

- For people who are not covered by a second pillar institution, up to 20 percent of their earnings but subject to a limit that is equal to 40 percent of the upper limit set on “coordinated earnings” used by the second pillar. In 1999, this amounted to CHF 28,944.

#### **4.4 Benefits**

Benefits are paid on retirement or on disability or death. Unlike the benefits of the second pillar which have in most cases to take the form of a life annuity (and are therefore not inheritable), the benefits from a tied savings account can take the form of an annuity or a capital payment. They are inherited by the surviving spouse and children irrespective of age and any other relatives or beneficiaries nominated by the account holder.

Benefits can be paid at the earliest 5 years before the normal retirement age stipulated in the public pillar. Exceptions are made in cases of invalidity, for the payment of an additional transfer capital if the account holder joins a second pillar institution or transfers to another second pillar institution, for the purchase of housing or the repayment of a mortgage loan.

#### **4.5 Performance**

It is difficult to assess the performance of the third pillar because there are no readily available statistics on the use of pillar 3a facilities or on the totality of pillar 3b savings. Available data on insurance companies indicate the use of individual life policies and individual voluntary annuities and these can be contrasted with data on group business. However, the data are far from comprehensive.

In insurance, premiums from group business increased tenfold between 1950 and 1998 in relation to GDP, whereas total premiums rose only fourfold (Table 31). In 1998, group business accounted for 52 percent of all premiums, individual life policies for 35 percent, and individual annuities for 7 percent.

With regard to mathematical reserves, group business accounted for 53 percent of total reserves in 1998 when it amounted to CHF 93 billion or 24 percent of GDP. These reserves represent the accumulated funds the insured pension institutions hand over to insurance companies. As already noted, they are additional to the funds reported by pension institutions. The reserves for individual life policies were equivalent to 16 percent of GDP and those for individual annuities to 4 percent of GDP (Table 32).

The above data show that both individual life policies and especially individual annuities are a very small part of the total business of insurance companies. Very little information is

provided on the composition of individual business between the tied (pillar 3a) and free (pillar 3b) components. Some published data on insured values suggest that free life policies account for two-thirds of all individual life policies, while free annuity policies represent nine-tenths of all individual annuities. These data suggest that tied business is relatively small. Nevertheless, applying these percentages to the annual volume of premiums, tied business may generate about CHF 4 billion in annual contributions to insurance companies. These would compare with CHF 24 billion for total second pillar contributions and CHF 19 billion for employer and employee first pillar contributions. Thus, tied third pillar contributions would represent 8.5 percent of total annual contributions. However, the tied contributions that are made to banking foundations are excluded from this calculation.

No data are available on the investment returns on tied savings. The published data on the overall investment performance of life insurance companies follow the usual extremely conservative accounting policies and are thus highly unsatisfactory. They create huge hidden reserves and distort investment policies toward poorly performing assets. The published data on the allocation of the worldwide assets of life insurance companies show a strong preference for debt instruments, with only a very recent change of trend in favor of equities (Table 33). Although no separate data are published on the assets that pertain to domestic business, it appears from data on mathematical reserves that domestic business represented 80 percent of worldwide business in 1998.

## HISTORICAL PERSPECTIVE

The evolution of social security in Switzerland was strongly influenced by the political structure and the economic development of the country. The Swiss federal structure gives strong legislative powers to the 26 cantons and requires constitutional amendments for the creation of centrally applicable laws, such as the establishment of compulsory social security institutions. The population participates directly in the legislative process through plebiscites.<sup>43</sup>

*The Public Pillar.* In the case of social security, the use of plebiscites led to considerable delays due to popular rejection of several proposals to establish federal compulsory schemes. Also, Switzerland did not experience the rise of urban pauperism during the process of industrialization that accelerated the need for social protection in other industrialized countries. Private initiatives and mutual associations developed as the main pillars of social protection around the middle of the 19th century.

The constitutional basis for the introduction of a health and accident insurance scheme was laid as early as 1890. The respective Act, however, was rejected by popular vote and adopted only in a second attempt in 1911. The canton of Glaris introduced a compulsory old age insurance scheme for all its residents in 1904 (Helbling 1991:27). This is regarded as the precursor of the Swiss pension scheme.

In December 1925, two new constitutional articles (34 quater and 41 ter), which empowered the Confederation to introduce old age and survivors insurance, were accepted by popular vote and by the cantons. The scheme was to be financed by taxes on tobacco and distilled beverages, but the draft Act was rejected in a referendum held in December 1931. The beginning of the Great Depression could have contributed to this outcome of the vote. Economic hardship and widespread unemployment did not seem to justify the introduction of benefits only for the elderly. As economic and political insecurity increased, no further attempts to introduce social security were made.

At the beginning of World War II, a scheme for the payment of daily allowances for loss of earnings due to military service was established by an emergency Act of Parliament. This scheme paid benefits to servicemen and their families, was contributory (4% of incomes),

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<sup>43</sup> There are several types of plebiscites. Compulsory referenda, organized by the federal government, are required for constitutional amendments. In addition, citizens objecting to the introduction of a new law may organize a referendum if they collect 50,000 signatures within a period of 3 months with a view to preventing its acceptance. But citizens may also organize plebiscites, called initiatives, petitioning for changes in legislation if they collect 100,000 signatures within a period of 18 months. Referenda and initiatives play an important and active part in the political life of Switzerland.

and was based on equalization funds across cantons. It was so successful that it paved the way for the introduction of general pension insurance. The Federal Council prepared a new draft act in 1946 that was adopted by Parliament in December 1946 and was then submitted to a popular referendum in July 1947. The result was 80% in favor (860,000 for and 215,000 against) and the system of old age and survivors' insurance came finally into operation in January 1948 (Charles 1993:13-14).

Disability insurance, however, was not established until 1960.

Swiss social security experts emphasize the concept of total solidarity on which the first pillar is based. This covers solidarity between the generations, income groups, sexes, single and married people, regions, and urban and rural areas (Charles 1993:13-14). The main features and principles of the first pillar as a social insurance scheme based on this concept of intergenerational and social solidarity have remained unchanged despite 10 revisions of the Act.<sup>44</sup> The first 8 of the revisions legislated benefit improvements. During the 1970s, pension levels and contribution rates almost doubled as a consequence of the 8th revision. The 9th and 10th revisions then dealt with fiscal consolidation through expenditure reductions and revenue increases as well as correcting some imbalances, such as splitting pension rights for married couples and providing better protection to divorced women. In this context, some important changes with regard to the solidarity between sexes and between single and married people were effected in 1997 (see below).

***The Private Pillar.*** The late introduction of the first pillar was partly due to the early development and rapidly increasing importance of voluntary occupational pension schemes, which reduced the political pressure for a comprehensive public pension scheme. As already noted, occupational pension funds probably covered one-third of all workers in the 1940s when they had assets corresponding to 30% of GDP. Coverage expanded to two-thirds of all workers in the early 1970s with accumulated financial assets amounting to 40% of GDP. But despite the expansion of coverage the Swiss people voted in a referendum in December 1972 to change the Federal Constitution to make occupational pension plans compulsory.

An interesting historical question is why did the Swiss people vote for a compulsory occupational pillar when coverage of voluntary schemes was quite extensive, while most of those not covered by them received public pensions that ensured reasonably high replacement rates. Helbling suggests that this was a defensive measure against a major expansion of the public pillar (Helbling 1991:29).

Initially, the public pillar offered modest benefits that were linked to years of contribution. But the first 8 revisions involved increases in benefits, mirroring the trends in social security provision throughout Continental Europe, if not throughout all OECD countries. The

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<sup>44</sup> In addition, 3 adjustment revisions were necessary to keep benefits in line with increases in the cost of living. In 1979, automatic adjustment to a composite index, calculated as the arithmetic mean of the increase of prices and wages, was introduced.

promulgation of the merits of the multi-pillar system in 1963 was probably the first attempt to articulate a defense against a relentless expansion of the public pillar. Then, in 1966, a conservative coalition led by the Confederation of Christian Trade Unions started to organize an initiative for making the second pillar compulsory. This was rejected in a vote in 1968. In 1969 the federal government established a commission of experts that recommended the creation of a compulsory second pillar. But in the same year the Labor Party of Switzerland started to organize an initiative favoring the nationalization of all pension schemes covering workers in dependent employment and their amalgamation in a much expanded public pillar. In 1972, the Labor Party initiative was rejected, while a government organized referendum for a constitutional amendment for a compulsory occupational pillar was approved.

The constitutional amendment empowered the Confederation to mandate all employers to “insure their employees with a company, administration or association provident fund or a similar institution, and to pay at least half of the contributions”. The objective of this employer mandate was to “allow elderly, survivors and disabled persons to maintain their previous standard of living in an appropriate measure, taking into account the benefits received from the federal insurance” (Article 34quater 3 of the Federal Constitution - as translated in Charles 1993:11).

Simultaneously, provisions for the transition to a social security system performing the above functions were adopted. Article 11 of the constitution obliges the Confederation and cantons to finance supplementary benefits as long as the first pillar is not providing full coverage of essential needs; such benefits may be financed both from general taxes and contribution revenues of the first pillar. It further regulates the treatment of the entry generation in the second pillar in order to ensure at least the legal minimum protection of this group.

Thus, in 1972, the three-pillar concept - public, occupational and personal - was laid down in the Swiss constitution. However, the referendum did not specify in detail the design of the second pillar. After some delay because of the economic effects of the oil crisis, the National Council (Lower House) adopted in 1977 a draft bill proposing a compulsory pillar based on defined benefit plans. This was deemed too ambitious and following a report by a committee of experts, the State Council (upper house) adopted in 1980 a draft bill that was less ambitious and closer to prevailing practice. After a period of consultations to eliminate differences between the two draft bills, the law for the compulsory occupational pension plans was adopted in 1982 by the two legislative bodies. To avoid any further delays, this law was not submitted to another referendum. The preparation of implementing regulations was completed in the ensuing two years and the new law became effective in January 1985.

The three pillar structure has continued, however, to come under political pressure. In May 1991, the Social Democratic Party and the Association of Trade Unions in Switzerland submitted a legislative initiative to raise the pension levels in the first pillar and reduce contribution obligations in the second pillar accordingly. The initiative was endorsed by a sufficient number of voters but was rejected in a 1995 referendum.

Because of the financial impact on both pillars of the progressive aging of the population, the changing employment patterns, the low investment returns of the second pillar, and the implications for annuity policies of long-term trends in financial markets, the Swiss authorities are involved in a more or less continuous review of the structure of the pension system and are considering various proposals that address these issues. Further changes in the provisions and structure of the system are a certainty, even if the details of these changes are still the subject of debate.

## STATISTICAL TABLES

**Table 1**  
**Coverage: Contributors, Labor Force and Economically Active Population (EAP)**  
**(million people)**

|      | Contributors | Labor Force | 2/3 (%) | EAP  | 2/5 (%) |
|------|--------------|-------------|---------|------|---------|
| 1950 | 2.16         | 2.30        | 93.9    | 2.65 | 81.5    |
| 1960 | 2.73         | 2.72        | 100.4   | 3.13 | 87.2    |
| 1970 | 3.16         | 3.14        | 100.6   | 3.59 | 88.0    |
| 1980 | 3.25         | 3.17        | 102.5   | 3.61 | 90.0    |
| 1990 | 3.77         | 3.82        | 98.7    | 4.07 | 92.6    |
| 1995 | 3.78         | 3.80        | 99.5    | 4.25 | 88.9    |
| 1996 | 3.82         | 3.81        | 100.3   | 4.25 | 89.9    |
| 1997 | 3.80         | 3.80        | 100.0   | 4.25 | 89.4    |
| 1998 | 3.80         | 3.85        | 98.7    | 4.29 | 88.6    |

Source: Federal Office of Social Insurance

**Table 2**  
**Impact of New Benefit Formula**

| Salary Level | Annual Salary | Old Formula | Pension Rate | New Formula | Pension Rate |
|--------------|---------------|-------------|--------------|-------------|--------------|
| 20%          | 11880         | 11940       | 100.5        | 11940       | 100.5        |
| 40%          | 23760         | 14304       | 60.2         | 15013       | 63.2         |
| 50%          | 29700         | 15492       | 52.2         | 16558       | 55.7         |
| 60%          | 35640         | 16680       | 46.8         | 18102       | 50.8         |
| 100%         | 59400         | 21432       | 36.1         | 21922       | 36.9         |
| 120%         | 71280         | 23880       | 33.5         | 23822       | 33.4         |
| 150%         | 89100         | 23880       | 26.8         | 23880       | 26.8         |
| 200%         | 118800        | 23880       | 20.1         | 23880       | 20.1         |
| 500%         | 297000        | 23880       | 8.0          | 23880       | 8.0          |



Source: Federal Office of Social Insurance

**Table 3**  
**Number of Beneficiaries**  
**(million people)**

|      | Contri-<br>butors | Old Age<br>Pensions | Survivor<br>Pensions | Disability<br>Pensions | Total<br>Pensions |
|------|-------------------|---------------------|----------------------|------------------------|-------------------|
| 1950 | 2.16              | 0.23                | 0.08                 | --                     | 0.31              |
| 1960 | 2.73              | 0.55                | 0.13                 | 0.04                   | 0.72              |
| 1970 | 3.16              | 0.88                | 0.12                 | 0.10                   | 1.10              |
| 1980 | 3.25              | 1.03                | 0.13                 | 0.12                   | 1.27              |
| 1990 | 3.77              | 1.23                | 0.12                 | 0.16                   | 1.51              |
| 1995 | 3.78              | 1.36                | 0.11                 | 0.20                   | 1.57              |
| 1996 | 3.82              | 1.39                | 0.11                 | 0.21                   | 1.71              |
| 1997 | 3.80              | 1.42                | 0.11                 | 0.22                   | 1.75              |
| 1998 | 3.80              | 1.45                | 0.12                 | 0.22                   | 1.79              |

Source: Federal Office of Social Insurance

**Table 4**  
**System and Demographic Dependency Ratios**  
**(%)**

|      | SDR                    |                     | DDR              |
|------|------------------------|---------------------|------------------|
|      | Total<br>Beneficiaries | Old-Age<br>Pensions | Old-Age<br>Ratio |
| 1950 | 14                     | 11                  | 23               |
| 1960 | 26                     | 20                  |                  |
| 1970 | 35                     | 28                  |                  |
| 1980 | 39                     | 32                  |                  |
| 1990 | 40                     | 33                  |                  |
| 1995 | 44                     | 36                  |                  |
| 1996 | 45                     | 36                  |                  |
| 1997 | 46                     | 37                  |                  |
| 1998 | 47                     | 38                  | 28               |

Source: Federal Office of Social Insurance

**Table 5**  
**Contribution Rates for Old Age and Survivors Scheme**

|      | Employed | Self-Employed | Nonworking CHF/year |
|------|----------|---------------|---------------------|
| 1948 | 4.0%     | 4.0%          | 12-600              |
| 1969 | 5.2%     | 4.6%          | 40-2000             |
| 1973 | 7.8%     | 6.8%          | 78-7800             |
| 1975 | 8.4%     | 7.3%          | 84-8400             |
| 1979 | 8.4%     | 7.8%          | 168-8400            |
| 1982 | 8.4%     | 7.8%          | 210-8400            |
| 1986 | 8.4%     | 7.8%          | 252-8400            |
| 1990 | 8.4%     | 7.8%          | 269-8400            |
| 1992 | 8.4%     | 7.8%          | 299-8400            |
| 1996 | 8.4%     | 7.8%          | 324-8400            |

Source: Federal Office of Social Insurance

**Table 6**  
**Contribution Rates for Disability Insurance**  
**(% of income)**

|      | Employed | Self-Employed | Non-working CHF/year |
|------|----------|---------------|----------------------|
| 1960 | 0.4%     | 0.4%          | 1.2-60               |
| 1968 | 0.5%     | 0.5%          | 1.8-75               |
| 1969 | 0.6%     | 0.6%          | 5.6-261              |
| 1973 | 0.8%     | 0.8%          | 8-800                |
| 1975 | 1.0%     | 1.0%          | 10-1000              |
| 1979 | 1.0%     | 1.0%          | 20-1000              |
| 1982 | 1.0%     | 1.0%          | 25-1000              |
| 1986 | 1.0%     | 1.0%          | 30-1000              |
| 1988 | 1.2%     | 1.2%          | 36-1200              |
| 1990 | 1.2%     | 1.2%          | 39-1200              |
| 1992 | 1.2%     | 1.2%          | 43-1200              |
| 1995 | 1.4%     | 1.4%          | 50-1400              |
| 1996 | 1.4%     | 1.4%          | 54-1400              |

Source: Federal Office of Social Insurance

**Table 7**  
**Single Old Age Pension Replacement Rates**

| Pensioners (in %) | Replacement Rates (in %) |
|-------------------|--------------------------|
| 7                 | 100 and more             |
| 9                 | 60 – 100                 |
| 23                | 40 – 60                  |
| 29                | 33 – 40                  |
| 31                | 33 and less              |

Source: Federal Office of Social Insurance

**Table 8**  
**Revenues of Old Age and Survivors Scheme (% GDP)**

|      | Contributions | Government | Other | Total |
|------|---------------|------------|-------|-------|
| 1950 | 2.35          | 0.82       | 0.10  | 3.25  |
| 1960 | 2.14          | 0.43       | 0.43  | 2.99  |
| 1970 | 2.81          | 0.65       | 0.32  | 3.78  |
| 1980 | 4.79          | 1.07       | 0.19  | 6.05  |
| 1990 | 5.05          | 1.16       | 0.21  | 6.42  |
| 1995 | 5.13          | 1.32       | 0.29  | 6.82  |
| 1996 | 5.13          | 1.36       | 0.30  | 6.78  |
| 1997 | 5.00          | 1.39       | 0.40  | 6.79  |
| 1998 | 4.97          | 1.40       | 0.26  | 6.62  |

Source: Federal Office of Social Insurance

**Table 9**  
**Expenses of Old Age and Survivors Scheme (% GDP)**

|      | Old-Age<br>Benefits | Admin<br>Expenses | Total<br>Payments | Annual<br>Balance |
|------|---------------------|-------------------|-------------------|-------------------|
| 1950 | 0.82                | 0.03              | 0.85              | 2.42              |
| 1960 | 1.90                | 0.03              | 1.93              | 1.07              |
| 1970 | 3.29                | 0.02              | 3.31              | 0.48              |
| 1980 | 5.87                | 0.03              | 5.90              | 0.15              |
| 1990 | 5.76                | 0.02              | 5.78              | 0.64              |
| 1995 | 6.72                | 0.02              | 6.75              | 0.00              |
| 1996 | 6.76                | 0.02              | 6.78              | -0.01             |
| 1997 | 6.92                | 0.02              | 6.94              | -0.16             |
| 1998 | 6.96                | 0.03              | 6.99              | -0.37             |

Source: Federal Office of Social Insurance

**Table 10**  
**Capital Fund of Old Age and Survivors Scheme**

|      | Total<br>Benefits<br>(CHF bn) | Capital<br>Fund<br>(CHF bn) | CF/TB<br>% | CF/GDP<br>% |
|------|-------------------------------|-----------------------------|------------|-------------|
| 1950 | 0.16                          | 1.40                        | 875.00     | 7.15        |
| 1960 | 0.71                          | 5.61                        | 790.14     | 15.01       |
| 1970 | 2.98                          | 8.55                        | 286.91     | 9.43        |
| 1980 | 10.58                         | 9.69                        | 91.59      | 5.38        |
| 1990 | 18.27                         | 18.16                       | 99.40      | 5.72        |
| 1995 | 24.42                         | 23.84                       | 97.62      | 6.56        |
| 1996 | 24.74                         | 23.81                       | 96.24      | 6.51        |
| 1997 | 25.72                         | 23.22                       | 90.28      | 6.25        |

1998      26.62      21.83      82.01      5.71

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Source: Federal Office of Social Insurance

**Table 11**  
**Revenues of Disability Insurance Scheme (% GDP)**

|      | Contributions | Government | Other | Total |
|------|---------------|------------|-------|-------|
| 1960 | 0.21          | 0.08       | 0.00  | 0.29  |
| 1970 | 0.33          | 0.33       | 0.00  | 0.66  |
| 1980 | 0.58          | 0.59       | 0.00  | 1.17  |
| 1990 | 0.73          | 0.65       | 0.01  | 1.39  |
| 1995 | 0.86          | 0.91       | 0.02  | 1.78  |
| 1996 | 0.86          | 1.00       | 0.02  | 1.88  |
| 1997 | 0.84          | 1.03       | 0.02  | 1.89  |
| 1998 | 0.83          | 1.04       | 0.03  | 1.90  |

Source: Federal Office of Social Insurance

**Table 12**  
**Expenses of Disability Insurance Scheme (% GDP)**

|      | Disability Benefits | Admin Expenses | Other Expenses | Total Payments | Annual Balance |
|------|---------------------|----------------|----------------|----------------|----------------|
| 1960 | 0.13                | 0.01           | 0.00           | 0.14           | 0.15           |
| 1970 | 0.63                | 0.02           | 0.00           | 0.65           | 0.01           |
| 1980 | 1.15                | 0.03           | 0.01           | 1.20           | -0.03          |
| 1990 | 1.26                | 0.04           | 0.00           | 1.30           | 0.09           |
| 1995 | 1.81                | 0.06           | 0.02           | 1.88           | -0.10          |
| 1996 | 1.92                | 0.06           | 0.02           | 2.00           | -0.12          |
| 1997 | 1.99                | 0.04           | 0.03           | 2.06           | -0.16          |
| 1998 | 2.02                | 0.06           | 0.01           | 2.08           | -0.18          |

Source: Federal Office of Social Insurance

**Table 13**  
**Capital Fund of Disability Insurance Scheme**

|      | Total Benefits<br>(CHF bn) | Capital Fund<br>(CHF bn) | CF/TB<br>% | CF/GDP<br>% |
|------|----------------------------|--------------------------|------------|-------------|
| 1960 | 0.05                       | 0.05                     | 100.00     | 0.13        |
| 1970 | 0.57                       | 0.08                     | 14.04      | 0.09        |
| 1980 | 2.08                       | -0.36                    | -17.31     | -0.20       |
| 1990 | 3.99                       | 0.01                     | 0.25       | 0.00        |
| 1995 | 6.57                       | -1.15                    | -17.50     | -0.32       |
| 1996 | 7.01                       | -1.58                    | -22.54     | -0.43       |
| 1997 | 7.39                       | -2.19                    | -29.63     | -0.59       |
| 1998 | 7.71                       | -0.69                    | -8.95      | -0.18       |

Source: Federal Office of Social Insurance

**Table 14**  
**Pension Institutions by Legal Status, 1996**

|                            | Funds<br>(number) | %     | Affiliates<br>(million) | %     |
|----------------------------|-------------------|-------|-------------------------|-------|
| Public Sector Institutions | 168               | 1.5   | 0.56                    | 17.8  |
| Cooperative Societies      | 39                | 0.3   | 0.10                    | 3.2   |
| Foundations                | 11365             | 98.2  | 2.49                    | 79.0  |
| Total                      | 11572             | 100.0 | 3.15                    | 100.0 |

Source: Pension Fund Statistics, Federal Office of Statistics

**Table 15**  
**Evolution of Funds, Affiliates and Beneficiaries, 1970-1997**

|      | Funds<br>(number) | Affiliates<br>(million) | Beneficiaries<br>(million) | B/A<br>(%) |
|------|-------------------|-------------------------|----------------------------|------------|
| 1970 | 15581             | 1.28                    | 0.22                       | 17.2       |
| 1978 | 17060             | 1.58                    | 0.31                       | 19.6       |
| 1980 | 17500             | 1.69                    | 0.33                       | 19.5       |
| 1987 | 15179             | 3.27                    | 0.42                       | 12.8       |
| 1990 | n.a.              | 3.54                    | 0.51                       | 14.4       |
| 1992 | 13689             | 3.43                    | 0.53                       | 15.5       |
| 1994 | 12851             | 3.24                    | 0.61                       | 18.8       |
| 1995 | 12200             | 3.19                    | 0.63                       | 19.7       |
| 1996 | 11572             | 3.15                    | 0.65                       | 20.6       |
| 1997 | n.a.              | 3.10                    | 0.67                       | 21.6       |

Source: Pension Fund Statistics, Federal Office of Statistics

**Table 16**  
**Pension Institutions with and without Affiliates, 1996**

|                                | Funds<br>(number) | %     | Affiliates<br>(million) | %     |
|--------------------------------|-------------------|-------|-------------------------|-------|
| Registered with Affiliates     | 3075              | 26.6  | 2.91                    | 92.4  |
| Non-Registered with Affiliates | 1210              | 10.4  | 0.24                    | 7.6   |
| Total with Affiliates          | 4285              | 37.0  |                         |       |
| Charitable Institutions        | 4586              | 39.6  |                         |       |
| Financing Foundations          | 221               | 1.9   |                         |       |
| "Frozen" Institutions          | 2480              | 21.4  |                         |       |
| Total NR w/o Affiliates        | 7287              | 63.0  |                         |       |
| Total                          | 11572             | 100.0 | 3.15                    | 100.0 |

Source: Pension Fund Statistics, Federal Office of Statistics



**Table 17**  
**Pension Funds by Number of Affiliates, 1987 and 1996**

|                                    | 1987  |            | 1996  |            |
|------------------------------------|-------|------------|-------|------------|
|                                    | Funds | Affiliates | Funds | Affiliates |
| Affiliates per fund                | %     | %          | %     | %          |
| 1-99                               | 74.8  | 4.9        | 57.5  | 2.5        |
| 100-499                            | 18.3  | 10.7       | 29.5  | 9.2        |
| 500-999                            | 3.0   | 5.8        | 5.7   | 5.4        |
| 1000-4999                          | 2.8   | 16.8       | 5.3   | 15.2       |
| 5000-9999                          | 0.4   | 8.0        | 0.9   | 8.6        |
| 10000+                             | 0.6   | 53.8       | 1.2   | 59.0       |
| Total                              | 100.0 | 100.0      | 100.0 | 100.0      |
| Funds (#) and affiliates (million) | 8840  | 3.27       | 4285  | 3.15       |

Source: Pension Fund Statistics, Federal Office of Statistics

**Table 18**  
**Funds and Affiliates by Risk Management Type, 1970, 1987 and 1996**

|                                    | 1970  |            | 1987  |            | 1996  |            |
|------------------------------------|-------|------------|-------|------------|-------|------------|
|                                    | Funds | Affiliates | Funds | Affiliates | Funds | Affiliates |
|                                    | %     | %          | %     | %          | %     | %          |
| Autonomous (w/o reinsurance)       | 8.6   | 51.9       | 12.9  | 38.4       | 14.2  | 35.9       |
| Autonomous (with reinsurance)      | 0.0   | 0.0        | 5.3   | 3.7        | 12.5  | 10.2       |
| Semi-autonomous                    | 29.8  | 21.2       | 40.7  | 21.1       | 44.6  | 15.9       |
| Insured                            | 61.6  | 26.9       | 38.2  | 35.9       | 25.1  | 37.0       |
| Savings Funds                      | 0.0   | 0.0        | 2.9   | 0.9        | 3.6   | 1.0        |
| Total Funds with Affiliates        | 100.0 | 100.0      | 100.0 | 100.0*     | 100.0 | 100.0      |
| Funds (#) and Affiliates (million) | 13643 | 1.28       | 6151  | 3.16*      | 4285  | 3.15       |

\* excludes "frozen" institutions and their affiliates

Source: Pension Fund Statistics, Federal Office of Statistics

**Table 19**  
**Types of Pension Plans, 1987 and 1996**

|                                    | 1987  |            | 1996  |            |
|------------------------------------|-------|------------|-------|------------|
|                                    | Funds | Affiliates | Funds | Affiliates |
| Defined benefit                    | 13    | 32         | 18    | 29         |
| Defined contribution               | 84    | 57         | 80    | 70         |
| Other                              | 3     | 11         | 2     | 1          |
| Total                              | 100   | 100        | 100   | 100        |
| Funds (#) and affiliates (million) | 8427  | 3.25       | 4285  | 3.15       |

Source: Pension Fund Statistics, Federal Office of Statistics

**Table 20**  
**Second Pillar Coverage and Labor Force**

|      | Affiliates<br>(million) | Labor Force<br>(million) | A/LF<br>% |
|------|-------------------------|--------------------------|-----------|
| 1970 | 1.28                    | 3.14                     | 40.8      |
| 1978 | 1.58                    | 3.06                     | 51.6      |
| 1980 | 1.69                    | 3.17                     | 53.3      |
| 1987 | 3.27                    | 3.52                     | 92.9      |
| 1990 | 3.54                    | 3.82                     | 92.7      |
| 1992 | 3.43                    | 3.83                     | 89.6      |
| 1994 | 3.24                    | 3.79                     | 85.5      |
| 1995 | 3.19                    | 3.80                     | 83.9      |
| 1996 | 3.15                    | 3.81                     | 82.7      |
| 1997 | 3.10                    | 3.80                     | 81.6      |

Source: Pension Fund Statistics, Federal Office of Statistics and  
Federal Office of Social Insurance

**Table 21**  
**Second Pillar Beneficiaries**

|      | Old Age<br>Pensions<br>(million) | Other<br>Pensions<br>(million) | Total<br>Pensions<br>(million) | Beneficiaries/<br>Affiliates<br>% | Old Age Pensions/<br>Old Age People<br>% |
|------|----------------------------------|--------------------------------|--------------------------------|-----------------------------------|------------------------------------------|
| 1970 | n.a.                             | n.a.                           | 0.22                           | 17.2                              | n.a.                                     |
| 1978 | n.a.                             | n.a.                           | 0.31                           | 19.6                              | n.a.                                     |
| 1980 | n.a.                             | n.a.                           | 0.33                           | 19.5                              | n.a.                                     |
| 1987 | n.a.                             | n.a.                           | 0.42                           | 12.8                              | n.a.                                     |
| 1990 | n.a.                             | n.a.                           | 0.51                           | 14.4                              | n.a.                                     |
| 1992 | 0.31                             | 0.22                           | 0.53                           | 15.5                              | 27.9                                     |
| 1994 | 0.33                             | 0.28                           | 0.61                           | 18.8                              | 29.2                                     |
| 1995 | n.a.                             | n.a.                           | 0.63                           | 19.7                              | n.a.                                     |
| 1996 | 0.35                             | 0.30                           | 0.65                           | 20.6                              | 30.2                                     |
| 1997 | n.a.                             | n.a.                           | 0.67                           | 21.6                              | n.a.                                     |

Source: Pension Fund Statistics, Federal Office of Statistics and  
Federal Office of Social Insurance

**Table 22**  
**Evolution of Contributions, 1970-1997**

|      | Employees     | Employers     | Total         | Employer   | GDP        |
|------|---------------|---------------|---------------|------------|------------|
|      | (CHF billion) | (CHF billion) | (CHF billion) | Share<br>% | Ratio<br>% |
| 1970 | 1.22          | 2.24          | 3.46          | 64.7       | 3.8        |
| 1978 | 2.42          | 4.41          | 6.83          | 64.6       | 4.5        |
| 1980 | 3.53          | 6.15          | 9.68          | 63.5       | 5.4        |
| 1987 | 5.73          | 9.39          | 15.12         | 62.1       | 5.9        |
| 1990 | 7.70          | 13.16         | 20.86         | 63.1       | 6.6        |
| 1992 | 8.54          | 14.91         | 23.45         | 63.6       | 6.8        |
| 1994 | 8.70          | 14.44         | 23.14         | 62.4       | 6.5        |
| 1995 | 8.95          | 15.18         | 24.13         | 62.9       | 6.6        |
| 1996 | 9.05          | 15.66         | 24.71         | 63.4       | 6.8        |
| 1997 | 9.00          | 15.20         | 24.20         | 62.8       | 6.5        |

Source: Pension Fund Statistics, Federal Office of Statistics  
Federal Office of Social Insurance

**Table 23**  
**Evolution of Benefits, 1970-1997**

|      | Benefits                  |                            | Total                     | Share of      | GDP        |
|------|---------------------------|----------------------------|---------------------------|---------------|------------|
|      | Pensions<br>(CHF billion) | Lump Sums<br>(CHF billion) | Benefits<br>(CHF billion) | Pensions<br>% | Ratio<br>% |
| 1970 | 1.16                      | 0.16                       | 1.32                      | 87.9          | 1.5        |
| 1978 | 2.56                      | 0.42                       | 2.98                      | 85.9          | 2.0        |
| 1980 | 2.96                      | 0.50                       | 3.46                      | 85.5          | 1.9        |
| 1987 | 5.50                      | 0.95                       | 6.45                      | 85.3          | 2.5        |
| 1990 | 7.25                      | 1.49                       | 8.74                      | 83.0          | 2.8        |
| 1992 | 9.00                      | 1.83                       | 10.83                     | 83.1          | 3.2        |
| 1994 | 10.70                     | 2.32                       | 13.02                     | 82.2          | 3.6        |
| 1995 | 11.57                     | 2.57                       | 14.14                     | 81.8          | 3.9        |
| 1996 | 12.51                     | 2.84                       | 15.35                     | 81.5          | 4.2        |
| 1997 | 13.20                     | 3.00                       | 16.20                     | 81.5          | 4.4        |

Source: Pension Fund Statistics, Federal Office of Statistics  
Federal Office of Social Insurance

**Table 24**  
**Age-Related Credits to “Notional” Individual Retirement Accounts**

| Age   |       | Annual Credit<br>Rate | Accumulated Credits |       |
|-------|-------|-----------------------|---------------------|-------|
| Men   | Women |                       | Men                 | Women |
| 25-34 | 25-31 | 7 %                   | 70 %                | 49%   |
| 35-44 | 32-41 | 10 %                  | 170 %               | 149%  |
| 45-54 | 42-51 | 15 %                  | 320 %               | 299%  |
| 55-64 | 52-61 | 18 %                  | 500 %               | 479%  |

Note: The annual credit rate and accumulated credits are expressed as a percentage of coordinated earnings.

Source: Federal Office of Social Insurance

**Table 25**  
**Allocation of Contribution Revenues between Old Age and Supplementary Benefits**  
 (percent of covered earnings)

| Age   |       | Old Age<br>Benefits | Other<br>Benefits | Total<br>Rate |
|-------|-------|---------------------|-------------------|---------------|
| Men   | Women |                     |                   |               |
| 25-34 | 25-31 | 7 %                 | 11 %              | 18%           |
| 35-44 | 32-41 | 10 %                | 8 %               | 18%           |
| 45-54 | 42-51 | 15 %                | 3 %               | 18%           |
| 55-64 | 52-61 | 18 %                | 0 %               | 18%           |

Source: Hepp (1990:166)

**Table 26**  
**Investment Limits**

| Type of Asset                 | % of Fund   |        |
|-------------------------------|-------------|--------|
|                               | Asset Class | Issuer |
| Domestic Assets               |             |        |
| Debt Instruments              | 100         | 15*    |
| Mortgages**                   | 75          |        |
| Real Estate                   | 50          |        |
| Shares                        | 30          | 10     |
| Claims on Employers           |             |        |
| Guaranteed Claims             | 100         |        |
| Non-Guaranteed Claims         | 20          |        |
| Equities***                   | 10          |        |
| Foreign Assets                |             |        |
| CHF Bonds                     | 30          | 5      |
| Foreign Currency Bonds        | 20          | 5      |
| Real Estate                   | 5           |        |
| Equities                      | 25          | 5      |
| Global Limits****             |             |        |
| All equities and real estate  | 70          |        |
| Domestic and foreign equities | 50          |        |
| Foreign bonds                 | 30          |        |
| Foreign currency securities   | 30          |        |

\* except for claims on the federal and cantonal governments as well as banks and insurance companies.

\*\* Up to 80 percent of the market value of the mortgaged asset.

\*\*\* Investments in unlisted equities are not authorized.

\*\*\*\* Investments in precious metals have been formally allowed since 1989 and in derivatives since 1993. Use of derivatives is only permitted for hedging purposes. Using derivatives for leverage purposes is specifically prohibited.

Source: Federal Office of Social Insurance

**Table 27**  
**Asset Allocation, 1970-1996**

| Assets                    | 1970  | 1980  | 1987  | 1992  | 1994  | 1996  |
|---------------------------|-------|-------|-------|-------|-------|-------|
| Liquid Assets             | 7.0   | 6.0   | 9.1   | 8.3   | 7.1   | 9.5   |
| Domestic Bonds            | 25.0  | 28.0  | 30.2  | 24.2  | 21.3  | 19.7  |
| Domestic Loans            |       |       |       | 4.1   | 2.5   | 1.8   |
| Domestic Mortgages        | 15.0  | 10.0  | 7.6   | 9.2   | 8.3   | 7.0   |
| Domestic Real Estate      | 16.0  | 18.0  | 17.3  | 17.1  | 17.0  | 15.5  |
| Claims on Employers       | 33.0  | 27.0  | 16.6  | 14.7  | 12.3  | 10.2  |
| Employer Equity           |       |       |       |       | 2.5   | 2.4   |
| Domestic Equities         | 3.0   | 9.0   | 7.9   | 8.3   | 10.1  | 11.4  |
| Foreign Equities          |       |       |       | 2.5   | 5.3   | 7.6   |
| Foreign Bonds in For Curr |       |       |       | 4.9   | 7.0   | 8.0   |
| Foreign Bonds in CHF      |       |       |       | 4.1   | 3.0   | 3.3   |
| Indirect Investments*     |       |       | 5.8   |       |       |       |
| Other                     | 1.0   | 2.0   | 5.5   | 5.1   | 3.6   | 3.0   |
| Total                     | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Total Assets (CHF bn)     | 32.5  | 82.0  | 165.2 | 256.7 | 296.1 | 348.3 |
| Total Assets/GDP (%)      | 35.8  | 45.5  | 64.2  | 75.0  | 82.8  | 95.2  |
| Total Pension Reserves    |       |       | 157.4 | 242.5 | 271.4 | 311.6 |
| Total Equities            | 3.0   | 9.0   | 7.9   | 10.8  | 17.8  | 21.4  |
| Total Foreign             |       |       |       | 7.4   | 12.3  | 15.6  |
| Total Claims on Employers | 33.0  | 27.0  | 16.6  | 14.7  | 14.8  | 12.7  |

\* Indirect investments were allocated in their respective asset classes in 1992, 94, and 96.

Source: Davis (1995:134-143) for 1970 and 1980  
Pension Fund Statistics, Federal Office of Statistics  
Federal Office of Social Insurance

**Table 28**  
**Average Real Returns on Pension Portfolios, 1984-98**  
**(percent of assets)**

|                  |       |
|------------------|-------|
| Belgium*         | 10.33 |
| Denmark          | 6.14  |
| Germany          | 6.72  |
| Ireland*         | 12.54 |
| The Netherlands* | 9.64  |
| Switzerland      | 4.90  |
| United Kingdom*  | 10.35 |
| United States*   | 10.49 |
| Prudent Person*  | 10.67 |
| Asset Limits     | 5.92  |

Source: European Commission (1999)

**Table 29**  
**Large Pension Funds**  
**Average Real Investment Returns, 1995-98**

|                      | 1995 | 1996 | 1997 | 1998 | Average |
|----------------------|------|------|------|------|---------|
| Australia, Corporate | 13.2 | 7.9  | 13.5 | 10.5 | 11.3    |
| Australia, industry  | 10.3 | 7.9  | 11.0 | 9.1  | 9.6     |
| Canada               | 15.2 | 25.0 | 15.3 | 7.2  | 15.5    |
| Japan                | 10.0 | 5.2  | 3.1  | -3.3 | 3.6     |
| Switzerland          | 9.5  | 12.3 | 16.4 | 10.4 | 12.1    |
| UK                   | 16.3 | 8.1  | 16.8 | 11.6 | 13.1    |
| US                   | 22.3 | 10.8 | 18.9 | 13.0 | 16.2    |

Source: Pensions and Investments, second issue of following year

**Table 30**  
**Administrative and Financial Costs**

|      | Administrative Costs |                     | Financial Costs    |                     |
|------|----------------------|---------------------|--------------------|---------------------|
|      | % of Contributions   | % of Average Assets | % of Contributions | % of Average Assets |
| 1970 | 7.51                 |                     |                    |                     |
| 1978 | 5.42                 | 0.72                |                    |                     |
| 1980 | 3.62                 | 0.46                |                    |                     |
| 1987 | 2.25                 | 0.28                | 1.72               | 0.21                |
| 1990 | 2.16                 | 0.24                | 1.97               | 0.22                |
| 1992 | 2.43                 | 0.24                | 2.26               | 0.22                |
| 1994 | 2.77                 | 0.23                | 3.28               | 0.27                |
| 1995 | 2.86                 | 0.22                | 3.27               | 0.26                |
| 1996 | 3.04                 | 0.22                | 3.28               | 0.24                |
| 1997 | 3.31                 | 0.22                | 3.31               | 0.22                |

Source: Pension Fund Statistics, Federal Office of Statistics  
Federal Office of Social Insurance

**Table 31**  
**Premiums of Life Insurance Companies (% GDP)**

|      | Individual    |           | Group    | Other | Total |
|------|---------------|-----------|----------|-------|-------|
|      | Life Policies | Annuities | Business |       |       |
| 1950 | 1.7           | 0.2       | 0.4      |       | 2.3   |
| 1960 | 1.5           | 0.2       | 0.5      |       | 2.2   |
| 1970 | 1.2           | 0.1       | 1.0      |       | 2.3   |
| 1980 | 1.2           | 0.2       | 1.5      |       | 2.9   |
| 1990 | 1.5           | 0.1       | 2.9      |       | 4.5   |
| 1995 | 2.5           | 0.5       | 3.7      |       | 6.7   |
| 1996 | 2.4           | 0.6       | 4.1      | 0.3   | 7.4   |
| 1997 | 3.0           | 0.6       | 4.5      | 0.3   | 8.3   |
| 1998 | 3.2           | 0.6       | 4.8      | 0.6   | 9.1   |

Source: Federal Office of Private Insurance



**Table 32**  
**Mathematical Reserves of Life Insurance Companies (% GDP)**

|      | Individual    |           | Group    | Other | Total |
|------|---------------|-----------|----------|-------|-------|
|      | Life Policies | Annuities | Business |       |       |
| 1950 | 12.6          | 2.5       | 3.6      |       | 18.6  |
| 1960 | 11.0          | 1.5       | 4.3      |       | 16.9  |
| 1970 | 7.9           | 1.0       | 5.1      |       | 14.0  |
| 1980 | 7.3           | 1.3       | 8.4      |       | 17.0  |
| 1990 | 8.9           | 1.9       | 14.7     | 0.0   | 25.5  |
| 1995 | 12.2          | 2.7       | 19.9     | 0.5   | 35.3  |
| 1996 | 13.3          | 3.3       | 21.2     | 0.5   | 38.2  |
| 1997 | 15.0          | 3.6       | 22.9     | 0.8   | 42.3  |
| 1998 | 16.6          | 4.0       | 24.4     | 1.4   | 46.3  |

Source: Federal Office of Private Insurance

**Table 33**  
**Asset Allocation of Life Insurance Companies**

|      | Debt | Equities | Real Estate |
|------|------|----------|-------------|
|      | %    | %        | %           |
| 1950 | 90.0 |          | 10.0        |
| 1960 | 85.1 |          | 14.9        |
| 1970 | 79.8 |          | 20.2        |
| 1980 | 81.2 |          | 18.8        |
| 1990 | 79.5 | 5.8      | 14.7        |
| 1995 | 74.5 | 13.4     | 12.1        |
| 1996 | 73.2 | 15.6     | 11.2        |
| 1997 | 72.6 | 16.9     | 10.5        |
| 1998 | 72.1 | 18.3     | 9.6         |

Source: Federal Office of Private Insurance

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