

# **Insights From Switzerland's Pension System**

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### Abstract

This chapter takes Switzerland's much praised three-pillar system to illustrate some of the challenges pension system reforms face in an ageing society. It shows that policymakers are confronted by some individuals with behavioral anomalies, and by others who strategically exploit the system. The trade-off between providing incentives and adequate retirement income limits policy options, especially if reformers do not want to impose too many restrictions on individual choice and avoid excessive burdens for the young generation. Pension reforms can also be seriously challenged by political constraints, in particular, when voters have a direct say on proposed changes.

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## Insights from Switzerland's Pension System

Old age insurance systems around the world face similar challenges. Rising life expectancies and low birthrates produce a greater proportion of elderly—and potentially frail—individuals in the population. Most social security systems suffer from excessive promises made in the past, generating substantial burdens on the active population. Recent turbulence in the capital market increased funding gaps of pension plans. Reforms, though necessary, are increasingly difficult to implement. Immediate cuts harm the elderly, as they cannot adjust quickly enough. Workers and firms are more mobile than in the past, not only in a geographic sense, but also over the life cycle. New patterns of work life have also emerged in part due to higher female labor market participation. Last, but not least, individuals want more autonomy in managing the provisions for old age. At the same time, they are often not sufficiently informed about the functioning of social insurance and the capital market.

Why look to Switzerland to examine how it is meeting this global challenge? Together with the Netherlands, Switzerland stands out as having a strong reliance on its second pillar for old age income. In contrast to most other countries with younger funded pension schemes, lessons can be drawn from decades of experience. Two main policy concerns are addressed in this chapter. First, while there is certainly evidence that policy is challenged by behavioral anomalies, it can also be plagued by strategic behavior: 'too much' rationality. Using the example of Swiss annuitization patterns in retirement, we show that strategic decumulation of assets, given a generous means-testing cushion, poses a serious threat to the system. Since first pillar benefits are below the level of subsistence, full cash-outs of occupational pension capital jeopardize the adequacy of retirement income and may in turn be costly for the government.

Second, the chapter discusses often-neglected political constraints in reforming the old-age

system. As people live longer and have fewer children, the median voter ages very quickly and the number of policy options shrinks. This problem is even more visible in a country like Switzerland, where the population has a factual line-item veto on policy proposals. Potentially painful pension reforms cannot simply be integrated into a larger package, but have to be approved separately. However, political constraints are also prevalent in representative democracies, albeit to a lesser extent. The evolution from decentralized provisions of income in old age with little government involvement to a more institutionalized and supervised pension scheme brought many advantages such as transparency, equal treatment, and economies of scale. But this larger and more institutionalized system is much more difficult to reform and more susceptible to political pressure. The chapter also presents another aspect of the Swiss system that is of interest for other countries: the treatment of families and couples in the accumulation of claims to the pension system.

In Switzerland, a large fraction of retirement income stems from mandatory fully-funded occupational pension plans, which provide generous income guarantees. While individuals cannot choose the pension provider, retirees have a number of withdrawal options upon retirement. Annuitization rates are still comparatively high, but they also vary greatly over time and between pension providers. Interestingly, Switzerland's second pillar had been the primary source of retirement income for many decades, long before the first pillar of old age security was introduced in 1948. When the second pillar became legally mandatory in 1985 (following a change in the constitution approved by the Swiss electorate in 1972), almost 60 percent of the Swiss workforce was covered by an occupational pension fund. This high coverage rate was not only present for paternalistic reasons, but also because pension plans have always been a tool to attract qualified workers in a low unemployment environment.

Several authors have addressed some features of the Swiss social security system. Detailed

analysis of the strengths and weaknesses of the Swiss pension system can be found in Queisser and Vittas (2000) and Queisser and Whitehouse (2003). A World Bank report on annuity markets in Switzerland (Bütler and Ruesch 2007) provides a comprehensive description of the Swiss system with a focus on the second pillar. Bütler and Staubli (2010) take a closer look at annuitization of pension wealth, while Bütler (2010) focuses on the labor market.

The present chapter revisits the Swiss social security system in view of upcoming challenges. We begin with an overview of the institutional structure with a focus on the occupational pension pillar, and then we discuss the current demographic and economic situation in Switzerland. The following section illustrates the choice to annuitize or cash out pension wealth. Finally, we turn to a discussion of recent pension system reforms, with an emphasis on the political process. We conclude with a summary and lessons to be drawn for other countries from Swiss pensions.

### **The Swiss Pension Scheme: Institutions and Outcomes**

**Key elements.** The two main pillars of Switzerland's pension system are more or less of equal importance. The first pillar AHV/AVS is a pay-as-you-go (PAYG) system and strives to provide a basic subsistence income level to all retired residents. The second pillar is an employer-based, fully funded occupational pension scheme, mandatory for all employees whose annual income exceeds a certain threshold. Means-tested supplemental benefits may be claimed if a retiree's total income does not cover his or her basic needs in old age. A voluntary third pillar, which is an individual tax-deductible savings account for retirement, complements the scheme (see Table 13.1).

*Table 13.1 here*

Taking the first and second pillar together, an individual with an uninterrupted working career can expect a replacement rate of approximately 50–60 percent. The net replacement rate after taxes often amounts to 70–80 percent even for higher levels of income, and it can reach 100 percent for beneficiaries with dependent children. In contrast to other countries, Swiss replacement rates are similar for both lower and higher incomes due to a careful integration of the first and second pillars. In addition to retirement income, the first and second pillars also provide disability insurance, benefits to surviving spouses and children, and to dependent children, even if the main claimant is still alive.

First pillar benefits depend weakly on income and in a linear way on the number of contribution years, including those granted for child care. Conditional on having contributed at least 45 years to the system, a minimum pension of 13,680 CHF (approx. US\$15,000) per year is payable. A majority of retirees qualifies for a pension close to a maximum benefit level, which is equal to twice the minimum pension (i.e., 27,360 CHF). The statutory retirement age is 64 for women and 65 for men. The earliest age at which first pillar benefits can be claimed is 62 for women and 63 for men, subject to an actuarially fair benefit reduction of 6.8 percent per year. Working beyond age 64/65 is possible, but most work contracts specify a retirement age that coincides with the statutory age of retirement. First pillar benefits are financed by a proportional tax on earned income, without a cap. They account for approximately 70 percent of AVS/AHV revenue. The remaining financing comes from earmarked value-added taxes and a fixed share of additional funds paid from general government revenues (see Table 13.1).

Since 1966, means-tested supplemental benefits may be claimed as part of the first pillar when total income does not cover basic needs in old age. Eligibility for benefits is limited to individuals who receive an old-age or disability pension, live in Switzerland and have Swiss or EU

citizenship, or have been living in Switzerland for at least 10 years. These additional benefits usually result in an income that is above the poverty threshold. The guaranteed total income is approximately 36,000 CHF for singles and 51,000 CHF for couples (without children).

A voluntary third pillar of individual savings complements the first and second pillars for retirement. Given the already high replacement rate provided by the first and second pillar, the third pillar is primarily important for the self-employed (who are not covered by the second pillar), and for individuals with contribution gaps. Since contributions are fully tax-deductible up to a certain amount, the third pillar has also become a popular instrument for middle and high-income earners to save taxes.

**Occupational pension scheme.** The second pillar in Switzerland is based on occupational pensions, mandated by law, but organized by employers. Several possible organizational forms vary by the degree the pension sponsor handles risks, the two polar cases being autonomous pension funds with little or no outside insurance for risks such as longevity and investment risks, and collective organizations which sub-contract all risks with an insurer. Typical examples of autonomous funds are pension schemes directly related to a company, but legally independent. Typical examples of collective organizations are insurance companies that offer standard contracts to employers to organize the second pillar in both the accumulation and decumulation phase. Table 13.2 gives an overview of the type and size of different pension plan structure.

*Table 13.2 here*

The accumulation of retirement assets and their withdrawal as annuities or lump sums are usually organized by the same pension provider. The strong link between the accumulation and decumulation phases is an important feature of the Swiss system. The institutions that implement occupational pension schemes according to the terms of the BVG/LPP law (*Bundesgesetz über die*

*berufliche Alters-, Hinterlassenen- und Invalidenvorsorge*) must be registered. The managing body must include as many representatives of employees as of employers, having the same rights. Individual contributions and benefits. Participation in the occupational pension scheme is mandatory for all employees with annual earnings of 21,060 CHF or more. Approximately 96 percent of working men and 83 percent of working women are covered by the second pillar. The insured income above the threshold and below an upper threshold (at present 82,080 CHF), is called the *mandatory part*. The income above the upper threshold is called the *super-mandatory part* of the second pillar. While the mandatory part is subject to stringent regulation—minimum contribution rates, minimum interest rates and the conversion rate—there are few restrictions on the contract conditions offered by the insurance companies in the super-mandatory part. By law, pension plan providers are required to insure the mandatory share. They are free to provide insurance for the super-mandatory part as well, but most do because the second pillar is important in attracting a well-educated workforce. Both mandatory and super-mandatory pension contributions are tax-exempt.

Contributions to the occupational pension plans correspond to a certain fraction of an employee's salary (depending on his age), of which the employer has to pay at least half. When an employee starts working at another company, all of the accumulated contributions (including the employer's part) are transferred to the new fund. The total amount of assets at retirement is thus accumulated over the entire working life and is a good proxy for lifetime income. A majority of individuals are covered by DC plans, though given the stringent regulation and income guarantees for all plans, the difference between DB and DC plan is small. Even in DB plans, in which benefits are based on a final salary, contribution gaps must be closed to qualify for full benefits in retirement. For example, an individual's pay increase triggers the need for additional payments to



the plan. On the other hand, extensive income guarantees for DC—a minimum interest rate on accumulated assets, a minimum conversion rate, re-insurance of pension income up to 150 percent mandatory coverage, no obligation for retirees to cover financial shortfalls—make DC plans look very much like DB plans.

The occupational pension wealth can be withdrawn either as a monthly life-long annuity, a lump sum, or a combination of the two components. In some plans, the cash-out limit is equal to 50 or 25 percent of accumulated capital (the legal minimum). In most plans, individuals must declare their choice between three months and three years prior to the effective withdrawal date, depending on the insurer's regulations. Many pension insurers define a default option if the beneficiary does not make an active choice. In 2012 approximately 30 percent of new retirees (which includes individuals not covered by the second pillar) got a lump sum payment at retirement (up from 24 percent in 2004).

Occupational pension annuities are proportional to the accumulated retirement assets (contributions made during the working lifetime plus accrued interest). Retirement capital  $K$  is translated into a yearly nominal annuity  $B$  using the conversion rate  $\gamma$ :  $B=\gamma*K$ . The conversion rate is independent of marital status, income, or gender (at least in the mandatory part), but it does depend on the retirement age. By law, the annuity option includes dependent children's benefits of up to 20 percent of the main claimant's benefit for each child younger than 18 (or below the age of 25 if still dependent), as well as survivor benefits equal to 60 percent of the deceased's pension. Combined with a uniform conversion rate, these additional benefits create a sizeable redistribution between married and non-married male annuitants. On average, female annuitants create the same costs as males, with their longer life expectancy compensated by low expected survivor benefits. Pension funds are requested to index annuities to inflation, if the fund's financial situation allows

it to do so. At present, only a few funds are actually able to index pensions to inflation, due mainly to the great liabilities created by a very high conversion factor in the mandatory part.

The annuity is subject to normal progressive income tax rates. Additional income from other sources, for example from the first pillar, increases the effective marginal tax rate under the annuity option. The lump sum, on the other hand, is taxed only once (at retirement). The tax rate applied to the capital option varies greatly across Swiss cantons. The present value of the tax bill is almost always smaller under the lump sum option compared to the annuity option, particularly for average and higher levels of second pillar pension wealth. Therefore, the differential tax treatment is expected to reduce the demand for an annuity.

Regulation. The BVG/LPP law specifies minimum requirements along several dimensions. While a regulation of the contribution rates and certain restrictions on pay-out options are not uncommon in an international context, the law also mandates the minimum interest rate for old age credits and the conversion factor at which the accumulated pension capital has to be translated into a life-long annuity. The minimum interest rate on accumulated old-age balances is determined by the federal council and is periodically adjusted taking into account market data. Figure 13.1 depicts the evolution of the minimum interest rate together with market interest rates and the so-called technical interest rate (not regulated by law) used to discount future liabilities of the plan. Figure 13.1 also contains the returns of a fictional pension fund portfolio containing 40 percent shares. This portfolio proxies the returns of a typical pension fund investment portfolio pretty well. It illustrates the high volatility of market returns in recent years. Minimum interest requirements thus greatly smooth the accumulation of old age balances, but create risks for the sponsors.

*Figure 13.1 here*

The conversion rate (the annuity factor) is fixed by law. As a consequence, it is even more

open to political pressure than the minimum interest rate as will be demonstrated in this chapter. Until 2004 and despite large changes in market conditions over the previous 20 years, the minimum conversion rate in the mandatory part was fixed at 7.2 percent. With the aim of improving the stability of the second pillar, the Swiss government implemented a series of changes in 2004, 2005, and 2006. An integral part of these changes was that the minimum conversion rate in the mandatory part was successively lowered to 6.8 percent by 2015. Pension funds are free to set the conversion rate in the less-regulated super-mandatory part of the second pillar, but until 2003, conversion rates in the mandatory and super-mandatory part were virtually identical. In 2004, several large pension funds started to reduce the conversion rate in the super-mandatory part to 5.4 percent for women and 5.8 percent for men. Since then most other pension funds have followed. Surprisingly, there is little variation over time in the conversion rate not only for the tightly regulated mandatory part, but also in the virtually unregulated super-mandatory part. This is another informal indicator for the high utility value attached to policy smoothing, which is typical for Switzerland's high-stability environment.

The pension funds also have to meet certain requirements on the degree of funding, their investment structure, as well as on transparency issues. There is little regulation (and even less reliable representative data) on the asset and liability management of the different pension funds.

**Current demographic and economic situation, and labor markets.** As in other industrialized countries, the demographic situation in Switzerland has seen a substantial increase in life expectancy and a low fertility rate. As shown in Table 13.3, the total fertility rate declined from 2.1 children per woman in 1970, to 1.5 children per woman in 2000. Over the same period, the remaining life expectancy at age 65 increased for men from 13.3 to 17.3 years and for women from 16.2 to 21.1 years. This rise in life expectancy is projected to continue at the same rate until 2030.

This demographic transition is producing a substantial increase in the old-age dependency ratio. The fraction of individuals age 65+ to those age 21–64 has grown from approximately 18 percent in 1970 to 25 percent in 2000 and it will increase further to 43 percent in 2030.

*Table 13.3 here*

Despite the country's low fertility rates, the Swiss population is aging at a slower rate than most other European nations, due to high rates of immigration. Nonetheless, the rising old-age dependency ratio has a direct impact on the financial stability of the first pillar. If the current levels of contributions and benefits are left unchanged, the scheme will start running a sustained deficit very soon (see Table 13.3).

**Employment of elderly workers as a way to alleviate the pension problem.** Switzerland has a flexible labor market, a low unemployment rate as well as a low implicit tax rate on working beyond the age of 65 (for most individuals). Moreover, retirement at 65 or 64 is not legally mandatory, but represents eligibility for full public pension benefits. Individuals are free to postpone payment of benefits for up to three years at actuarially fair rates. Nevertheless, most labor contracts specify a retirement age—in most cases still mandatory—that coincides with the age of eligibility.

The positive work incentives are diluted to some degree by income effects due to high replacement rates even for high-income earners and generous means-tested supplementary benefits (Bütler and Teppa 2007; Bütler et al. 2013). These and widespread early retirement plans provided by occupational pension plans in the 1990s and early 2000s have shrunk the traditionally high labor force participation rate of elderly workers (see Figure 13.2). Since the turn of the millennium, the employment rate of older men has been more or less stable and may even be seen to increase slightly again.

*Figure 13.2 here*

An equally interesting fact is that the participation rate of women over age 50 has risen in the last decades, most dramatically for those of age 60–64. This can be attributed in part to the increase in the statutory age of retirement from 62 to 64, although the increase was weakened by a transitory decrease in the actuarial adjustment for early retirement from 6.8 percent to 3.4 percent. Hanel and Riphahn (2006) show that despite the relatively small reduction of retirement benefits by 3.4 percent during the transition period, more than 70 percent of females decided to postpone benefit take-up to the new retirement age. Turning to employment rates beyond the normal retirement age of 65, Switzerland has seen a decrease in participation for quite some time until a reversal of the trend around 2005. This date coincided with the reform of the second pillar and the tightening of early retirement conditions in most plans. The increase in labor participation of individuals older than age 65 has hardly been affected by the financial crisis (see Figure 13.2).

Employment of older people may also encounter difficulties due to other factors, such as health and working conditions. Using SHARE data, Bütler and Engler (2007) showed that although incentives still dominate all other aspects, health and working conditions also play a role in the labor market participation of elderly individuals. Employed persons in Switzerland are less often afflicted with health problems than in other European countries. Individuals with favorable working conditions as measured by job satisfaction, appreciation for work performance, and adequate pay and career opportunities are less likely to retire early.

**Adequacy of retirement income for spouses.** Adequacy of pension income is an important policy concern not only for the primary earner, but also for the surviving spouse in old age, most importantly for the partner who took care of children, and for the frail elderly during the accumulation phase. Decisions such as marriage, having children, and employment over the life-

cycle influence not only current disposable income, but also long-term financial resources of household members.

The provision of adequate consumption in old age had traditionally been a task of the family. Interestingly, it was the lack of income for widows that drove the political process to adopt a public pension system in Switzerland. With the emergence of formal pension plans, the dominant family-based income provision model was replaced by a pension rights based approach. The Swiss first pillar, AHV/AVS, started from the assumption of a permanent marriage in which the husband had the role of the breadwinner while the wife mainly took over unpaid childcare and household work. Married couples received a so-called couple pension, amounting to 150 percent of a single pension, which was related to the pension contributions of the husband (as explained above). The wife could not claim her own pension, but she received a generous widow's pension in the event of her husband's death.

Social liberalization seen in the later 20th century changed the character of family ties and a multitude of lifestyles weakened the traditional family arrangements. While the nuclear family continued to form the social reference model and the number of marriages remained high, divorce rates also increased sharply in the late 1980s.

To adapt the pension system to societal change, both main pillars were reformed in the 1990s, based on a separation of premarital acquired pension rights, and the division of acquired claims during marriage. The 10th AHV revision created a separate pension for both spouses based on individual notional accounts, where individual accounts record all pensionable contributions over the entire working life of a person. During marriage, spouses' contributions are equally split, including care credits. The latter is a fictitious income equal to three times the minimum pension granted for the total number of years in which the family takes care of children younger than age

16. Nonetheless, to maintain the character of a basic income and for financial reasons, total benefits of a couple remained capped at 150 percent of maximum individual pension benefits. While the reform promoted independence of the wife, it also created unintended incentives. For many women the generosity of childcare credits and the splitting of contributions led to a situation in which future pensions did not depend on their work income. This reduced the incentive of the secondary earner to work. For higher medium and higher incomes (roughly 60 percent of all couples), moreover, the cap creates a marriage penalty in retirement.

As a second change, a major reform of the divorce law regulated the mutual claims of the partners with respect to the accumulated pension assets in the second pillar during marriage. In case of a divorce, each spouse is now entitled to half the partner's accumulation during marriage, including interest earned. The split of the pension credits is mandatory and is outside the marital property consideration in the divorce case. In contrast to the first pillar reform, the mandatory split of funded plan balances did not impact labor supply of the secondary earner directly. If at all, it created a positive incentive to take up paid work, as employment-related pension plans provide better protection and higher benefits than stand-alone pension plans.

While the reforms of the two pillars hardly changed the material situation for intact marriages in retirement, they had an impact on the bargaining power of the spouses in retirement, and the income of both partners in case of divorce. The changes not only shifted some retirement income from the primary to the secondary earner, but also increased combined retirement income for a majority of divorced spouses. Figure 13.3 depicts the evolution of divorce rates before and after the reforms. The change in the divorce law as well as the pension reforms are mirrored by the data. Obviously the reforms affect both timing and likelihood of divorce. First, the divorce rates fluctuate around the time of the revision of the divorce law, going down prior to, and

rebounding after the change. It seems that some couples anticipated divorce in view of the changes, while others waited until the reform was in place. Second, the relative difference in divorce rates between older couples and the total population decreased significantly after the period of social reforms. This pattern suggests that the change in individual claims as a consequence of the pension reforms might have led to an economic reevaluation of marriage and divorce (see Figure 13.3). In the last few years, divorce rates of elderly couples have almost reached the average divorce rate of the population, suggesting that factors other than pensions play a role. Nonetheless, the magnitude of the relative and discontinuous change in divorce rates around the period of reform remains very large.

*Figure 13.3 here*

### **Annuitization: Not Rational, Or Rather Too Rational?**

Making decisions for many decades ahead is a difficult task, so it comes as no surprise that behavioral anomalies in retirement planning abound. While some of the mistakes that individuals could make are taken care of by public pension plans and regulation, others remain. The shift from a highly regulated first pillar with little choice to a more individual pension plan, often with many options to choose from, makes mistakes more costly for both individuals and the government. Behavioral mistakes have sparked a huge literature analyzing the anomalies and coming up with better alternatives. While there is certainly evidence that policy is challenged by behavioral anomalies, it might be equally challenged by strategic behavior, or ‘too much’ rationality. Strategic behavior could be as costly for the government as investment or spending mistakes. Undersaving, for example, might be caused by individuals underestimating their income needs in old age, or it might equally likely be caused by individuals who anticipate the government to foot the bill in



case of financial shortfalls in old age.

Behavioral anomalies and rational behavior often go hand in hand as illustrated in the following example. Bütler et al. (2013) exploit the large and sudden cutback in the conversion rate in the super-mandatory part to examine how changes in annuity values impact the annuitization decision. This can be identified by comparing the annuitization behavior of individuals who were affected by the reduction in the conversion rate, with observably similar individuals who were covered by an insurance company that did not reduce the conversion rate. The 20 percent reduction in the annuity value led to an approximately 14 percentage point drop in the annuitization rate. Interestingly, this policy change also triggered substantial anticipatory behavior: individuals who had planned to retire after the policy change shifted their retirement to earlier dates to take advantage of the favorable conditions prior to the change. In particular, there was a large spike in the number of retirees in the month prior to when the lower conversion rates became effective. The pattern suggests that individuals were well aware of the large loss in the annuity value.

Bütler et al. (2013) also showed that almost all beneficiaries chose a polar option and did not distinguish between the mandatory and super-mandatory part although implicit annuity prices were dramatically different after the reduction in the conversion rate in 2004. Taking out the super-mandatory capital as a lump sum and annuitizing the mandatory part should have been the dominating strategy for a majority of individuals who took out the full lump sum. That they did not do so is consistent with the proposition that many retirees do not make fully informed choices.

Using as an example the Swiss annuitization patterns in retirement, this section illustrates the tension between not-rational-enough behavior and potentially ‘too rational’ strategies. Cash-out decisions are influenced by three main factors: money’s worth ratios, behavioral anomalies,

and generous means-tested supplemental benefits that act as a supplementary longevity insurance. While the impact of generous income guarantees have been discussed elsewhere (Bütler and Staubli 2011; Bütler and Ruesch 2007), we will focus on the latter two factors illustrated by individual retirement decisions from Swiss occupational pension plans.

**Not so rational: Behavioral factors in annuitization decisions.** The behavioral economics literature has been able to account for many aspects of retirement planning, such as participation in employer-provided pension plans (Duflo and Saez 2003), contribution rates (Beshears et al. 2008), and portfolio allocation decisions (Choi et al. 2009). The recent literature on the determinants of individual cash-out behavior suggest that behavioral biases also play an important role in the annuitization decision (Benartzi et al. 2011; Brown et al. 2013). Brown et al. (2008), for example, show that framing matters for the annuitization decision. Under an ‘investment frame’ that focused on risk and return, only 21 percent of the individuals preferred a life annuity over a savings account. On the other hand, under a ‘consumption frame’ that highlighted the consequences for lifelong consumption, 72 percent chose the life annuity. More recent contributions in the field try to come up with recommendations to improve individual decision-making using nudges and defaults, thus increasing the likelihood that people will choose the annuity (Beshears et al. 2014).

Figure 13.4 provides graphical evidence of how Swiss defaults influenced the fraction of capital cashed out at retirement. While good aggregate statistics are hard to get, on average 60 to 70 percent of all individuals annuitize their accumulated pension wealth. Figure 13.4 presents the fraction of capital cashed out at retirement based on administrative records from several pension funds and large insurance companies. On average and consistent with aggregate numbers, annuitization rates are high, but there are also large and persistent differences between different

plan sponsors. A part of the difference can be attributed to a composition effect: individuals covered by collective funds tend to earn less and to be poorer, as measured by their accumulated pension wealth. Nevertheless, annuitization patterns remain virtually unchanged after controlling for composition. More importantly, there are differences in the standard cash-out option at retirement for otherwise almost identical pension plans. Only between 10 to 30 percent of all individuals covered by an autonomous pension plan cash out all or a fraction of their pension wealth, but even for these autonomous pensions plans, annuitization patterns differ. Interestingly, the two companies with the highest annuitization rates are companies in the tradition of defined benefits (Textile and Public Service in Figure 13.4). The next two companies (Manufact A and B in Figure 13.4), on the other hand, have a defined contribution tradition. In all four companies mentioned above, individuals were allowed to cash out their full or partial retirement balances. But they must take the initiative if they wish to choose this option, informing the pension sponsors six to 36 months prior to retirement.

*Figure 13.4 here*

The insurance companies, labeled Insurance I and II, take another approach. The sponsor takes the initiative and actively informs the contributors ahead of time about the choices they can make. The difference between Insurance I and Insurance II is that the former forces individuals to make an active decision (no default), while the latter has an annuity default option, which is also communicated to the individuals. This seemingly small difference triggers a stable gap in annuitization rates of approximately 10 percentage points (after controlling for composition effects) between the two very similar plans (Bütler, Staubli, and Zito 2013).

The annuitization behavior in Swiss occupational pension plans is in line with our previous research on the role of behavioral factors in cash-out decisions at retirement (Bütler and Teppa

2007). For instance individuals mostly stick with the sponsor's default option, rather than making an active decision. In particular, the likelihood to cash out pension wealth is significantly higher in companies that provide the (partial) lump sum as a default. Interestingly, several small pension funds displayed almost no variation with respect to the annuitization decision: all retirees chose either the lump sum or the annuity. Pension fund managers usually explain the phenomenon by referring to peer effects and an implicit standard option ('it has always been done like that').

The high rate of annuitization in Switzerland may also be attributed to the *framing of the scheme*: occupational pension benefits were traditionally framed as annuities, and very recently, many contributors to the system were unaware of the sum of money they had accumulated, though they knew the approximate amount of their monthly payments. To improve transparency, starting in 2005 all pension funds were required to provide insured participants with a yearly statement (many funds offered such statements already before the mandatory introduction). The statement declares the amount of capital accumulated to date and reports the expected approximate annuity stream (based on an extrapolation of current earnings and interest rates). Interestingly, with respect to framing, for most plans the space on the paper given to annuity streams (which also include survivor benefits and benefits in case of disability), is much larger compared to the space given to the accumulated capital. The statement on an individual's occupational pension benefits thus comes close to what Brown et al. (2008) call a 'consumption frame,' which they found was likely to induce beneficiaries choose the annuity.

**'Too' rational: Means-tested benefits and annuitization.** Approximately 12 percent of all Swiss retirees receive means-tested benefits as part of the first pillar, because their total income does not cover basic needs in old age. These very generous supplemental benefits have contributed to a low poverty rate among the elderly in Switzerland, but they may also have had unintended

consequences for the annuitization decision. In particular, because means-tested benefits provide an implicit insurance against outliving one's assets, older individuals have a strong incentive to cash-out their accumulated pension wealth. For the government, strategic decumulation of assets in view of a generous means-testing world can be very costly.

The yearly amount of means-tested benefits is obtained by summing up all applicable expenditures and subtracting all pension income, investment income, and earnings, plus one-tenth of wealth exceeding a threshold level of 25,000 CHF for singles and 40,000 CHF for married claimants. Applicable expenditures include a cost-of living allowance, health insurance expenditures, and rent payments. Given that pension income is fully taken into account in the calculation of means-tested benefits, an annuity offsets the means-tested benefits one for one. By contrast, a lump sum payment has no effect on supplemental benefits as long as the total wealth (including the lump sum) is below the threshold level. Even if the total wealth does exceed the threshold, only one-tenth of wealth is credited against means-tested benefits. Moreover, since the eligibility age for benefits in pension plans is typically younger than the statutory retirement age, the lump sum can be used to finance early retirement. Once the statutory age of retirement is reached, means-tested benefits can be claimed.

The incentive to cash out their pension in order to apply for means-tested benefits later is particularly strong for those having little pension wealth. Middle-income individuals, by contrast, have to weigh the benefit of taking a lump sum and later receiving generous supplemental benefits, against the disadvantage of not being able to smooth consumption optimally. Maximal first pillar benefits amount to roughly 2,000 CHF per month. The means-tested benefits increase total income to approximately 3,000 CHF a month. Thus an individual with a monthly second-pillar benefit of less than 1,000 CHF a month (which corresponds to accumulated occupational pension wealth of

approximately 170,000 CHF) and little non-pension wealth is always better off withdrawing the accumulated capital upon retirement, spending it quickly and then applying for means-tested benefits.

Figure 13.5 plots the fraction of individuals who annuitized at retirement as a function of the level of old-age capital. Clearly, the frequency of taking an annuity is low for people with small capital stocks, and it increases with higher levels of second pillar wealth. This pattern is also in line with Bütler and Teppa (2007) who showed that the probability of annuitizing increases with accumulated wealth. In Bütler et al. (2013), it is shown that optimal annuity demand and consumption patterns derived from a realistic life-cycle model under a social security scheme calibrated to the Swiss scheme comes close to the observed pay-out pattern. A comparison of model results and real-world data suggests that means-tested benefits do substantially decrease annuity demand for individuals with low or medium levels of pension wealth.

*Figure 13.5 here*

These findings do not preclude other explanations for the increase in annuitization rates with accumulated capital. For instance, less wealthy individuals may favor the lump sum because they tend to have a higher mortality risk. However, the likelihood to annuitize continues to increase even for relatively high levels of pension wealth where health is not an important factor. The same is true for women for whom differential mortality is very small. Moreover, it is well known that financial literacy is positively correlated with income and wealth (see, e.g., Lusardi and Mitchell 2007). Therefore, annuitization rates may increase with accumulated capital just because wealthier individuals make more informed choices. The increasing frequency of taking a mixed option with accumulated capital may be interpreted as indirect evidence for a positive relationship between investment skills and (pension) wealth. On the other hand, tax incentives to opt for a split between

the lump sum and the annuity instead of a polar option also go up for increasing levels of pension wealth.

Strategic decumulation of retirement savings not only influences individual consumption profiles, but it also generates costs to the government via two channels. The first arises because of the direct financial costs of boosting retirement incomes to the subsistence level. The second channel results from an induced change in behavior. If individuals switch from an annuity to a cash-out option, the government provides insurance to those with a higher expected income, while the unused assets of those with a premature death fall to the heirs and not the the insurance provider. Bütler et al. (2013) show the benefits and costs of various reforms to limit government expenditures. A first reform might ban cash-outs altogether, while a second would mandate annuitization only to a level corresponding to the subsistence level at retirement. In the latter case, the government still picks up the bill for those with a lump sum in case of low capital returns or high inflation. As a last reform option, a tightening of the asset test is considered, which would eliminate the possibility of claiming means-tested benefits before one's capital is completely exhausted. As before, this policy change would decrease the burden for society directly via a later claiming time when people have to run down assets completely, and indirectly through higher annuitization rates so people avoid low consumption in old age. The indirect effect would be strong enough to halve the wedge between optimal and observed annuitization rates. While limiting cash-outs seems like the obvious solution to the problem of strategic decumulation, one has to keep in mind distributional aspects. Low income people would suffer the most from limiting cash outs, also because they usually have a lower life-expectancy.

Swiss annuitization patterns suggest that individuals navigate some complex decisions in ways that are highly rational. At the same time, people are also influenced by behavioral factors

such as defaults. But what determines whether and when individuals act very rationally or not rationally enough? There is of course almost no direct empirical evidence for potential reasons for either of the two behavioral patterns. A first indication might be the surprisingly large differences in individual decisions between companies (as is clear from Figure 13.5 and is also discussed in Bütler and Teppa 2007). It seems that at least some implicit or explicit advice is taken from discussions and information at the workplace. Due to the tight link between accumulation and payout phase, formal advice from financial intermediaries plays a minor role. The public debate around means-tested benefits in old age might have induced individuals to think more clearly through the consequences of choosing between a lump sum and an annuity at retirement.

### **Future Reforms Under Political Constraints**

While the three pillar structure of the Swiss old age insurance system is generally undisputed, both the first and second pillars will have to tackle the problem of too-generous benefits combined with insufficient contributions. Attempts to stabilize the Swiss pension system have proven to be difficult, not least because the Swiss political system is based on direct democracy. Swiss policymakers face strong political constraints for potential reforms, as the public possesses what amounts to veto power (Bütler 2009). Any change in the law can be (and usually is) challenged by a facultative referendum.

The last time the first pillar was reformed was in 1997, when the female retirement age was raised from 62 to 64. All further attempts to reform the system have failed so far either in parliament or at the ballot. There have been few fundamental changes in the second pension pillar. In view of the increase in life expectancy at age 65 of about 3 years since 1985, and the fall in capital market returns, the conversion factor should have been reduced by approximately 15 to 20



percent. Nevertheless, minimum interest rates and the conversion factor have remained constant for almost 20 years. The illusion of perpetual stability was only squashed after the stock market downturn at the beginning of 2000. At that time, market returns fell below the four percent minimum return requirement and many pension funds became underfunded. After an intense political debate, the Swiss Federal Council agreed to reduce the minimum return requirement to 3.25 percent as of January 1, 2003. Since then, the interest rate has been adjusted several times and now follows market interest rates more closely than before (see Figure 13.1).

The Swiss parliament also changed the occupational pension scheme in 2005, including new regulations concerning transparency, an extension of the coverage of the second pillar to low-income and part-time workers, and a step-wise, but small reduction of the conversion rate in the mandatory part to 6.8 percent by 2015. The adjustments in the second pillar proved too weak to trigger any serious political opposition, but also far too weak to secure long run sustainability of the scheme.

How difficult it can be to change the public's vested interests can be illustrated by a recent vote on the conversion rate (or annuity factor). As a consequence of the impact of the financial crisis, the government proposed another reduction, on top of the already implemented reform. But in March 2010, 73 percent of Swiss voters chose not to reduce the second pillar conversion rate. Since most national votes are evaluated by a telephone survey of individuals who participated in the ballot (the so-called VOX database), we are able to analyze results. Table 13.4 presents the results of a simple regression analysis on the potential determinants of this outcome on individual survey data (first column in Table 13.4), complemented by an analysis of community level data in which the approval rate of the initiative is regressed on similar socioeconomic variables.

*Table 13.4 here*

In the first specification of Table 13.4 we regress the outcome ‘approve the reduction in the conversion rate’ (1 = approval) on individual demographic and socio-economic variables taken from the survey. In the second specification, the approving vote share of 2400 Swiss communities is regressed on similar aggregate indicators. The results are informative: French- and Italian-speaking individuals and communities were significantly less willing to approve the conversion rate cut than the German-speaking individuals/communities, in line with previous research (Eugster et al. 2011). The most likely interpretations are cultural differences between the regions (as economic variables play a minor role), or minority groups voicing a concern against social insurance cuts imposed by the dominant language group (German). A second interesting result has to do with trust. For the analysis on individual data, distrust was one of the most influential variables shaping the vote.

Surprisingly, approval of a cut in benefits increases in a more or less linear way with age (in several specifications tested). While individuals already retired or who are close to retirement age soon would have been grandfathered (and might have benefited indirectly from the reform in the form of more secure income streams), the ranking of middle-aged and young voters is surprising. Given that the young would have benefited most from a reduced conversion rate (and thus lower forced redistribution), the low support of the reform by this group is a puzzle.

Other demographics had the expected signs. Better educated voters were more likely to approve the reform. Richer individuals and those owning an apartment or house (as a proxy for wealth) were slightly more likely to favor the reform (though the effect is not significant). Individuals with a high income (and presumably better education) already face lower de-facto annuity rates and would consequently have been less affected by the reform, since the politically-fixed annuity rate only concerned contribution on income below a certain threshold.

Overly generous nominal income guarantees implicit in the high conversion rate also limit the ability of pension funds to adjust pensions to the rate of inflation. Surprising to an economist, this aspect was almost completely ignored in the public discussion preceding the vote. A plausible explanation is that voters' perceptions and preferences might be influenced by past experiences. Not having had significant inflation during the past three decades, the Swiss may have forgotten just how important indexing annuities is.

Taken together, these results demonstrate not only the difficulty to reform a generous pension system with large vested interest, but also the importance for the government (or private pension sponsors) to gain trust and come up with convincing proposals. That people vote in their own interest need not make reforms more difficult. In our example, the grandfathering of the elderly brought important support for the reform. That the proposal was not accepted, nonetheless, also reflects the failure to convince an important group of potential beneficiaries, the younger voters.

## **Conclusions**

The Swiss three pillar retirement system provides policymakers with a rich context to explore policy revisions. Switzerland has a very comprehensive pension scheme based on two main pillars, in which a large element of retirement income comes from a mandatory occupational pension scheme. While individuals in Swiss occupational pension plans do not have much choice during the accumulation phase, they have considerable freedom in choosing how their capital will be paid out at retirement. This feature has the potential to undermine the adequacy of retirement income, especially for low- and middle-income earners and may lead to additional governmental expenditures in the form of means-tested benefits. Nonetheless, Switzerland still has relatively high annuitization rates compared to other countries, with only approximately 30 percent of

individuals cashing out their second pillar. Payout choices are significantly influenced by default options and peer effects. While behavioral anomalies have attracted quite a bit of attention and research in recent years, a bigger challenge for policymakers may be what to do when individuals behave rationally, strategically exploiting the interactions between the different income schemes in old age. The annuitization pattern in Switzerland supports the interpretation of rational individuals taking into account the possibility of claiming means-tested social assistance once wealth is depleted. The impact of the divorce law's new treatment of pensions provides another piece of evidence on the prevalence of rational decision making at advanced ages.

In view of institutional peculiarities and a strong impact of historical and societal context, it is difficult to come up with straightforward lessons for another country. A general finding from our analysis is that understanding individual pension decisions involve both rational and behavioral factors. As in Switzerland, and unlike in many European countries, U.S. individuals are used to taking large financial decisions concerning their pension wealth. It would thus be surprising to see completely different decision patterns in the US. Recent evidence on long-term care by Brown and Finkelstein (2008) supports the interpretation that individuals come up with choices that look close to the predictions from rational forward-looking optimization models. These findings lend support to the view that improving financial literacy is a very important component in policy making with regard to pension reforms. Nudging might do the trick when it comes to technical points or some tactical decisions, but it cannot replace education and information in an increasingly complex pension world.

The Swiss experience also demonstrates that political constraints should be taken seriously in reforming the pension system. Our small example illustrates that gaining a majority for a painful reform to the pension system is not an easy task. While many determinants of a reform support are

not surprising, our results show the importance of cultural and historical factors as well as general trust in the government. In view of fast population ageing, it seems easier to implement reforms that grandfather individuals already in retirement, such as an increase in retirement age.

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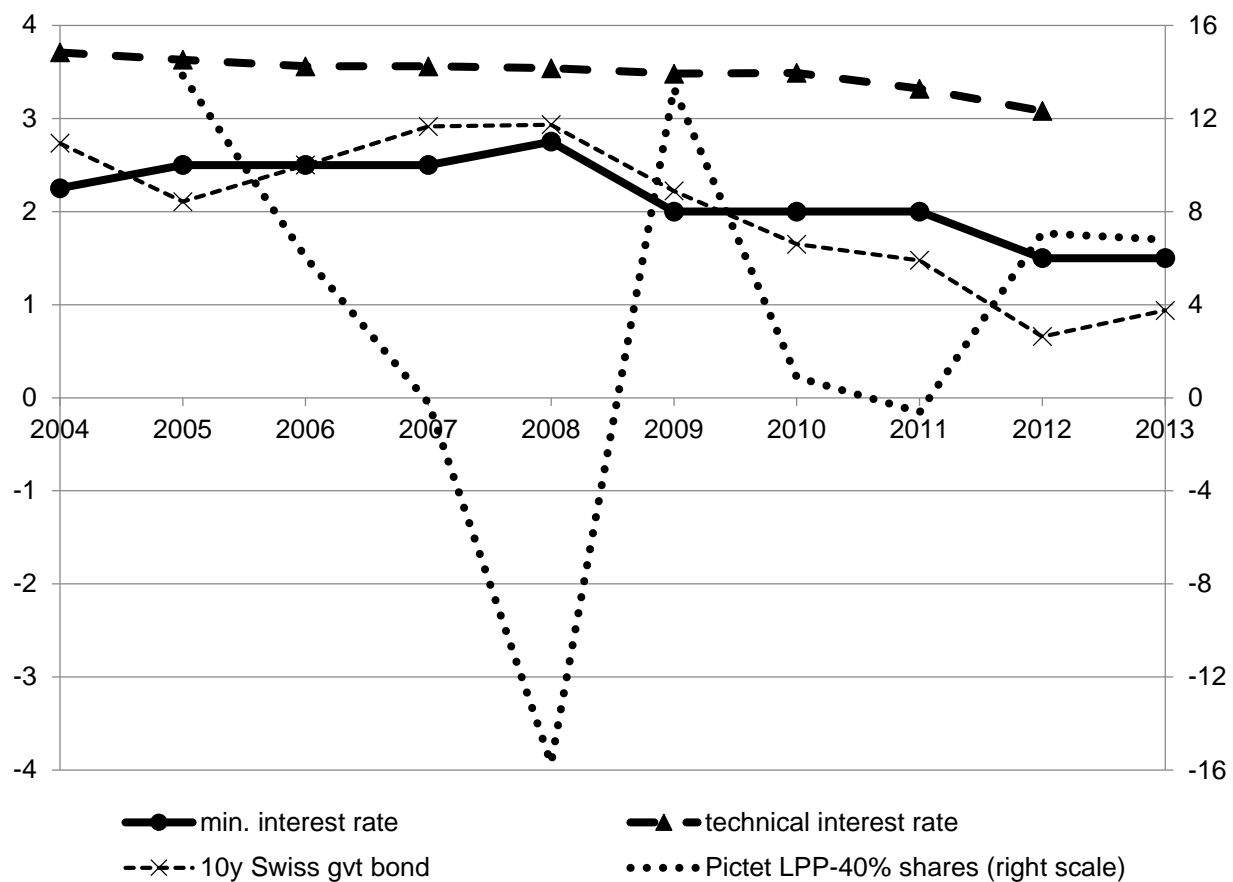
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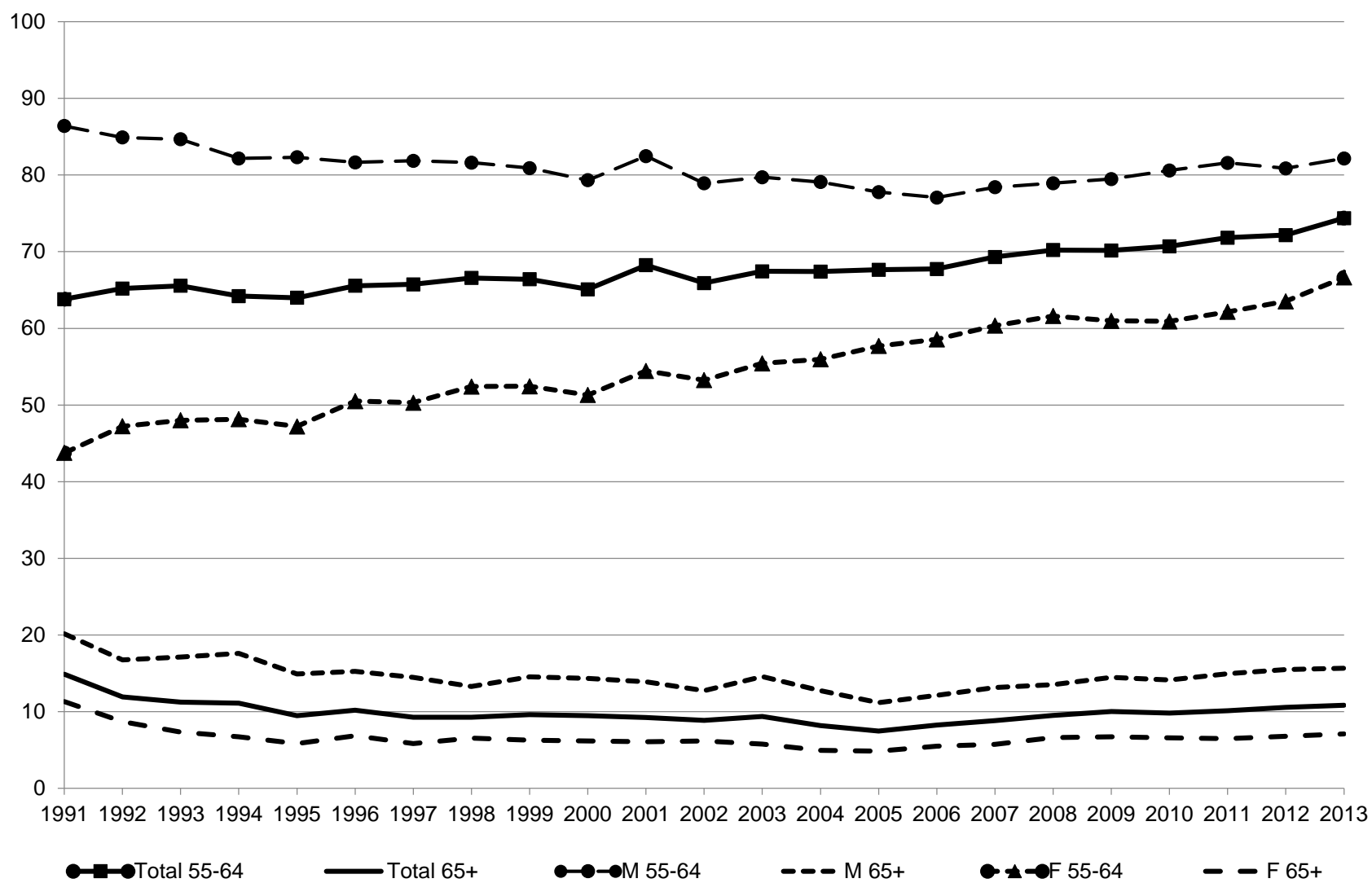
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**Figure 13.1.** Interest rates for Swiss occupational pension plans.

*Notes:* The minimum interest rate is determined by the Swiss federal council and is periodically adjusted. The technical interest rate is used to discount future liabilities of a pension plan. Pictet LPP-40% represents a synthetic investment with 40% shares, a typical portfolio of sufficiently funded pension plans.

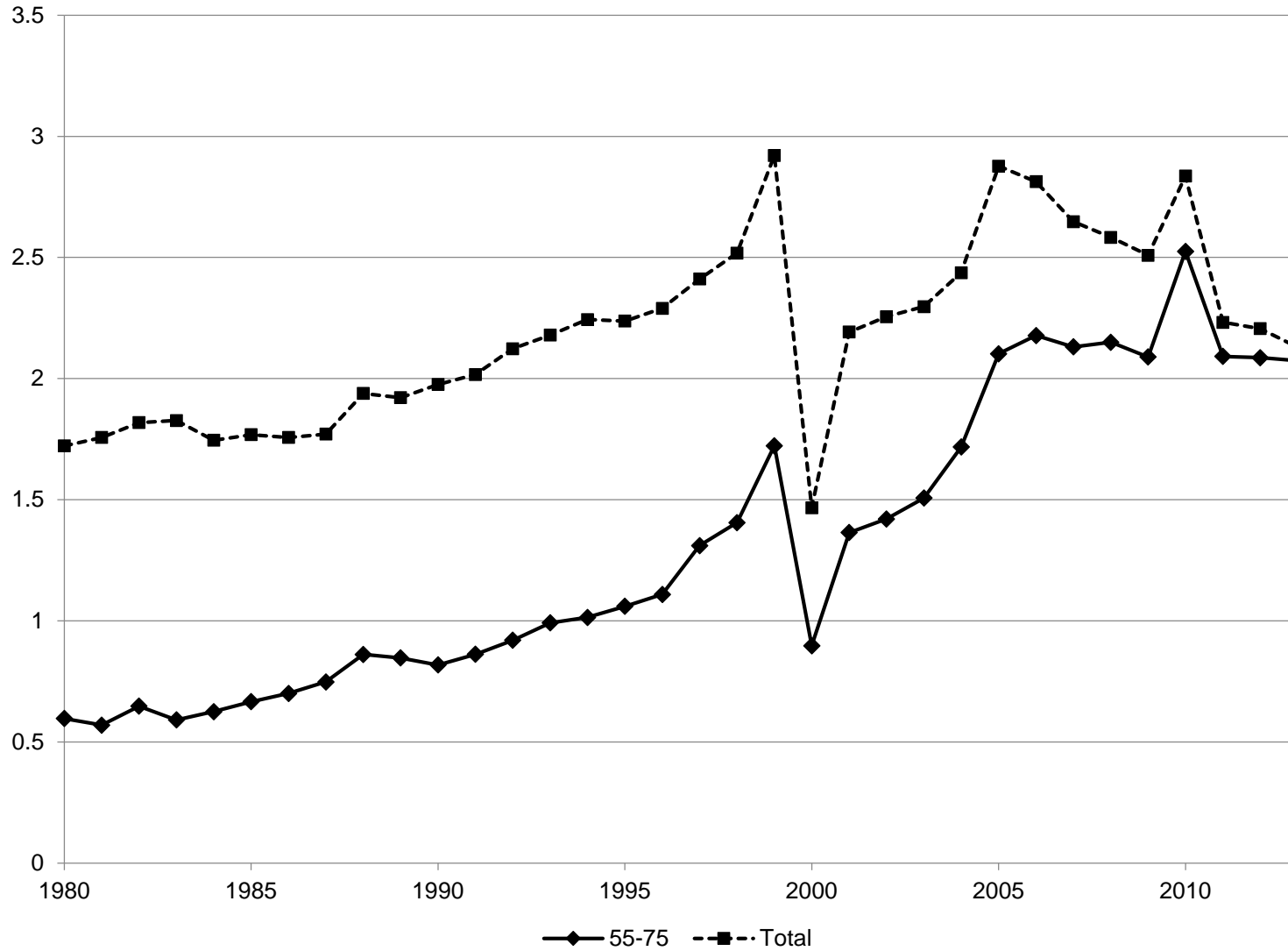
*Sources:* D. Cecil, Fondation Pictet (personal communication, June 19, 2014); SNB (2014); Swisscanto (2014); Schweizerische Eidgenossenschaft (2014); J. Steiger, BSV (personal communication, June 16, 2014).



**Figure 13.2.** Labor force participation of elderly individuals in Switzerland.

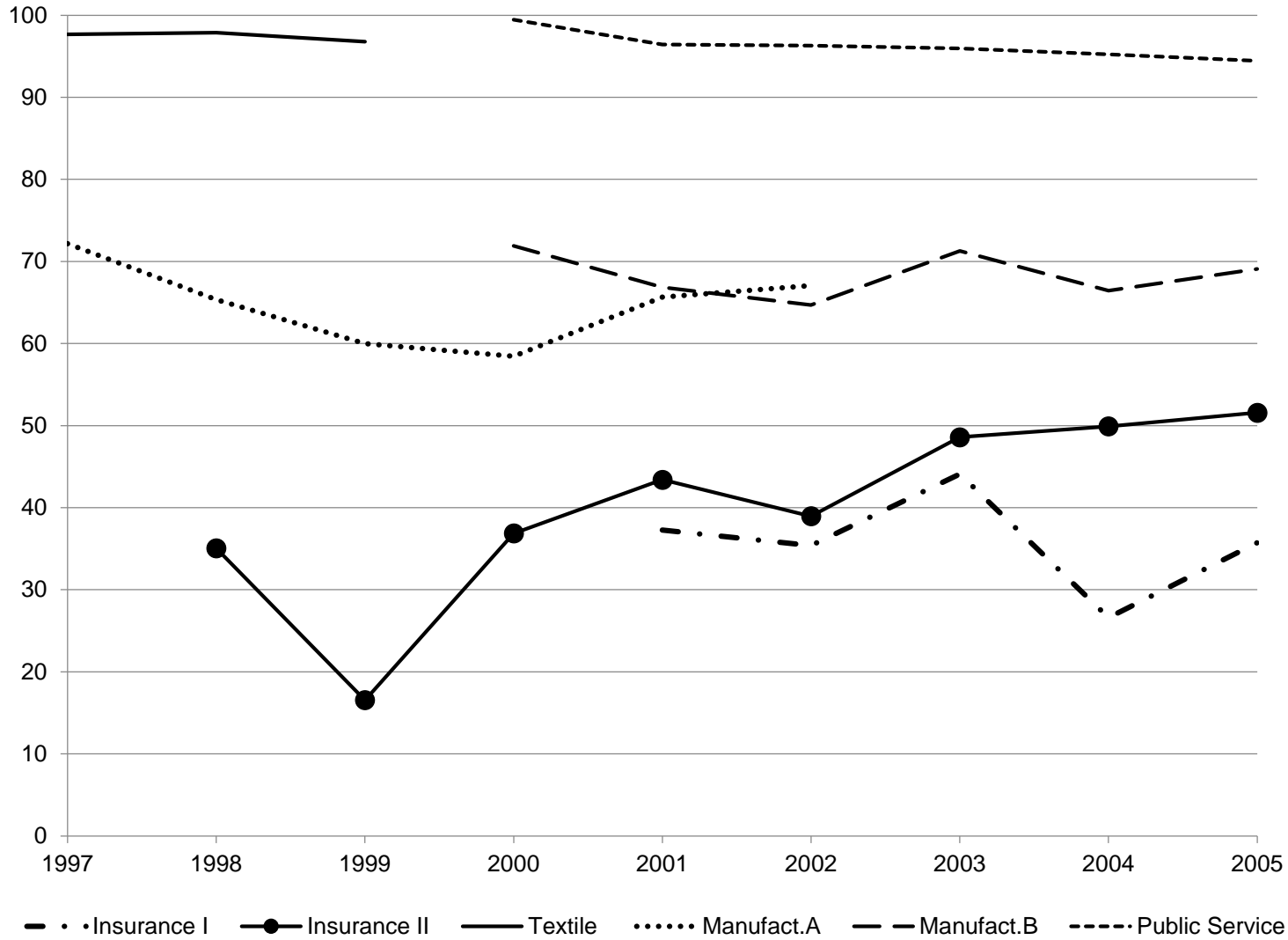
*Notes:* M refers to men, F refers to women.

*Source:* BFS (2014b)



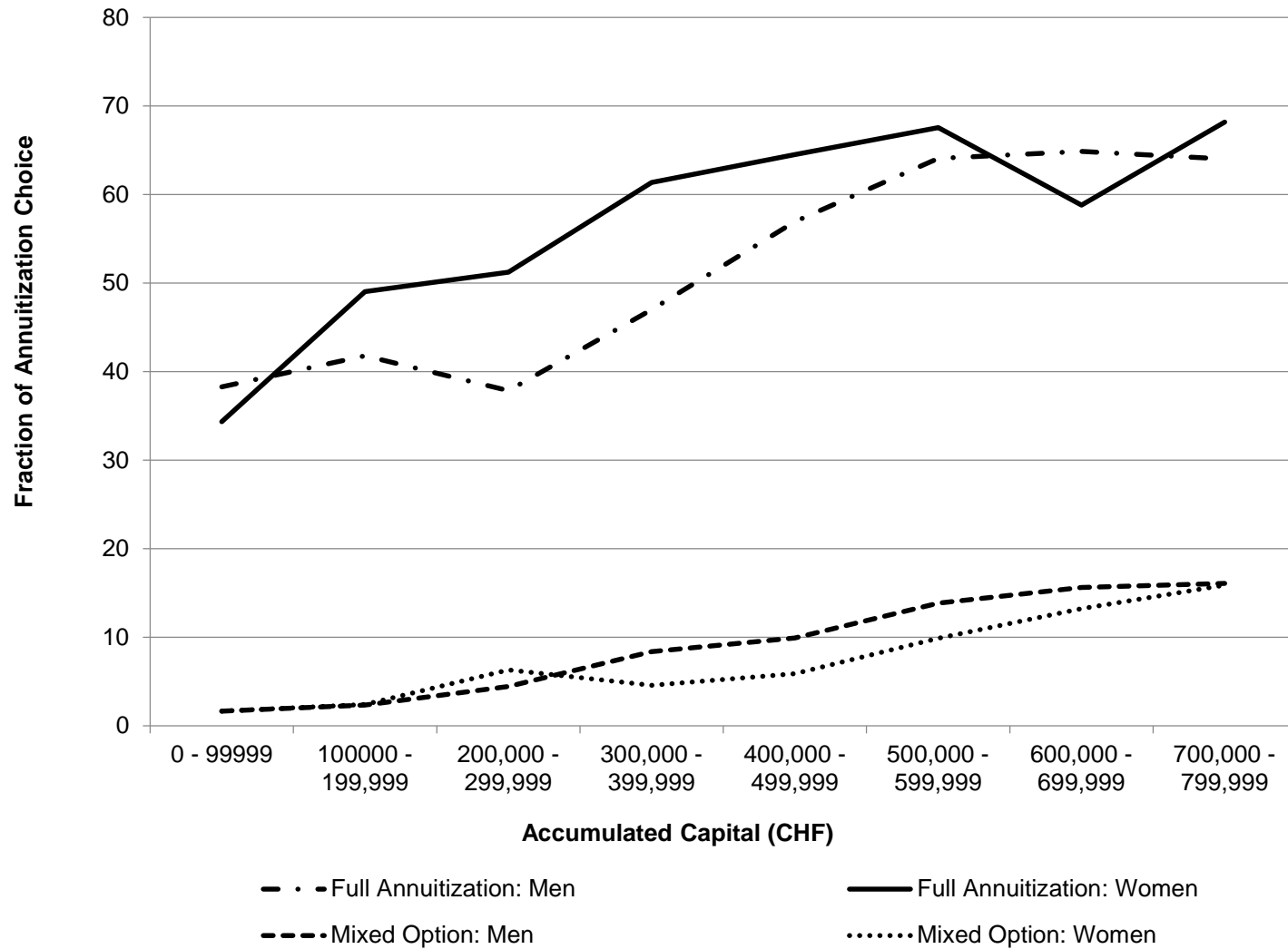
**Figure 13.3.** Divorce rates for couples between 55–75 and total Swiss divorce rates.

*Source:* BFS (2014c)



**Figure 13.4.** Annuitization rates for six pension providers prior to the reform of the occupational pension law in 2005 (which triggered a number of changes). Stable parameters (exception: decrease in supermandatory conversion rate for Insurance I in 2004).

*Source:* Individual data from Swiss pension plans.



**Figure 13.5.** Percentage of capital annuitized as a function of accumulated second pillar wealth (upper curves). Percentage of individuals opting for a mixed pay-out (10% capital or more, plus 10% annuity or more).

*Source:* Individual data from Swiss pension plans.

**Table 13.1.** Features of the Swiss old age pension system

First pillar: state pension	
Payment type	Size of the payment
Old age pension	Depends on contribution history and average lifetime earnings. The minimum and maximum full old age pensions are CHF 1,170 and CHF 2,340 per month, respectively; average old age pension is CHF 2,013 per month (BSV, 2013a).
Old person's child's pension (paid for dependent children)	40% of corresponding old age pension.
Survivor benefits	Depends on contribution history and average lifetime earnings of deceased person. If the person has died before the age of 45, prospective lifetime earnings are calculated. Survivor benefits are paid for widows and widowers with children and additionally widows that meet certain criteria. Orphans (full and half) are eligible as well until the age of 18 (25 if still in education). Widow and widower benefits are between CHF 936 and CHF 1,872, orphan children's benefits are between CHF 468 and CHF 936.
Supplementary benefits	Covers difference between basic living expenses (i.e. rent, health insurance, nursing or other care, and other essential needs) and the sum of old age pensions and other income. Means-tested benefits guarantee an income of roughly CHF 3,000 per month for singles and CHF 4,500 for married couples. In 2012, the average means-tested benefits were CHF 901 per month for people living at home and CHF 2,893 for people living in a nursing home (BSV 2013b)
Second pillar: occupational pension system	
Payment type	Size of the payment
Old age pension	Proportional to accumulated second pillar wealth at retirement. From 2014, the annual full old age pension is 6.8% of the total old age assets for both men and women in the mandatory coverage (up to an annual income of 84,240 CHF). Conversion rates are lower on income exceeding 84,240 CHF. Average second pillar old age benefits conditional on coverage were CHF 2,519 per month (BFS 2013).
Old person's child's pension	20% of corresponding old age pension per child; lower percentage for high wage earners.
Survivor benefits	Proportional to accumulated second pillar wealth at the time

of death of the insured person. Eligible for survivor benefits are widows and widowers with children or over the age of 45 if married for 10 years or more. Most pension providers also offer benefits for non-married couples. Orphan (full and half) children are eligible as well until the age of 18 (25 if still in education). Widow and widower benefits are 60% of the ordinary second pillar invalidity (if person deceased before pension age) or old age pension. Invalidity pensions are calculated by extrapolating the final old age assets, assuming that the individual contributes at the same level with an interest rate of 0. Orphan benefits are 20% of the ordinary invalidity or old age pension.

Third pillar 3a: voluntary provision	
Payment type	Size of payment
Capital from voluntary contributions	As of 2013, the maximum contribution per year is CHF 6,739 for individuals covered by a second pillar plan, and CHF 33,696 for those not covered. Contributions can be deducted from taxable income, but they can only be disposed of after pension age or when buying real estate. Upon reception of the capital, the amount is taxed at a reduced rate.

Sources: BSV (2013a, b); BFS (2013).



**Table 13.2.** Size and structure of occupational pension plans.

Type of risk coverage	Number of pension sponsors	Number of covered individuals	of which women (in %)	of which DC (%)
Autonomous (with & without reinsurance)	838	2.316.785	44.9	74.9
of which private	758	1.675.155	40.6	83.3
Partly autonomous (pension guaranteed by insurance and reinsurance)	1058	588.665	37.6	91.8
of which private	1050	586.070	37.5	91.8
Collective (all risks with an insurance)	163	1.003.579	37.0	91.5
of which private	161	1.002.970	37.0	91.5
Total (without savings account)	2059	3.909.029	41.8	81.7
of which private	1969	3.264.195	38.9	87.4

Source: BFS (2014a)

**Table 13.3.** Demographic trends in Switzerland

	1970	2000	2030	Change
Total fertility rate	2.1	1.5	1.52	-0.58
Life expectancy at age 65				
Men	13.3	17.3	21.8	+8.5
Women	16.2	21.1	24.7	+8.5
Old age dependency ratio	17.7	25	43	+25.3

Notes: Old age dependency ratio is the number of individuals aged 65 and over relative to the number of individuals aged 20 to 64.

Source: BFS (2014d), numbers according to middle scenario A-00-2010.

**Table 13.4.** Political support for a reduction in the conversion rate (annuity factor), individual data from telephone survey after the ballot.

	<b>Individual</b>	<b>Community</b>
	Dependent variable: Yes (=1) in ballot	Dependent variable: Percentage yes-votes in Community
Person aged 65 and over	0.189*** (0.035)	
Share of population aged 65 and older		0.299*** (0.019)
Person aged 45–64	0.047 (0.031)	
Share of population aged 45–64		-3,986 (4.701)
Latin speaking person	-0.082*** (0.026)	
Latin speaking community		-6.187*** (0.369)
House owner	0.063** (0.028)	
Taxable income per capita in 1'000 CHF		0.088*** (0.018)
Person with secondary education	0.169*** (0.031)	
Share of persons with secondary education		0.271*** (0.023)
Person with tertiary education	0.220*** (0.032)	
Share of persons with tertiary education		0.294*** (0.030)
Distrust in government	-0.092*** (0.027)	
Adjusted R2	0.249	0.912
Number of observations	881	2,401

*Notes:* The dependent variable is the decision taken in the vote (approval of annuity reduction=1, decline annuity reduction=0,

\*\*\*  $p < 0.01$

\*\*  $p < 0.05$

\*  $p < 0.1$