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McKinsey Switzerland

Making up lost ground

How Switzerland's second-pillar pension funds can improve their investment performance

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Making up lost ground

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Executive summary

Switzerland's pension system is strong, but reform is increasingly urgent

Across the developed world, pension systems are under pressure due to declining birth rates, rising life expectancy, and low or even negative interest rates. In response, pension funds have started to reduce benefits, raise active members' contribution rates, or both. Some governments have gone further, introducing structural reforms to their national pension systems.

Switzerland's relatively robust economic performance since the financial crisis has cushioned the impact of these challenges, but the country's second-pillar pension system is not immune to the global trends. Between 2008 and 2018, both public and private pension funds were forced to cut technical interest rates by more than 1.5 percentage points and reduce effective average conversion rates from 6.79 percent to 5.87 percent. Consequently, combined replacement rates for first- and second-pillar pensions have dropped by a full 10 percentage points over those 11 years (Exhibit 1). [1]

Nevertheless, the Swiss second-pillar pension system is better positioned to meet these challenges than many of its foreign counterparts. It is one of the best-capitalized systems in the Organization for Economic Co-operation and Development (OECD) countries, ranking fifth in total pension assets relative to GDP in 2018. Some pension experts, such as the Melbourne Mercer Global Pension Index, caution that, compared to peer economies, Switzerland has lower replacement rates for mandatory pension schemes, higher levels of household debt, and a greater likelihood of retirees experiencing relative income poverty. However, taking sizable voluntary pension savings, relatively high disposable incomes, and high household wealth into consideration, the OECD recently concluded that "prospects for elderly Swiss are comparatively bright"[2].

That said, Switzerland's current position of relative strength should not foster complacency among decision-makers or the electorate. The country's failure to implement reforms and address unfavorable demographic and market trends has caused it to lose ground to globally leading pension markets in recent years. Although new reform proposals for Switzerland's second-pillar pension system are currently being discussed, there is good reason to doubt they will be enough to sustainably solve the challenges that the system faces.

Exhibit 1

Swiss replacement rates/payments for an annual income of CHF 80,000
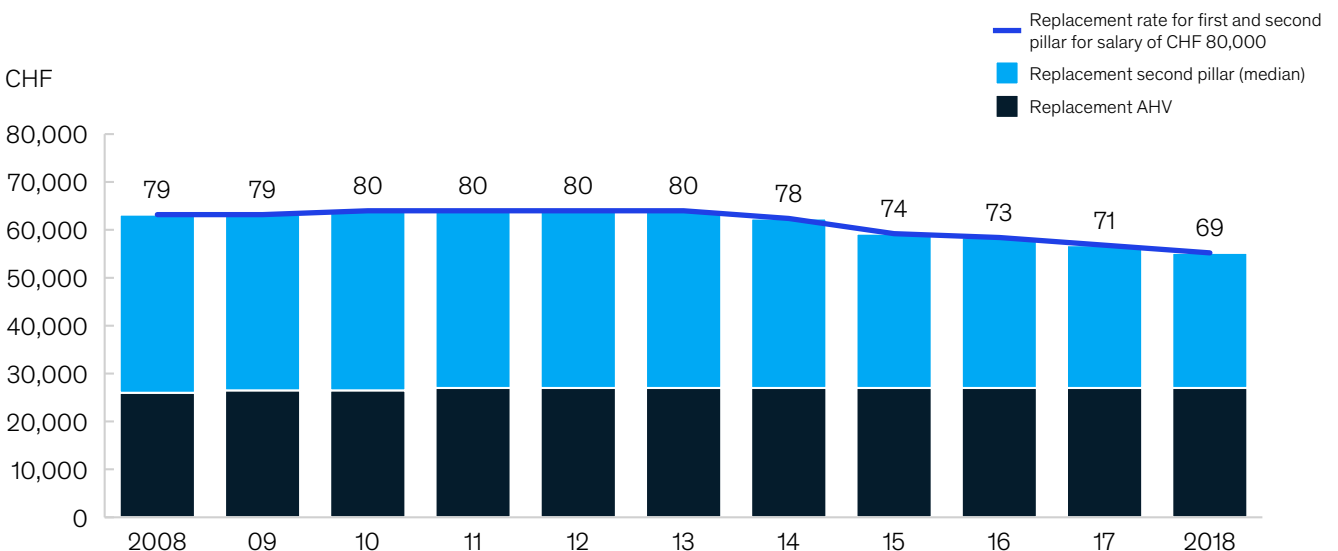
Note: The median replacement for the second pillar was calculated using real interest rates until 2014. As of 2015, the golden rule, which assumes that wage growth equals interest rate, was applied

Source: Swisscanto Vorsorge AG – Schweizer Pensionskassenstudie 2019

Current reform proposals do not address the investment underperformance of second-pillar pension funds

Given that investment income accounted for almost one-third of total pension contributions between 2008 and 2018, it is surprising that all reform proposals for the second-pillar pension system currently on the table remain silent on measures that could boost pension funds' investment performance. After all, Swiss funds' returns have lagged globally leading pension markets such as Canada, Denmark, and the Netherlands over the past decade. In fact, Switzerland ranks in the middle of the OECD pack in achieved real net investment returns, putting it more than 1.5 percentage points below the best-performing jurisdictions. While this metric creates an overly simplistic comparison, it does raise questions about the effectiveness of Swiss pension funds' investment management practices.

To more precisely assess the Swiss second-pillar pension funds' performance, our analysis breaks down investment returns into two components: the strategic asset allocation (SAA) benchmark return that measures the return generated by a largely passive investment approach in each asset class; and the net value-add, which measures a pension fund's ability to outperform its SAA benchmark after accounting for investment management costs. We compare the performance of Swiss pension

funds with that of their counterparts in Canada and the Netherlands, which are top performers in terms of local currency-based real net investment returns and feature long-standing and well-funded second-pillar pension systems that are broadly similar in structure to Switzerland's.

In both steps of our investment performance comparison we find that Swiss second-pillar pension funds structurally underperformed Dutch and Canadian peer institutions over the 2008 to 2018 period of our analysis, delivering 60 bps to 115 bps p.a. less in investment returns. More specifically, Swiss pension funds' weaker ability to generate net value-add (that is, to outperform their SAA benchmark) accounts for most of the observed performance gap. Differences in net value-add explain 60 bps of the annual gap between Swiss and Canadian pension funds and account for a full 90 bps p.a. of the gap between Swiss and Dutch institutions. On the other hand, differences in SAA benchmark returns, which we calculate in a way that largely avoids the distortive impact of differing investment environments and currency regimes between countries, almost double the performance gap between Swiss and Canadian funds (from 60 bps to 115 bps per year) but reduce the gap between Swiss and Dutch institutions by roughly 30 bps (from 90 bps to 60 bps per year) (Exhibit 2).

Exhibit 2

Total investment performance gap, 2008-18

bps p.a.

	Switzerland vs. Netherlands	Switzerland vs. Canada
Step 1 Δ Net value-add (average)	90	60
Step 2 Δ Pro forma SAA	-30	55
Total performance gap	60	115
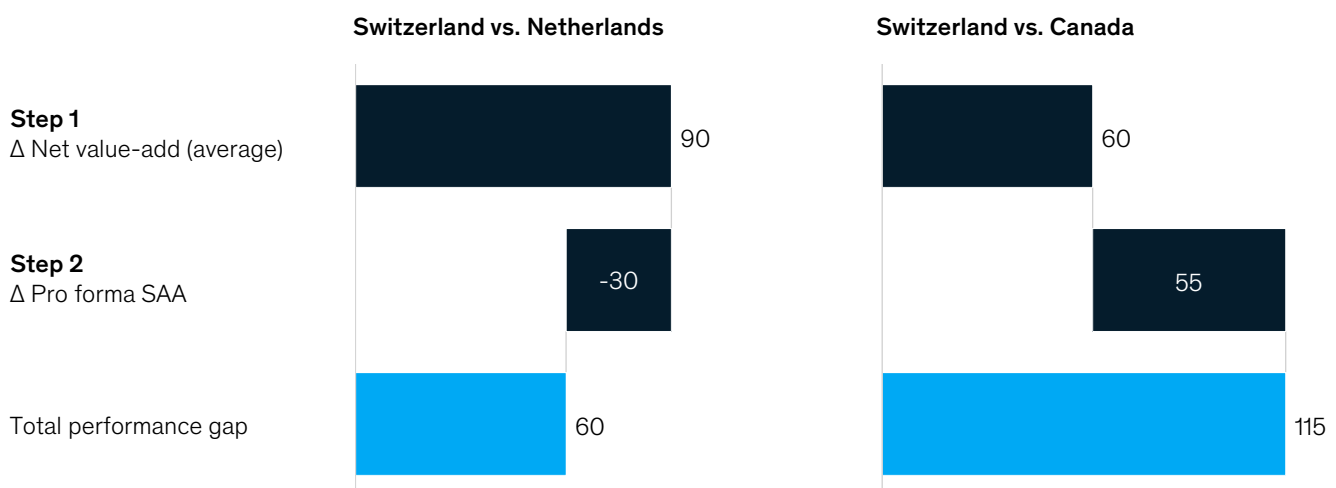
Source: McKinsey

Higher investment performance would significantly benefit the Swiss second-pillar pension system

To understand the implications of Swiss second-pillar pension funds' lower investment performance on the health of the overall system and the well-being of its beneficiaries, we translate our findings into four hypothetical scenarios. These scenarios assume Swiss second-pillar pension funds achieved investment returns in line with their Dutch and Canadian peer organizations.

We find that between 2008 and 2018 alone, investment performance in line with Dutch and Canadian pension institutions would have allowed Swiss funds to generate CHF 50 billion and CHF 95 billion in additional pension assets, respectively—increases of 24 percent and 45 percent over the investment income they achieved during that period. These higher investment gains would have allowed Swiss decision-makers to reduce the joint pension contributions of employers and employees by 11 percent to 21 percent over the same time-frame without reducing total accumulated pension assets by 2018 year-end. Such a reduction in contributions in turn would have translated into higher disposable income for employees and lower labor costs for employers.

Assuming that Swiss pension funds were able to sustain a peer-level investment performance over the full working life of an average Swiss employee, we estimate that this individual would have between CHF 52,000 (in case of Dutch-level investment returns) and CHF 102,000 (at Canadian-level performance) in additional pension savings at retirement, compared to a base case that assumes investment performance in line with the returns Swiss pension funds actually achieved between 2008 and 2018. These differences translate into roughly CHF 3,500 and CHF 6,900 respectively, in additional annual pension payments throughout retirement, representing increases of 12 percent and 24 percent over the base case.

We finally translate the above findings into the number of additional years (beyond the formal retirement age of 65) that an average Swiss employee would need to work and accumulate pension assets at the rate of investment returns achieved by Swiss funds over the 2008 to 2018 period in order to reach the pension savings that investment performance on par with Dutch or Canadian institutions would deliver. We find that the individual would have to continue working for an additional 2.3 years to match Dutch-level pension savings and 4.3 years to accumulate savings that Canadian-level investment returns would produce.

To raise the performance of its second-pillar pension funds, Switzerland would need to act on three fronts.

Why is the investment performance of the Swiss second-pillar pension system so much lower than that of its peers in Canada and the Netherlands? We see four main interconnected reasons:

1. Swiss pension funds are significantly smaller than their Canadian and Dutch counterparts. The average assets under management of the 15 largest pension funds in each country is CHF 78 billion in Canada, and CHF 76 billion in the Netherlands, but only CHF 19 billion in Switzerland.

2. Larger funds tend to benefit from economies of scale as the marginal costs of managing additional assets are typically very small. Larger funds also profit from stronger bargaining positions in fee negotiations with external fund managers and other service providers.

3. Larger funds tend to choose more efficient management and implementation styles, avoiding expensive fund-of-fund structures and managing a greater share of their assets in-house (which typically reduces costs). The Swiss funds in our sample managed only 29 percent of their assets internally, compared to 51 percent for Dutch peer institutions and 66 percent for Canadian funds.

4. Larger funds tend to have more professional governance and risk management practices in place. A 2016 study of Swiss second-pillar pension funds found that on average the surveyed institutions scored only slightly more than half of all possible points on governance quality. It also found "evidence for a lack of professional expertise among the governing bodies," raising significant concerns about the caliber of the funds' investment practices.[3]

Our analysis suggests a need for change along three dimensions in order for Swiss pension funds to improve their investment performance: 1) they would need to continue strengthening their own investment management practices; 2) Swiss lawmakers and regulators would need to modernize and simplify the regulatory environment in which the country's second-pillar pension funds operate; and 3) pension institutions and regulators would both need to work towards accelerating the ongoing consolidation of pension funds in the country. In this context, our paper explores seven actions that would ideally be pursued in parallel, requiring a coordinated effort by all stakeholders.

Action 1 – shift investments toward more cost-efficient implementation styles while gradually increasing risk

If Switzerland's second-pillar pension system is to raise its investment performance to the levels achieved by leading systems around the world, our analysis suggests that especially smaller funds should avoid inefficient and potentially more risky investment vehicles, particularly in the alternative assets space. Second-pillar funds would also benefit from moving a greater share of their assets in-house. In areas where external management remains sensible, pension funds should push for lower external management fees, increased transparency, and better alignment of interests between asset owners and asset managers. At the same time, they should consider gradually increasing their exposure to riskier assets to strengthen investment returns and ideally improve portfolio diversification.

Action 2 – upgrade in-house investment and risk management capabilities

In order to take additional investment risks, Swiss second-pillar pension funds would benefit from strengthening their in-house investment management capabilities, from asset-liability matching and strategic asset allocation to portfolio management and implementation. As the global investment environment becomes ever more complex and competition for the best investment opportunities intensifies, Swiss pension funds need to invest in continually growing, improving, and professionalizing their in-house teams in order to remain competitive.

Action 3 – strengthen investment governance

Many Swiss pension funds and their sponsors would benefit from clarifying their funds' overarching strategic objectives and introducing clear management goals for all decision-making bodies along with periodic performance reviews that track those goals. Additionally, it is important that all pension fund representatives—including trustees, managers, and administrators—have the skills and experience necessary to effectively perform their duties, and receive regular training.

Action 4 – increase decision-making accountability by eliminating outdated investment limits

If Swiss lawmakers want to encourage second-pillar pension funds to further strengthen their investment management practices, they should consider eliminating rules set out in the existing Ordinance on Occupational Retirement, Survivors', and Disability Pension Plans (BVV2 directive) that place specific investment limits on various investment types and asset classes, while emphasizing the principles-based elements of the existing regulation—namely, the "prudent investor rule" provisions. In its current form, the BVV2 directive is unnecessarily complicated and can give pension trustees a false sense of security by leading them to believe that their pension assets are well managed if the allocations stay within the legal limits. As such, the current rules risk weakening the incentive for pension trustees and managers to make their own informed decisions about their fund's investment strategies.

Action 5 – increase performance transparency

To raise trustees' accountability for their funds' management decisions, the Swiss government should explore taking steps to introduce greater performance transparency across all second-pillar pension institutions operating in the country. Regulators could impose a clearly defined set of reliable performance (and risk) indicators, ensure that all pension institutions report them based on consistent methodologies and assumptions, and make these indicators available to the public in an easily accessible form. This would enable all stakeholders to make more informed decisions about the country's pension funds and ultimately strengthen competition.

Action 6 – reduce political interference in defining actuarial parameters and assumptions

Assumptions or parameters set by the government need to reflect the actuarial reality of Switzerland's second-pillar pension system, not outdated or politically driven aspirations. The system would therefore benefit from Swiss lawmakers bringing the minimum conversion rate for the mandatory part of the country's second-pillar pension system more closely in line with actuarially sustainable levels. Our research suggests that a one-time reduction in the conversion rate is unlikely to be enough, however. Instead, Swiss legislators should consider introducing a new approach for setting the minimum conversion rate to keep the country's pension system in line with evolving demographic and financial trends. A pragmatic solution in this context could be for the government to set the conversion rate each year based on the recommendation of the federal commission for occupational pensions.

Action 7 – encourage fund consolidation or pooling of selected activities

The health of Switzerland's second-pillar pension system would improve if more of the country's pension assets were managed by fewer, larger institutions. That does not mean small funds should be forced to merge with others, but it would be in the interest of many beneficiaries if their pension funds were to proactively pursue consolidation opportunities or pool at least some of their investment activities with other like-minded institutions. The Swiss government could encourage such moves by putting greater public scrutiny on fund costs or

investment returns. Furthermore local and cantonal governments could consider pooling some or all their pension funds' investment activities, thus setting a precedent for other second-pillar pension funds in the country.

☐ ☐ ☐

The Swiss pension system needs substantial reform and raising the investment performance of second-pillar funds should be a key part of any proposal package put forward for debate. The potential actions we explore in this paper will not be easy or quick to implement, but they could make a real significant difference in securing the well-being of Switzerland's current and future retirees. The pension system's current strengths are worth preserving. We should start working to do so today.

Making up lost ground

Chapter 1: Switzerland's pension system is strong but reform is increasingly urgent

Structural and demographic shifts are eroding the health of pension systems around the globe

Throughout the developed world, pension systems are under pressure. Declining birth rates and rising life expectancies have led to marked increases in dependency ratios (the ratios between retirees and active workers contributing to pensions) in most countries within the OECD.

As fewer working adults need to generate the economic growth to finance the pensions of an expanding group of retirees, so-called pay-as-you-go pension systems face the biggest challenges—but funded pension systems are not immune to the pressure either. An increasing life expectancy also means that people spend more time in retirement than many actuarial models had originally foreseen and therefore will need larger pension savings to sustain the standard of living to which they aspire.

Further complicating the issue is the fact that interest rates in many advanced economies are close to zero or even negative. As a result, pension funds struggle to earn the investment returns required to fulfill their long-term pension obligations without taking undue risks. In many countries, the challenge is exacerbated by regulations that force pension funds to invest significant portions of their assets in relatively low-risk fixed income investments. Such rules either lock in low returns for the overall portfolio or require pension managers to take significant risks in other asset classes to meet the return expectations.

In response to these challenges, pension funds have started to reduce benefit levels, raise active members' required contribution rates, or both. At the same time, many governments have introduced structural reforms to their pension systems, such as raising the retirement age, increasing tax incentives for individual retirement saving plans, or shifting from defined-benefit to defined-contribution schemes.

To date, Switzerland's relatively robust economic performance since the financial crisis has cushioned the impact of these trends on its pension system. The country has enjoyed stronger macroeconomic fundamentals and slightly more favorable demographics than many European countries. Between 2008 and 2018[4], real GDP growth was 1.6 percent a year—significantly higher than in Germany (1.3 percent annually), France (0.9 percent), Italy (-0.4 percent), and Austria (1.1 percent)[5]. Unemployment also remained considerably below the rates in neighboring countries, reaching roughly half the European Union average.[6] Additionally, Switzerland's effective male retirement age of 65 is higher than the 2018 OECD average of 64.2,[7] and its dependency ratio (30.5 percent), while slightly exceeding the 2018 OECD average of 29.6 percent,[8] is still lower than in most western European countries.

However, these favorable conditions have been somewhat offset by the steep decline in Swiss 10-year government bond returns. Between the first quarter of 2008 and the third quarter of 2019, these returns fell by 3.79 percentage points to -0.78 percent[9]. While many other OECD countries experienced similar (or even more pronounced) declines over the same period, Swiss government bond returns are currently lower than in any other OECD country, and have remained there almost continuously for over four years.[10]

In response to this plunge, Swiss pension funds have been forced to substantially reduce technical interest rates: from 3.54 percent in 2008 to 1.92 percent in 2018 for private pension funds, and from 3.65 percent to 2.19 percent for public pension funds (Exhibit 1).[11] Average conversion rates (at which accrued pension savings are translated into annuities at retirement) have fallen in tandem, from 6.79 per-

cent in 2008 to 5.87 percent in 2018—in effect reducing pension payments to new retirees by almost 15 percent over the 11 years in question.[12]

To partially compensate for this drop, more than 60 percent of Swiss pension funds increased their savings targets, using mechanisms such as higher contributions from employees and employers and one-time top-ups from reserves.[13] Nevertheless, combined replacement rates from Switzerland's first- and second-pillar pensions have declined from 79 percent in 2008 to 69 percent in 2018,[14] and are widely expected to drop further, barring substantive action (Exhibit 2). (For details on Switzerland's three-pillar pension system, see Box 1.)

An unsustainably high minimum conversion rate for the mandatory portion of the second-pillar pension system, which has remained at 6.8 percent since 2014[15], has exacerbated the situation,

Pension funds around the globe have started to reduce benefit levels, raise active members' required contribution rates, or both.

Exhibit 1

Technical interest rates of Swiss second-pillar pension funds since 2007

Average technical interest rates of defined contribution plans ("Beitragsprimat"), percent
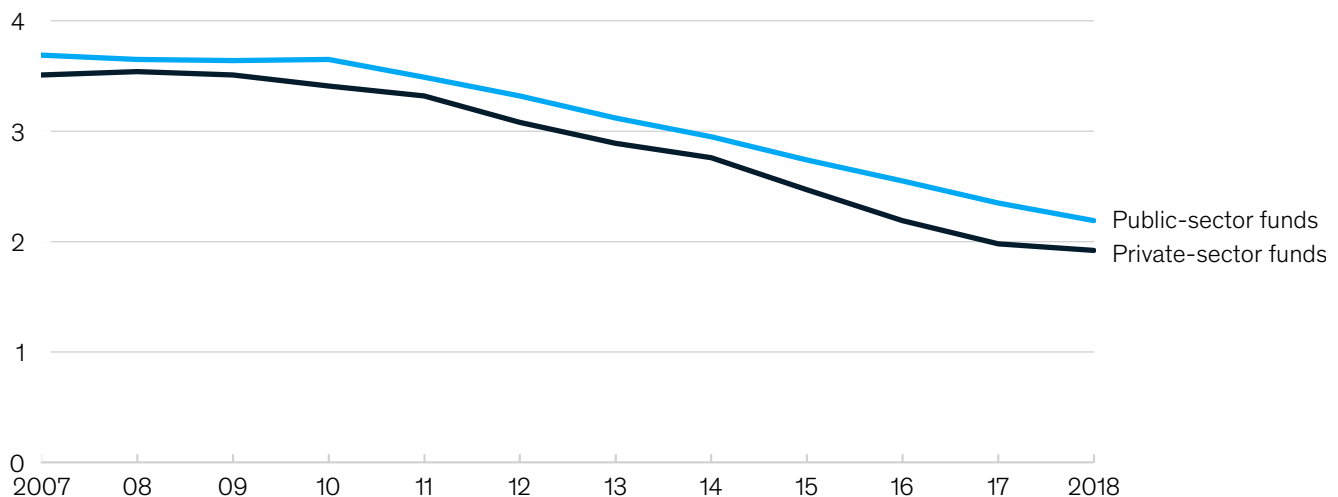
Source: Swisscanto Vorsorge AG

Exhibit 2

Swiss replacement rates/payments for an annual income of CHF 80,000

Replacement rate for first and second
pillar for salary of CHF 80,000

Replacement second pillar (median)

Replacement AHV

CHF

	2008	09	10	11	12	13	14	15	16	17	2018
	79	79	80	80	80	80	78	74	73	71	69
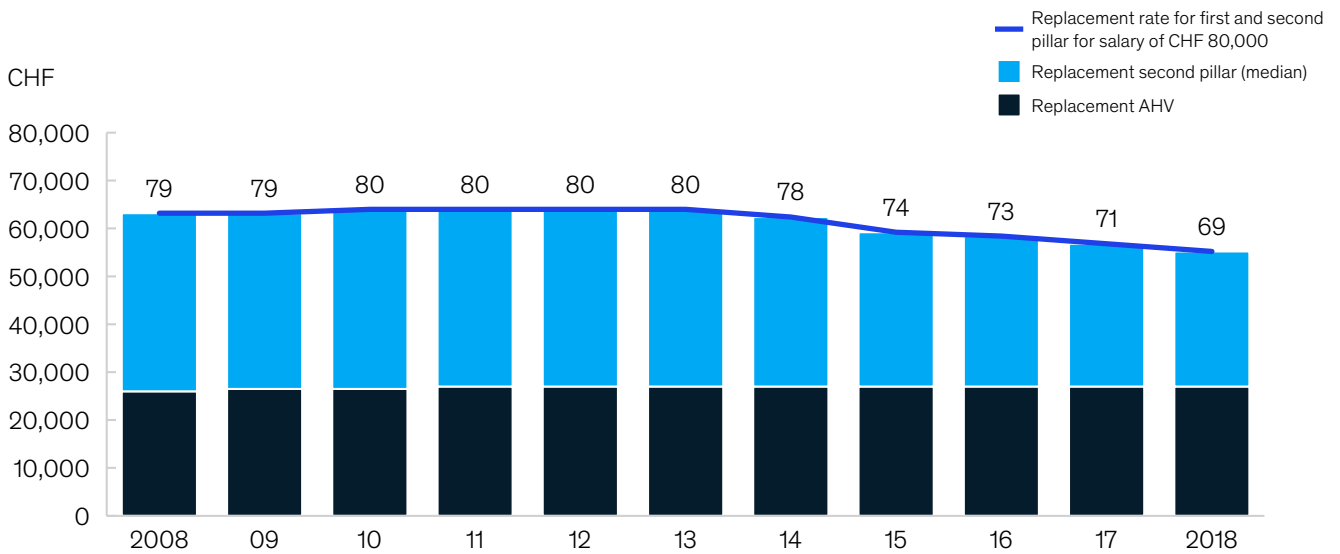
Note: The median replacement for the second pillar was calculated using real interest rates until 2014. As of 2015, the golden rule, which assumes that wage growth equals interest rate, was applied

Source: Swisscanto Vorsorge AG – Schweizer Pensionskassenstudie 2019

helping to trigger several unintended redistribution effects. As OAK[16], Switzerland's supervisory authority for the second-pillar pension system, recently estimated, between 2014 and 2018 active members of second-pillar funds contributed roughly CHF 6.7 billion a year to financing current retirees' pensions.[17] That's because pension funds had to use a disproportionate share of their investment income to pay pension liabilities. As a result, pension savings of active members saw lower returns than they would have, had minimum conversion rates better reflected today's actuarial realities.

The high minimum conversion rate in the mandatory part of the pension system furthermore means that pension fund members with higher incomes effectively cross-finance fund members with lower incomes. Since pension funds must maintain the minimum conversion rate of 6.8 percent on the mandatory portion of their pension liabilities, they often lower conversion rates on the remainder (that is, the voluntary component) in order to maintain acceptable overall funding levels. As a result, pension fund members with higher incomes (who typically have both mandatory and voluntary pension savings) experience lower aggregate conversion rates than members with lower incomes (who typically only have mandatory savings in the second-pillar).

Box 1:
Switzerland's three-pillar pension system

The Swiss pension system consists of three distinct pillars: old age and survivor's insurance (Alters- und Hinterlassenenversicherung [AHV] in German; Assurance Vieilleisse, Survivants [AVS] in French), occupational pensions (Berufliche Vorsorge in German and Prévoyance Professionelle [PP] in French), and private pensions (Private Altersvorsorge in German, Prévoyance Individuelle in French).

The first pillar provides basic income security and applies to all individuals working or residing in Switzerland. AHV/AVS contributions are mandatory and paid equally by employers and employees[18]. The amount of the contributions is fixed by law (8.7 percent in 2020) and the maximum insured annual wage is capped at CHF 85,320. The first pillar operates as a classic pay-as-you-go system. A compensation fund managed by Compenswiss (an independent public institution) ensures payment obligations to beneficiaries can be met despite fluctuations in first-pillar income.

The second-pillar, which functions as a fully funded pension system, is operated by more than 1,500 individual pension funds and, as with the first pillar, is jointly funded by employees and employers. Second-pillar funds can be divided into three types of institutions:

— **Public.** Pension funds operated by the Swiss federal, cantonal, and municipal governments.

— **Private.** Pension funds of individual private-sector employers.

— **Collective pension institutions** (so-called "Sammel- und Gemeinschaftseinrichtungen"). Foundations or cooperatives that pool pension fund assets of multiple employers with the funds typically managed by insurance companies, banks, and other financial services providers.

Second-pillar pension funds provide old-age, disability, and death benefits over and above the AHV/AVS. Since 1985, contributions have been mandatory for all employees who receive an annual salary of at least CHF 21,330 from the same employer, and voluntary for the self-employed. While disability and death benefits are covered from the first day of contributions, the old-age savings component currently begins at age 25. At retirement, individuals can receive their accumulated pension savings either as lump sums or converted into annual pension payments guaranteed until death.

The law on occupational retirement, survivors', and disability pension plans stipulates compulsory, and gradually increasing, minimum contribution levels based on four age brackets. These minimum contributions top out at the annual wage of CHF 85,320, the same as for AHV/AVS. In addition to the obligatory payments, employers and employees can make so called "extra mandatory" (i.e., voluntary) contributions by, for example, increasing the percentage of a worker's salary that goes toward the pension. Any second-pillar pension contributions on salaries higher than CHF 85,320 are also considered voluntary. Employees' pension assets are transferred between different pension funds in case of an employer change. In 2018, 90 percent of Swiss employees had voluntary second-pillar savings, which amounted to roughly 60 percent of all second-pillar assets.[19]

Second-pillar pension funds are largely free to establish the actuarial parameters that define the accumulation rate of pension savings and their conversion into annual pension payments at retirement. These are set in line with internal forecasts and models as well as the funds' achieved investment performance. However, the minimum interest rate and minimum conversion rate for the mandatory portions of second-pillar pension funds are stipulated by law and hence binding on all funds.

The third pillar applies to individuals' own retirement provisions and contributions are not mandatory. For those covered by an occupational pension, an annual amount (CHF 6,826 in 2019) is tax-exempt. For others, a tax benefit applies to a maximum of 20 percent of the annual net income up to CHF 34,128. The tax-exempt amounts (also referred to as pillar 3a) must be paid into a designated pension account and can be withdrawn before retirement only in specific circumstances, such as to finance the purchase of an owner-occupied residence. In addition to the tax-exempt amounts, individuals can make unrestricted additional contributions to the third pillar.

Switzerland has one of the best-capitalized pension systems in the world

Despite the challenges it faces, the Swiss pension system remains better positioned for the future than pension systems in many other developed nations. For one, Switzerland boasts one of the best-capitalized pension systems among OECD countries. In 2018, it ranked fifth in total pension assets relative to GDP—behind Denmark, the Netherlands, Iceland, and Canada—and first in pension assets per capita (Exhibit 3).[20]

Between 2008[21] and 2018, Swiss pension assets averaged 3-percent annual growth despite experiencing an 11-percent decline in 2008 as a result of the financial crisis.[22] This increase was roughly double Switzerland's GDP growth and more than three times the average nominal wage growth (at 0.9 percent per year) over the same period.[23]

The growth in second-pillar pension assets was primarily driven by the combined employer and employee contributions, which accounted for 68 percent of the total increase.[24] Pension funds' investment performance, the third major contributor, played a smaller role than it did in the years prior to the financial crisis—due in part to investment losses in 2008, 2011, and 2018—but still accounted for 32 percent of pensions' total asset growth (Exhibit 4).

Thanks to this steady rise in pension assets over the past decade, average funding levels of Swiss second-pillar pension funds have largely recovered from their 2008 lows, with 2017 amounts approaching pre-crisis levels. Private-sector funds achieved an average funding ratio of 114.4 percent while public-sector funds reached a 97.5-percent funding ratio. In 2018, however, average funding levels for both private- and public-sector funds declined again slightly due to the challenging stock and bond market conditions in the fourth quarter (Exhibit 5).

Exhibit 3

Pension assets of selected OECD countries, 2018

In relation to GDP, percent

On per capita basis, USD '000s

In relation to GDP, percent		On per capita basis, USD '000s	
Denmark	199	Switzerland	117
Netherlands	173	Denmark	117
Iceland	161	Iceland	110
Canada	155	Netherlands	89
Switzerland	142	United States	84
Australia	141	Australia	77
US	134	Canada	68
UK	104	United Kingdom	42
Belgium	11	Belgium	5
France	10	France	4
Italy	10	Italy	3
Germany	7	Germany	3
OECD Ø[1]	126		33
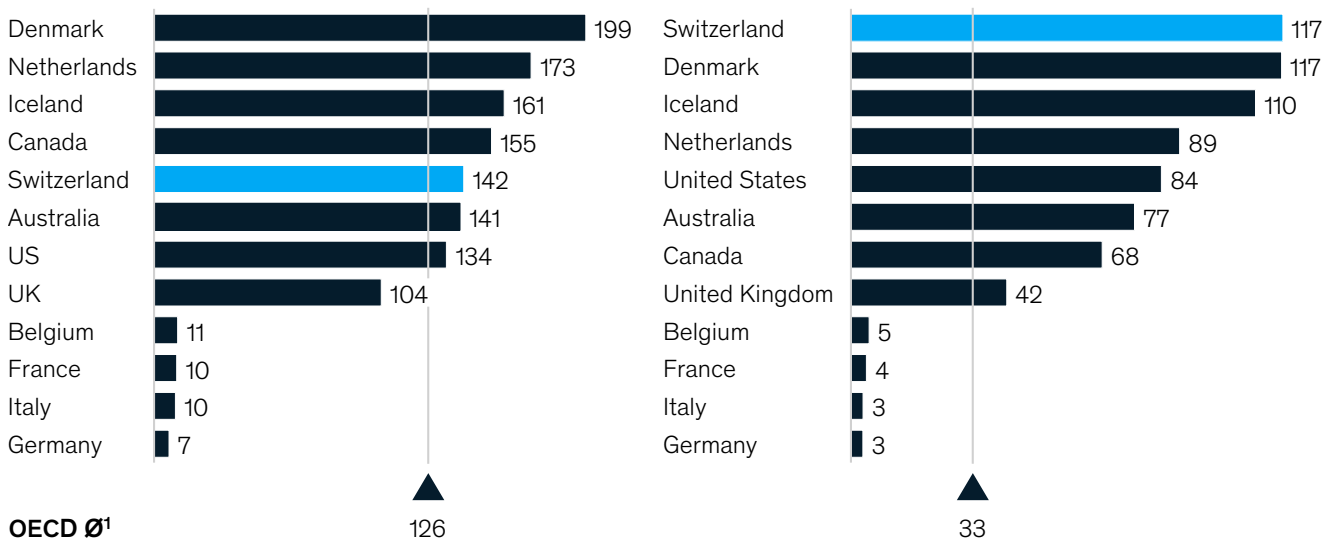
1. Weighted average across all OECD countries

Note: Based on total assets in funded and private pension schemes; includes second and third (3a) pillar in Switzerland

Source: OECD Pension Markets in Focus 2019 (total assets in funded and private pension arrangements); the World Bank Group; McKinsey

Exhibit 4

Growth in Swiss second-pillar pension assets, 2008-18

CHF billions

	Cumulated contributions, 2008-18	
	Investment performance	**32%**
	Regular employer contributions	**40%**
	Regular employee contributions	**28%**

■ Investment performance ■ Regular employer contributions ■ Regular employee contributions ■ Asset stock[1]
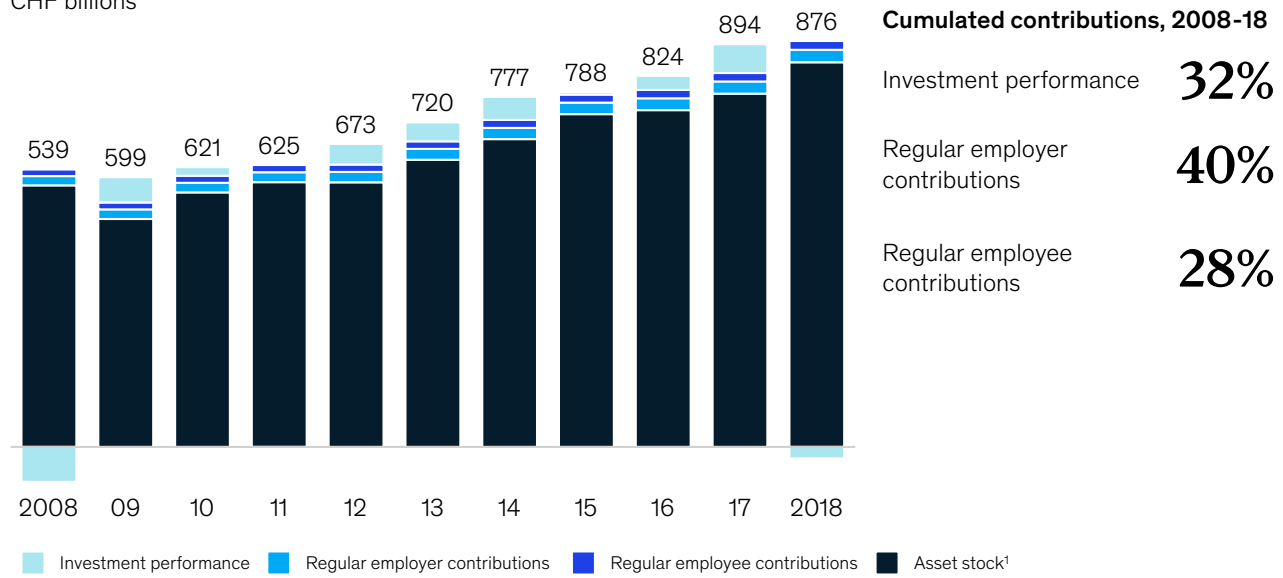
1. Also includes irregular contributions such as one-off payments, payment of arrears, entry payments, etc.

Source: Swiss Federal Office for Statistics Pensionskassenstatistik

Exhibit 5

Funding levels of second-pillar pension funds

Asset-weighted funding levels, percent

Private-sector funds

Public-sector funds
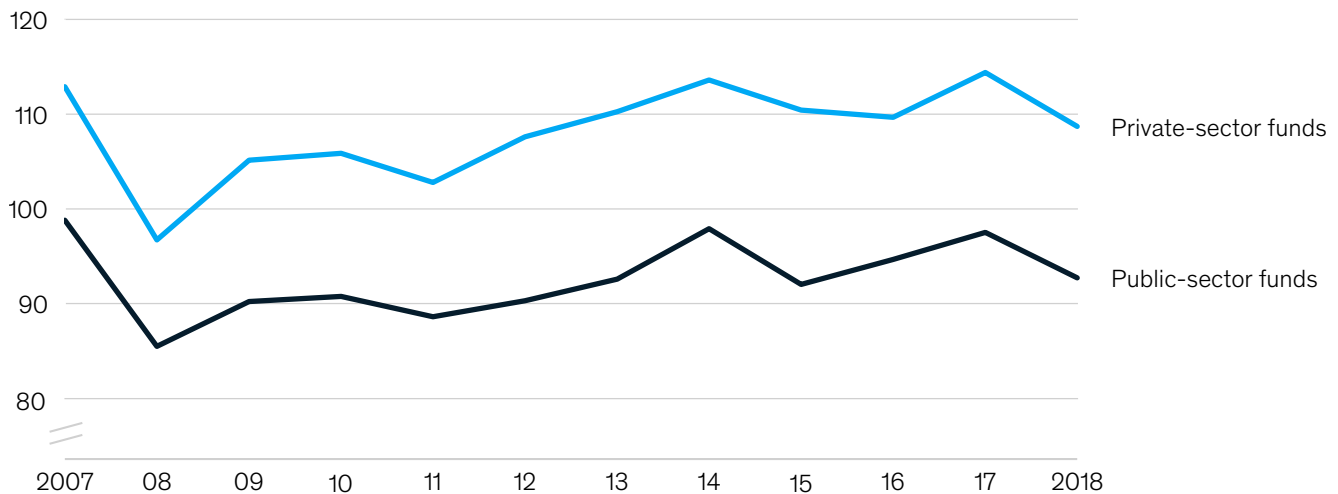
Source: Swisscanto Vorsorge AG

Nevertheless, the funding position of Swiss second-pillar pension funds remained sufficiently strong for Switzerland to move up one spot in the Melbourne Mercer Global Pension Index (MMGPI) Sustainability Ranking in the 2019 edition of its annual report. The MMGPI recognized Switzerland as the fourth most-sustainable pension system in Europe and the sixth most-sustainable in the world[25] (Exhibit 6).

Switzerland also delivers better pension outcomes than most neighboring countries

Sustainability, however, constitutes only one dimension for assessing the strength and effectiveness of a country's pension system. Another important factor is what MMGPI calls the system's "adequacy," meaning its ability to deliver appropriate outcomes to its beneficiaries. While countries aspire to achieve both sustainability and adequacy in their pension

systems, the authors of MMGPI's 2018 report note that "there is a natural tension" between these two dimensions. It is "particularly evident" in the European context,[26] they argue, where many pay-as-you-go systems score high on adequacy and low on sustainability, while many funded systems achieve the opposite results.[27]

At first sight, the latter appears to be true for Switzerland, which scores high on sustainability but slightly below average on adequacy in MMGPI's 2019 report (Exhibit 7). As reasons for the below-average adequacy score, the report cites Switzerland's low (and decreasing) net replacement rate from mandatory pensions, its comparatively low rate of home ownership (42.5 percent, compared to between 51 percent and 72 percent in Austria, France, Germany, and Italy),[28] and its relatively high level of household debt (at 212 percent of net disposable income in 2016)[29], among other factors.

Exhibit 6

MMGPI sustainability ranking, 2019

Sustainability scores of top 15 countries

Change compared to 2018

	Score	Rank	Score
Denmark	82,0	→	+0.2
Netherlands	78,3	→	-0.9
Australia	73,5	→	-0.3
Sweden	72,0	↑	-0.6
Chile	71,7	↓	-1.6
Switzerland	65,4	↑	-2.1
United States of America	62,9	↑	+5.5
Canada	61,8	↑	+5.8
New Zealand	61,5	↓	-1.9
Finland	60,7	↓	-0.3
Malaysia	60,5	↓	± 0
Singapore	59,7	↓	-9.8
Mexico	57,1	↓	±0
Norway	56,8	↓	-0.3
Philippines	55,5	n/a	n/a

Source: Melbourne Mercer Global Pension Index 2019

Exhibit 7

MMGPI adequacy and sustainability scores, 2019

Adequacy
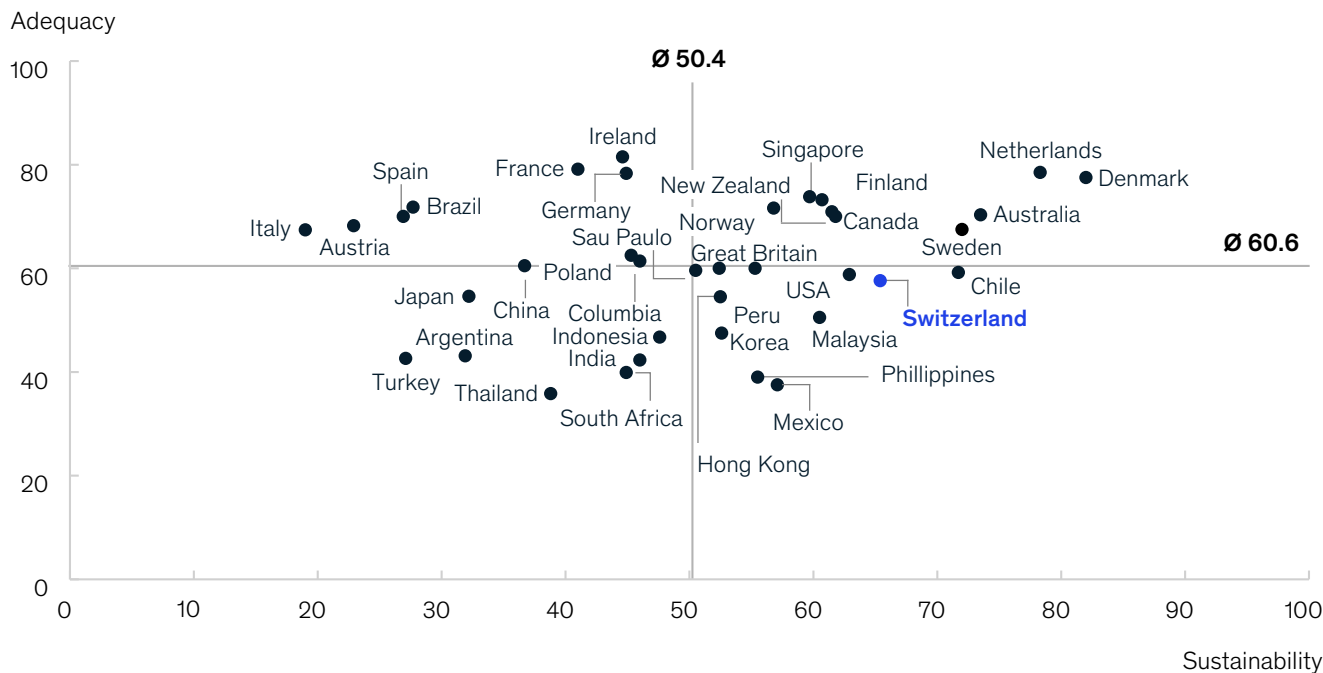
Source: Melbourne Mercer Global Pension Index 2019

In its 2017 publication, Pensions at a Glance: How does Switzerland compare? the OECD offered a broadly similar assessment. Aside from noting the comparatively low replacement rates from mandatory pension schemes, it highlighted relatively low income levels of people aged 65 and above compared to the rest of the population, and Swiss retirees' higher likelihood of suffering income poverty (defined as having a disposable income equal to less than half that of the median household) than their counterparts in other OECD countries.[30]

However, these observations do not capture the full picture of the Swiss pension system's effectiveness. First, comparisons of replacement rates that include only the mandatory portion of second-pillar pensions ignore the reality that almost 90 percent of Swiss employees will also receive pension income from the voluntary part of the system; in fact, these voluntary pension savings account for 60 percent of total pension assets.[31] Second, the comparisons also do not take household wealth into consideration. Wealth can substitute for income, especially when it is held in liquid assets or comes in the form of pension savings that can be withdrawn in lump sums at retirement, as is the case in Switzerland. In fact, Switzerland ranks fourth among OECD countries in average net wealth per house-

hold, with the Swiss average of USD 501,040 being more than 1.2 times the OECD average.[32]

Additionally, it should be noted that most concerns around Switzerland's adequacy score take a relative view of Swiss retirees' well-being by comparing their income to either the country's average (or median) wage or the last salary that they earned before retirement. This perspective is valuable because it measures how Swiss retirees fare compared to other population groups or their earlier lives. However, it puts a higher bar on Switzerland than other OECD countries given that the 2018 average Swiss wage, at USD 64,109, was more than 35 percent higher than the OECD average.[33] Taking all of this into consideration, the OECD's 2019 Economic Survey on Switzerland therefore rightly concludes that the country's "pension system currently provides adequate incomes in retirement"[34] and that "prospects for elderly Swiss are comparatively bright thanks to relatively high incomes and low disability rates in old age."[35]

Not surprisingly, the Swiss Pension Fund Association (ASIP), in its 2018 report on the state of the funded pension system,[36] comes to similar conclusions. Specifically, ASIP highlights Swiss retirees' relatively high disposable incomes in terms of purchas-

ing power parity—9 percent above their French counterparts, 19 percent higher than German retirees, and a whopping 37 percent higher than Italians. It also points to a smaller proportion of Swiss retirees being unable to satisfy their basic material needs than those in neighboring countries. Additionally, ASIP notes that two-thirds of all Swiss citizens aged 65 or above live in households that, in a 2016 survey, reported high levels of satisfaction with their financial situations—the highest number for all age groups.[37]

But Switzerland is losing ground to globally leading pension markets

Switzerland's current position of relative strength should not foster a false sense of security that leads to complacency among decision-makers or the Swiss electorate, however. In recent years, Switzerland has found it difficult to implement structural reforms to its three-pillar pension system. Although retirement planning and pension safety frequently top lists of Swiss citizens' worries[38], voters spurned "multiple pension reform proposals in recent years. Most prominently, they rejected the "Altersvorsorge 2020" initiative in September 2017 that, among other things, proposed an increase in the retirement age for women to that of men and a reduction of the current conversion rate.

In the wake of the 2017 defeat of its proposals, the federal government launched another push for reform—this time purposely separating the proposals covering the first-pillar (AHV/AVS) system from a parallel review of the occupational pension system in the second-pillar (BVG/LPP). In August 2019, the federal council ratified the "AHV/AVS 21" reform package aimed at ensuring stable pensions and guaranteed financing of the first pillar until 2030.[39] Reform of the BVG/LPP is currently under debate. But while most stakeholders agree on many of the key ingredients—including a harmonization of retirement ages between men and women, higher pension contributions from employers and employees, and a reduction in the minimum conversion rate used for the mandatory part of the second-pillar system—significant disagreement exists on the ultimate recipe for reform that would guide each measure's relative importance, as well as on the best ways to finance the reforms and ease the transition for current retirees.

In addition, there is good reason to doubt that any of the discussed reform proposals will be enough to sustainably solve the challenges that Switzerland's second-pillar pension system faces. In its 2019 economic survey, the OECD notes that even if the proposed harmonization of retirement ages for men and women at 65 comes into effect,, Swiss retirement "is set to become one of the longest in the OECD as the legal retirement age falls below the [OECD] average and life expectancy keeps rising (by more than three years by 2060)."[40] The OECD therefore recommends further raising the retirement age for both genders to 67 by 2034 and linking it to increases in life expectancy thereafter. It also suggests increasing incentives for employees to postpone their retirement beyond the formal retirement age.

The organization additionally concludes that the minimum conversion rate of 6.8 percent is too high. Its report quotes a 2018 study by Helvetia,[41] which estimates the appropriate conversion rate to be between 4.5 and 5 percent—significantly lower than the 5.8 percent or 6.0 percent that the current BVG/LPP reform proposals suggest. The OECD recommends lowering the conversion rate accordingly and to partially offseting the measure's negative impact on employees' pension savings by introducing higher contributions and increasing the number of years during which contributions are made.[42]

Due to the past failed attempts at reform, Switzerland has been losing ground to others countries that have taken more deliberate steps towards amending their pension systems in recent years. The MMGPI shows the country's overall score gradually declining from 75.3 in 2010 to 66.7 in 2019. The slide is driven by a 15-point deterioration in Switzerland's adequacy score (from 73.1 to 57.6) and a drop of more than six points in its sustainability score (from 71.8 to 65.4), while the country's integrity score remained virtually unchanged.[43] During the same period, most other nations managed to improve their scores on at least one of the two dimensions on which Switzerland declined (Exhibit 8).

Exhibit 8

Changes in MMGPI adequacy and sustainability scores, 2010 vs. 2019

Absolute change in adequacy and sustainability index

Adequacy
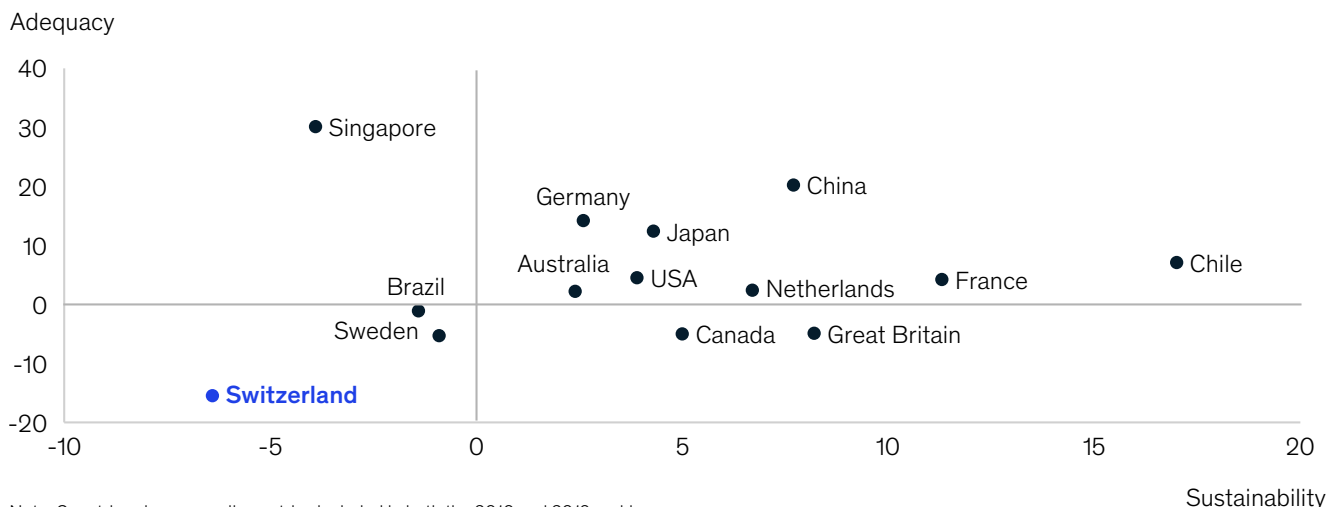
Note: Countries shown are all countries included in both the 2010 and 2019 rankings

Sustainability

Source: Melbourne Mercer Global Pension Index 2010 and 2019

We expect the structural trends that are eroding the health of pension systems around the world to continue and probably accelerate—and Switzerland will feel their impact just like other developed countries. As Switzerland's already high life expectancy increases, the baby boomer generation retires, and fewer young people enter the workforce, the OECD expects Switzerland's dependency ratio to more than double by 2075 from its 2015 level.[44] Net cash flows into Switzerland's second-pillar pensions will turn negative much earlier—by 2043, according to a recent study by Credit Suisse—as outflows that finance pension payments to retirees will outpace inflows from employer and employee contributions.[45]

Growing workplace automation will aggravate the pension system's challenges. Technology is expected to automate job tasks equivalent to a million full-time Swiss employees by 2030. While we expect a similar number of new jobs to emerge in time, the displacement is likely to be difficult during the transition years—particularly for older and less technologically skilled workers.[46] Investment performance is also

unlikely to offer much help in the foreseeable future as equity and bond returns in developed economies are expected to be structurally "lower for longer" due to shifts in the underlying economic and business drivers.[47]

□ □ □

Switzerland has a window of opportunity to reform its pension system while its performance is still robust. However, it has started losing ground to countries that have been more proactive in implementing changes necessitated by unfavorable economic and demographic trends. As retirees' share of the population grows, Swiss pension funds will likely need to increase retirement age, cut benefits for existing pensioners, or place bigger burdens on working adults. The pain of reform will only increase with time, making it critical that policy makers take decisive action now.

Making up lost ground

Chapter 2: Current reform proposals do not address the investment underperformance of second-pillar pension funds

Current reform proposals put insufficient focus on pension funds' investment returns

As we argue in Chapter 1, the Swiss second-pillar pension system needs meaningful reform if it is to retain its strengths for future generations. Any such reform will likely have to address both the benefits and contributions side of the equation—and probably need to be more ambitious than the current proposals. In our view, many of the OECD's recommendations (as articulated in the 2019 economic survey on Switzerland) merit serious consideration.

At the same time, we believe that comprehensive reform of Switzerland's second-pillar pension system would also benefit from addressing pension funds' investment performance. Proposals currently under debate focus on changes to the structure of contributions and benefits but are silent on measures that could boost pension funds' ability to transform today's pension contributions into higher pension benefits tomorrow: namely, their investment management practices. This silence is surprising given the important role that investment returns play in Swiss citizens' pension asset accumulation, accounting for almost one-third of all contributions between 2008 and 2018.

The challenging investment environment of recent years has, however, made it difficult for Swiss pension funds to maintain the level of contributions from investment returns. Despite gradually lowering their average target return from almost 5 percent in 2008 to 3 percent in 2018, the funds on average missed this objective by 1.5 percentage points per annum (Exhibit 9).[48]

As a result, Switzerland ranks in the middle of the OECD pack in terms of achieved real net investment returns: it comes ninth out of 25 member states,[49] with a compound annual growth rate of 2.4 percent between 2008 and 2018. This performance puts the country more than 1.5 percentage points below the best-performing jurisdictions. Canadian pension funds, for example, on average delivered real net investment returns of 4.1 percent p.a., while Danish pension institutions averaged 3.8 percent p.a. and Dutch funds delivered 3.6 percent (Exhibit 10).[50]

Exhibit 9

Investment performance of Swiss second-pillar pension, 2008-18

Delta of actual[1] vs. target[2] investment returns of Swiss second-pillar pensions, percentage points

	2008	09	10	11	12	13	14	15	16	17	2018
Delta	-17,5	5,5	-1,8	-4,9	2,6	2,3	3,4	-2,8	0,2	4,5	-5,8

Ø 2008-18 ◄ -1,5
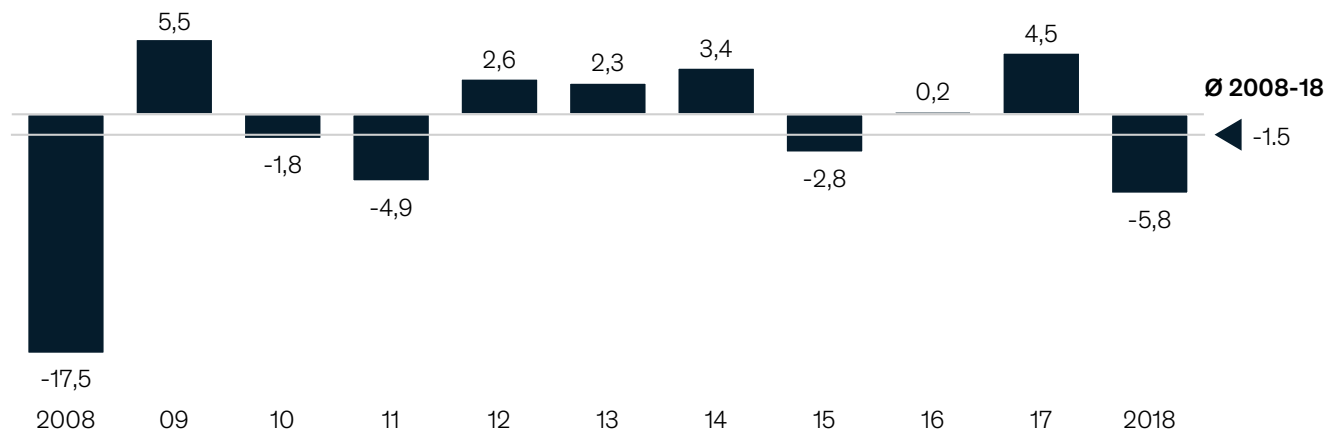
Target return, percent											
	4.9	4.8	4.7	4.6	4.6	4.0	3.9	3.9	3.4	3.1	3.0
Actual return, percent											
	-12.6	10.3	2.9	-0.3	7.2	6.3	7.3	1.1	3.6	7.6	-2.8

1. Not asset weighted
2. Target return based on "Zielrendite", not asset weighted

Source: Swisscanto Vorsorge AG – Schweizer Pensionskassenstudien 2018 und 2019

Exhibit 10

Annual real net investment returns of pension schemes in selected OECD countries, 2008-18

Geometric average, based on local currencies, percent

Country	Return
United Kingdom	5.5[1]
Canada	4,1
Denmark	3,8
Netherlands	3,6
Australia	2,8
Germany	2,5
Switzerland	2,4
Belgium	1,4
Italy	1,3
United States	-0,2
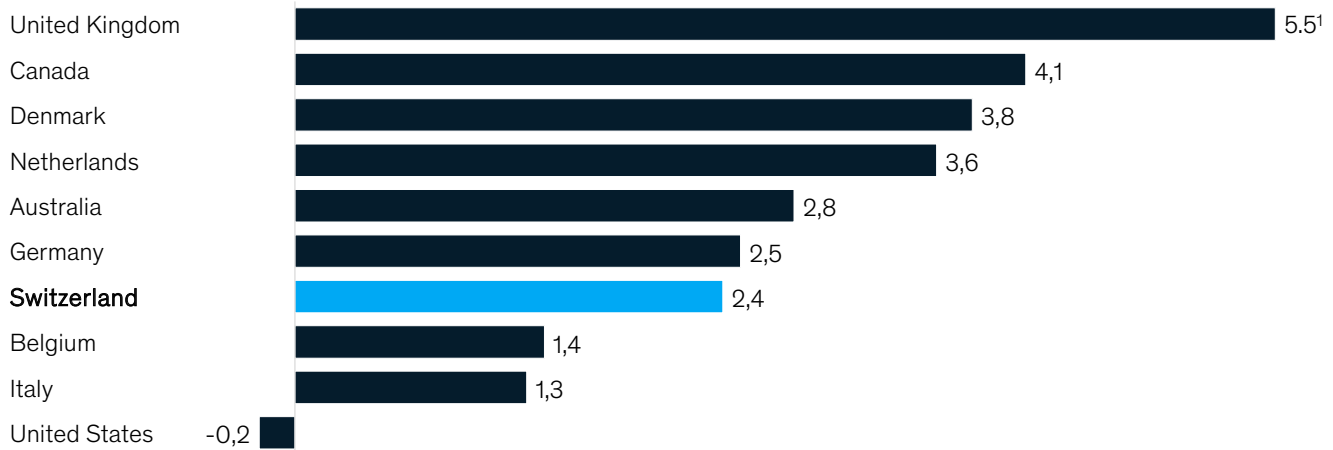
1. CAGR 2008-17 due to missing data for 2018

Note: Data is based on private and fully-funded pension schemes; in Switzerland only occupational schemes (pillar 2) are included. Ranking includes only selected countries

Source: OECD Statistics, "Pension Markets in Focus 2019"

A performance gap of this magnitude raises questions about the effectiveness of Swiss pension funds' investment management practices. This is true even though a comparison of net investment returns ignores several structural differences between pension systems in different countries and hence oversimplifies the reality (see Box 2). To address these limitations, the remainder of this chapter presents a more detailed perspective on the investment performance of different countries'

pension systems. In the following sections, we first introduce our approach to comparing investment performance of second-pillar pension funds, then apply it to Switzerland and two comparison countries: Canada and the Netherlands. All our analyses focus on the period of 2008 to 2018 in order to capture as much of a full market cycle as possible, including the years of the financial crisis and the capital markets' subsequent recovery.

Box 2:
Challenges of comparing investment returns across countries

When comparing performance of national pension systems, it is tempting to simply rely on the OECD's net investment returns data. However, there are important limitations that prevent this metric from fully and fairly reflecting relative performance. After all, pension funds' success at generating returns depends heavily on their ability to take investment risk, which in turn is strongly influenced by the constraints under which they operate in their respective home countries. As such, any comparison of investment returns must account for relevant differences in the design of the countries' pension systems and the implications these differences may have for investment returns.

In our opinion, the three most important factors to consider are:

Overall structure of the pension system.
OECD member states have important differences in the structures and dynamics of their labor markets, as well as in their pension system characteristics. The relative importance of fully funded versus pay-as-you-go pension schemes, for example, varies significantly among OECD countries, as does the role of defined-benefit versus defined-contribution structures among fully funded systems. These differences, along with regulatory and tax treatments of pension investments and many other factors, matter greatly in pension funds' ability to take investment risk and thus earn attractive returns. They should therefore be considered when comparing the performance of different countries' pension systems on an aggregate level.

Demographics. Differences in countries' key demographic characteristics such as birth rates, life expectancy, and dependency ratios naturally all have a major impact on pension systems' ability to generate returns. Pension funds whose active members tend to be older, for example, will have more assets to invest because their members had been contributing over a longer period and hence accumulated larger pension savings. At the same time, these pension funds will have a lower capacity to take risk than funds with younger memberships because their members' relative proximity to retirement requires the funds to invest with a shorter time horizon.

Domestic investment universe and currency regime. Pension funds' ability to generate investment returns is also strongly tied to the breadth and depth of their capital markets and the currency regime in which they operate. Given that pension funds' liabilities are usually denominated in their home currency, they focus on earning investment returns in this home currency. Whenever pension funds invest outside their currency area, they face foreign-exchange risk. They can either accept this risk or hedge it using appropriate financial instruments. However, currency hedging—especially over long timeframes—can be expensive, which in turn may limit the attractiveness of foreign investments compared to alternatives in the local currency. Pension funds that operate in smaller currency regions with narrower (or less developed) capital markets therefore typically have a smaller universe of attractive investment opportunities than is available to peer institutions with more robust markets. As such, they will likely be more constrained in their ability to earn comparable investment returns.

A precise comparison of investment performance between countries requires a custom methodology

To avoid the shortcomings of a simple net investment return comparison across countries with disparate pension systems, we apply our own method of comparing investment performance in this paper. We split the net investment returns as reported by the OECD into two components that can be analyzed separately:

SAA benchmark return. The performance contribution of a pension fund's strategic asset allocation (SAA) is calculated using the relative portfolio weights the SAA assigns to the different asset classes in the fund's portfolio and the returns of generally accepted broad benchmark indices for each asset class. The SAA benchmark return measures the return the fund would have generated had it taken a largely passive investment approach to each of the asset classes in which it invested.

Net value-add. The net value-add is the difference between the fund's achieved net investment return and its SAA benchmark return. It measures a pension fund's ability to outperform its SAA benchmark after accounting for investment management costs and can therefore be viewed as a measure of the pension fund's management skill in a given SAA. The net value-add can be further broken down into gross value-add (that is, the fund's outperformance before investment management costs) and investment management costs.

Our analysis first looks at variations in net value-add across pension systems because this measure is generally accepted as a meaningful performance comparison for institutional investors that operate under different strategic constraints or in different economic or currency regimes. In his 2016 book, The Future of Pensions Management, Keith Ambachtsheer uses this metric to compare the investment performance of Norway's Government Pension Fund Global (GPFG) and Canada's Ontario Teachers' Pension Plan (OTPP), and argues that the approach "removes the effects of differing investment goals, risk tolerances, and currency regimes" because "these differences are largely captured in the two reference portfolios" (or SAA benchmark returns in our taxonomy).[51] Manuel Ammann and Christian Ehmann also use net value-add as one of the performance metrics they analyze in their 2016 paper on the relationship between governance and investment performance of Swiss pension funds.[52]

In a second step, we analyze Swiss funds' SAA benchmark returns and examine to what extent the benchmark returns could have been higher had Swiss second-pillar pension funds mirrored the strategic asset allocations of foreign peer institutions. To avoid re-introducing the distortive impact of differing investment environments and currency regimes that the net value-add comparison is designed to eliminate, we compare the SAA benchmark returns of Swiss second-pillar pension funds with pro forma SAA benchmark returns of their foreign counter-

Any comparison of investment returns across countries must account for relevant differences in the design of their pension systems and the implications these differences may have for investment returns.

parts. These pro forma returns reflect the SAAs of those institutions but use asset class-specific benchmark index returns reflective of Swiss pension funds' investment context rather than those of Dutch and Canadian institutions. In this way, the analysis retains the constraints that Swiss pension funds face while providing a fair estimate of the impact that pursuing a different asset allocation would have had on their performance.

By adding the results of this SAA benchmark return comparison to those of the net value-add comparison, we get the total performance gap between the pension systems under review.

To further improve the relevance of our results, we make the following two additional adjustments:

1. Limit comparison to countries with comparable second-pillar pension systems. We include only Switzerland, Canada, and the Netherlands in our benchmarking analysis—three countries that are broadly comparable in their pension structures and have long-standing and well-funded second-pillar pension systems. All three countries are among the world's 12 highest-ranking pension systems, according to the 2019 MMGPI.[53] They are also in the Top 10 in terms of local currency-based real net investment returns over the period of 2008 to 2018, according to the OECD. We exclude other countries that also delivered strong investment returns over the 2008 to 2018 period (such as the UK, Denmark, Australia, and Germany) because their pension systems are much less comparable to the Swiss one.

2. Control for potential sample biases in the data sources used. The performance comparison approach outlined above necessitates relying on data from well-established, broad-based industry surveys of the three countries rather than official market-level data from local bureaus of statistics or the OECD. The reason is that the latter lack the necessary detail. All the analyses that follow are based on data from Swisscanto's annual pension fund study for Switzerland and the Investment Benchmarking Service from CEM Benchmarking for Canada and the Netherlands (see Technical Appendix for more details on the individual data sources).

Each of the three national surveys covers roughly 70 to 75 percent of second-pillar pension assets in the given country, making it a fair representation of the system's total pension fund holdings. However, a comparison of the surveys' (asset-weighted) average net investment returns with total market averages, as reported by the OECD, shows that all three surveys are slightly skewed toward better-performing institutions (Exhibit 11). This sample bias is more pronounced for Canada and the Netherlands than it is for Switzerland. To avoid overestimating the net value-add gap between Swiss pension funds and their foreign peers, we include a conservative second methodology for estimating the net value-add of pension funds in each of the three countries reviewed. This methodology by design underestimates the actual net value-add gap between Switzerland and the other two countries and hence should counter the impact of any potential survey bias (see Box 3). We call it the "minimum net value-add" calculation in this paper.

Box 3:
Minimum net value-add calculation

As mentioned above, each of the three national pension fund surveys we use for our calculations covers roughly three-quarters of all second-pillar pension assets in its respective country, in principle making it a fair representation of that market. However, the surveys are skewed toward better-performing institutions because all three have higher average net investment returns than their respective market averages (Exhibit 11). The biggest difference in average net investment returns between our sample and the market average applies to Canada, at 68 bps p.a. For the Netherlands, the difference amounts to 42 bps p.a. and to 38 bps for Switzerland.

As a result of the more pronounced sample bias in the Canadian and Dutch surveys than in the Swiss survey, our performance comparison (which builds on the survey numbers) shows a slightly larger performance gap than market averages would suggest. The difference in net investment return between Swiss second-pillar pension funds

and their Canadian counterparts increases from 169 bps p.a. (based on OECD market averages) to 198 bps (according to our samples), and the gap between Swiss and Dutch institutions rises from 123 bps p.a. (OECD average) to 126 bps (our samples).

Given that a higher net investment return is likely to result from both a higher SAA benchmark return (due to more risky asset allocations) and a higher net value-add, it is probable that we slightly overestimate the gap between Swiss funds and their foreign peer institutions in both steps of our performance decomposition. Such a potential overestimation is, however, more worrisome in the net value-add comparison than in the SAA benchmark return comparison. In the latter, a slight overestimation would merely imply that we are comparing the average asset allocation of Swiss second-pillar pension funds to those of Canadian and Dutch pension funds with somewhat more sophisticated asset allo-

Exhibit 11

Survey sample characteristics

	Switzerland Based on Swisscanto	Canada Based on CEM Benchmarking	Netherlands Based on CEM Benchmarking
Market coverage[1] of survey, percent of AuM	~75%	~69%	~72%

Average real net investment return, 2008-18, bps p.a., in local currency

	Switzerland	Canada	Netherlands
Sample	280	478	406
Market average	242	411	365
	+38	+68	+42
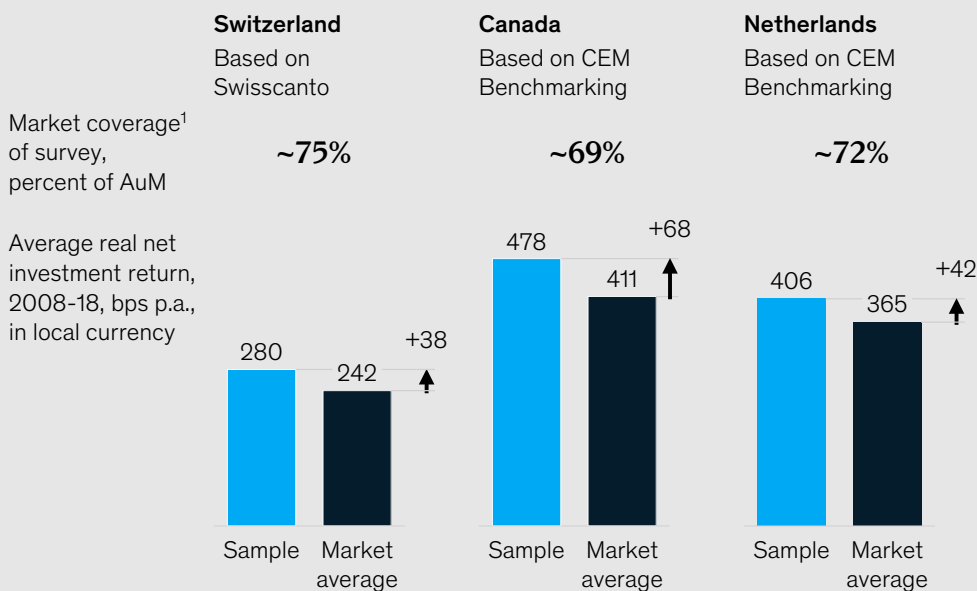
1. Market data source: Swiss Federal Office for Statistics for Switzerland, Dutch National Bank for The Netherlands, Statistics Canada for Canada

Note: Numbers may not add up due to rounding

Source: Swisscanto Vorsorge AG; CEM Benchmarking; Swiss Federal Office for Statistics; Swiss Federal Tax Authority; Statistics Canada; Dutch National Bank; McKinsey

cations than their respective market averages. This slightly raises the bar for the average Swiss pension fund but otherwise does not distort the results.

With the net value-add comparison, on the other hand, we see the need to address a potential overestimation in order to avoid painting too negative a picture of Swiss pension funds' relative ability to outperform their SAA policy benchmarks. We therefore augment the net value-add analysis based on the survey data (as described above) with a second, more conservative estimation. This additional calculation delivers what we call a "minimum net value-add" for each country by measuring the difference between market-average net investment returns (as reported by the OECD) and the SAA benchmark returns from the survey data. The resulting minimum net value-add intentionally underestimates the net value-add that the average pension fund in each of the three countries achieves, and consequently also under-

estimates the corresponding performance gap between Swiss pension funds and their foreign counterparts.[54]

In the rest of this chapter, we calculate both the original net value-add gap between the three survey samples (without any adjustments) and the minimum net value-add gap (that builds on the OECD's data on market-average net investment returns). The two analyses deliver directionally consistent results even if their magnitude differs. The final figures for Swiss second-pillar pension funds' relative performance gap as compared with their Canadian and Dutch peers use the mid-point between the two results. (Exhibit 12 illustrates the mechanics of our approach, relying on purely hypothetical numbers that have no link to our actual investment performance comparison between Swiss, Canadian, and Dutch funds).

Exhibit 12

Net value-add and minimum net value-add calculation – illustrative

bps p.a.
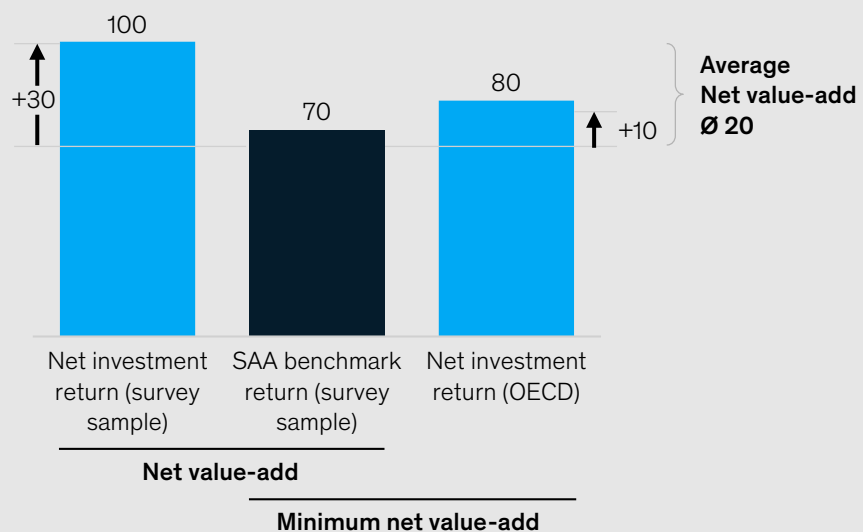
Source: McKinsey

Between 2008 and 2018, Swiss second-pillar pension funds significantly underperformed their Dutch and Canadian peers

Following the performance decomposition approach outlined above, we find that Swiss second-pillar pension funds structurally underperformed their Dutch counterparts by roughly 60 bps p.a. during the 2008 to 2018 timeframe, while their performance gap with Canadian peer institutions was almost twice as big, at approximately 115 bps (Exhibit 13). These numbers are significantly lower than the 123 bps and 169 bps reported by the OECD in its comparison of real annual net investment returns (Exhibit 10). Nevertheless, the performance gap is sizable. Below we explain how we arrive at these results.

The net value-add analysis shows Swiss funds underperformed their Dutch and Canadian peers by roughly 60 to 90 bps p.a., respectively. We first compare Swiss, Canadian, and Dutch second-pillar pension funds' relative ability to generate net value-add, which captures how well they outperform their respective SAA benchmarks after investment costs. For Canada and the Netherlands, CEM Benchmarking readily provides the net investment returns, SAA benchmark returns and net value-add figures. For Switzerland, however, Swisscanto only captures net investment return numbers, requiring us to calculate the SAA benchmark returns and the corresponding net value-add. To do so, we rely on the asset allocation data from the Swisscanto survey and a set of broadly accepted, asset class-specific benchmark index returns for each of the asset classes used. We calculate the Swiss SAA benchmark return employing separate benchmark indices for domestic and international allocations to fixed income, equities, and real estate, covering the full granularity of the asset allocation data that Swisscanto provides. Our choices of benchmark indices for each asset class follow the example of other publications that have performed similar calculations for Swiss pension funds.[55] The resulting compound annual real SAA benchmark return for our sample of Swiss pension funds is 351 bps for the 2008 to 2018 timeframe (Exhibit 14).

The net value-add analysis shows Swiss funds underperformed their Dutch and Canadian peers by roughly 60 to 90 bps p.a., respectively.

Exhibit 13

Total investment performance gap, 2008-18

bps p.a.

	Switzerland vs. Netherlands	Switzerland vs. Canada
Step 1 Δ Net value-add (average)	90	60
Step 2 Δ Pro forma SAA	-30	55
Total performance gap	60	115

Source: McKinsey

Exhibit 14
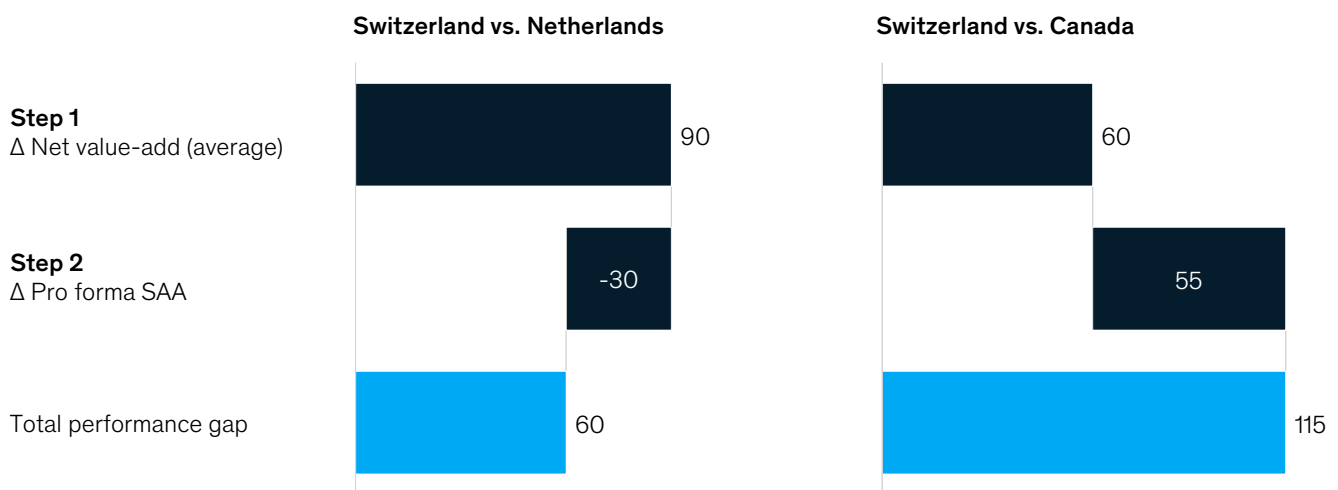
Swiss SAA benchmark return, 2008-18

Asset class	Benchmark index	Index currency	Average benchmark return[1] percent	Average portfolio weight[1,2], percent
Cash and equivalents	IBA CHF LIBOR 3 months	CHF	0.0	5.9
Domestic fixed income	Swiss Bond Index (SBI) AAA-BBB[3]	CHF	2.9	26.8
International fixed income	Bloomberg Barclays Global Aggregate Index[3]	USD	2.7	14.9
Domestic equity	Swiss Performance Index (SPI)	CHF	3.2	10.0
International equity	MSCI AC World ex CH Index	USD	3.8	19.4
Direct domestic real estate	KGAST Immo Index	CHF	5.5	8.4[4]
Indirect domestic real estate	DB Rüd Blass Swiss Real Estate Fund Index	CHF	5.8	8.4[4]
International real estate	MSCI Global Annual Property Index	USD	5.6	1.8
Private equity	Cambridge Associates Global Private Equity Index	CHF	7.9	1.5
Hedge funds	HFRX Global Hedge Funds Index	USD	-1.0	2.6
Infrastructure	EDHEC Infra Global Private Infrastructure Equity Index	USD	10.5	0.3

Compound annual real SAA policy benchmark return[1] 2008-18
351 bps

1. Overall period benchmark return and average portfolio weight of period are shown only for simplification; real annualized policy benchmark return is calculated using the annual asset allocation and return data
2. Calculated based on annual values using the average between 2 year-end values
3. All maturities
4. Assuming 50/50 split of total domestic real estate allocation into direct and indirect

Source: Bloomberg; Thomson Reuters; MSCI; Capital IQ; McKinsey

Comparing each country's SAA benchmark returns against the average net investment returns reported in its respective survey sample, we find that Swiss second-pillar pension funds delivered an average annual net value-add of -71 bps, while Canadian and Dutch pension funds on average achieved an annual net value-add of 6 bps and 19 bps, respectively (Exhibit 15). This translates into a structural net value-add underperformance of 77 bps and 90 bps p.a. for Swiss funds compared to their Canadian and Dutch peers, respectively.

The alternative approach of calculating a minimum net value-add based on market-average net investment returns and SAA benchmark returns from the three surveys causes the annual net value-add figures to decline—and in fact turn negative—for all three countries.[56] Following this methodology, Swiss pension funds delivered a minimum net value-add of -109 bps p.a., while Canadian and Dutch pension funds averaged -61 bps and -22 bps, respectively. The resulting gap between Swiss and Canadian pension funds drops to 48 bps p.a. while the gap between Swiss and Dutch institutions falls to 87 bps.

Taking the mid-point between each set of calculations and rounding the result, we estimate the actual net value-add underperformance of Swiss pension funds to be around 60 bps compared to their Canadian peers and 90 bps compared to their Dutch peers (Exhibit 15). This gap is significant—and implies potential for substantial improvement in performance for Switzerland's second-pillar pension system.

The above results are noteworthy for two other reasons. First, they suggest that the Swiss pension funds in Swisscanto's survey on average underperformed their SAA benchmark after investment costs, while the samples of both Canadian and Dutch pension funds captured by CEM Benchmarking on average outperformed their SAA benchmarks. This means that the average Swiss retiree would have been better off investing in a passive benchmark fund that replicated the average asset allocation of the pension funds in Swisscanto's data set—if such a passive benchmark fund was readily available—than entrusting money to the managers of his or her pension fund.[57]

Second, it is worth pointing out that the gap in net value-add between Swiss second-pillar pension funds and their Canadian and Dutch peers is largely driven by differences in gross value-add—that is, the funds' performance above the SAA benchmark returns before accounting for investment management costs—rather than differences in investment management costs themselves. The gap in gross value-add (based on the average of the two net value-add calculation approaches) was 82 bps p.a. between Swiss and Dutch pension funds and 69 bps between Swiss and Canadian institutions. In terms of investment management costs, Swiss funds outperformed their Canadian peers by 7 bps p.a. (which reduces Switzerland's net value-add gap slightly, to 62 bps) but had 6 bps higher expenses than the Dutch funds (thus slightly increasing the net value-add gap to 88 bps) (Exhibit 16).

In both cases, the difference in investment management expenses accounted for only about 10 percent of the total observed net value-add disparities. This means that the main reason for Switzerland's structural underperformance over the past 11 years lies in Swiss pension funds' lower ability to generate investment returns beyond their strategic asset allocations and not in their cost position in relation to their Canadian and Dutch peers.

Exhibit 15

Net value-add comparison based on two calculation approaches

2008-18, bps p.a.

		Switzerland	Canada	Netherlands	Δ CA vs. CH	Δ NL vs. CH
Survey sample net value-add	Net investment return sample	280	478	406	198	126
	⊖ SAA benchmark return sample	351	472	387	121	36
	⊜ **Sample net value-add**	**-71**	**6**	**19**	**77**	**90**
Minimum net value-add	Net investment return	242	411	365	169	123
	⊖ SAA benchmark return sample	351	472	387	121	36
	⊜ **Minimum net value-add**	**-109**	**-61**	**-22**	**48**	**87**
Average of both approaches	Average net value-add	-90	-28	-2	62	88
	Rounded result				**~60**	**~90**

Source: McKinsey

Exhibit 16

Breakdown of gross value-add, 2008-18

Average of both net value-add calculation approaches, bps p.a.

	Switzerland	Canada	Netherlands	Δ CA vs. CH	Δ NL vs. CH
Gross value-add	-42	27	40	69	82
Investment management costs	-48[1]	-55	-42	-7 (-10%)	6 (7%)
Net value-add	-90	-28	-2	62 (90%)	88 (107%)
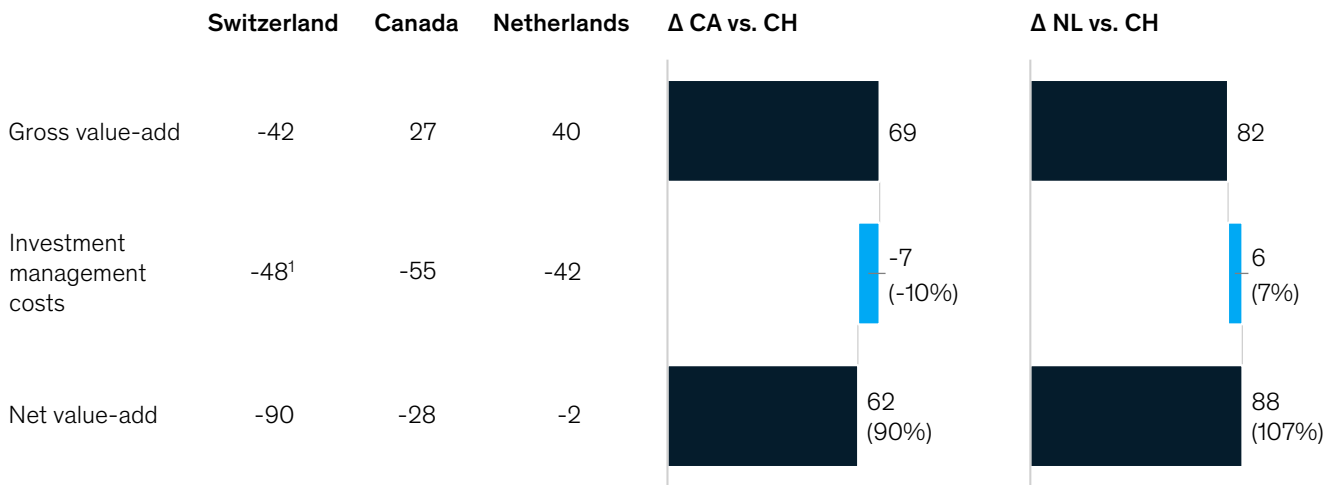
1. Numbers for Switzerland based on 2013-18 numbers as provided by Swisscanto. Data for previous years not available.

Source: McKinsey

Box 4:
A closer look at investment management costs

Exhibit 16 shows that during the period of 2008 to 2018, the average annual investment management costs for Swiss second-pillar pension funds were 48 bps, while the average costs for Canadian and Dutch pension funds were 55 bps and 42 bps, respectively. This translates into a cost advantage of 7 bps for Swiss pension funds in relation to their Canadian peers, while Dutch pension funds had 6 bps lower investment management costs than their Swiss counterparts.

But can we conclude from this that Swiss funds were more cost-efficient than their Canadian peers and Dutch funds were the most cost-efficient of all three countries? It is not that simple. The average cost margins of the three country samples reflect significantly different asset allocations (Exhibit 18). Canadian pension funds on average had significantly higher allocations to public and private equities, infrastructure, and hedge fund assets than the Swiss institutions in our survey. These asset classes are typically more expensive to manage than, for example, cash or fixed income investments, but they usually also deliver significantly higher investment returns.

The Dutch pension funds included in our sample, meanwhile, had significantly higher allocation to public equities than the Swiss funds, but sustantially lower exposures to real estate. Over the 2008 to 2018 timeframe, they made major increases to their fixed income allocations (of more than 5.6 percentage points on average), which brought them well above the allocation levels of Swiss pension funds in 2018. As such, it could be expected that investment management costs would be lower for Dutch funds than for Swiss funds.

In order to assess the actual cost efficiency of the average Swiss, Canadian, and Dutch pension funds in our performance comparison, we need to compare the investment management costs on as much of a "like-for-like" basis as possible. We therefore use a pro forma calculation that builds on cost margin data for individual asset classes, which CEM Benchmarking captures as part of its survey for both Canadian and Dutch pension funds. We multiply these asset class-specific cost margins by the asset class weights that the SAA of the average Swiss second-pillar pension fund in the Swisscanto survey prescribes. This gives us an estimate of the (hypothetical) cost margins that the average Dutch or Canadian pension fund would have if it managed the same asset allocation as the average Swiss fund held in 2018.

By comparing the resulting pro forma cost margins for Dutch and Canadian pension funds with the actual cost margins that Swiss funds incurred, we get a more reliable estimate of the three pension systems' relative cost efficiency (Exhibit 17).

We find that the Canadian funds in CEM Benchmarking's sample would would have had average investment costs margins of 41.4 bps p.a. if they managed Swiss funds' average asset allocation, while Dutch funds on average would have had cost margins of 34.7 bps p.a. Both figures are significantly below Swiss pension funds' actual cost margins of 47.7 bps p.a., which means that, at a comparable asset allocation, Swiss funds were the least cost-efficient of the three countries. As we elaborate in Chapter 4, these findings are not surprising given that the average Swiss second-pillar pension fund is significantly smaller than its Canadian and Dutch peers and therefore lacks the same ability to capture economies of scale in its investment activities.

Exhibit 17

Investment management cost comparison

Asset-weighted investment management costs, bps
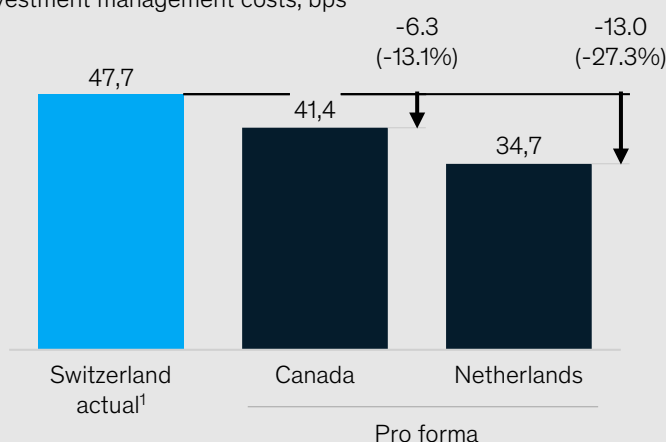
1. Based on 2013-18 average investment management cost margins from Swisscanto's Swiss pension fund survey database. Data for previous years not available.

Note: Canadian/Dutch pension funds' investment management costs per asset class in 2018 were applied to Swiss pension funds' asset allocation in 2018 to derive comparable costs for Canadian and Dutch funds

Source: Swisscanto Vorsorge AG; CEM Benchmarking; McKinsey

Adding the impact of differences in asset allocation increases Switzerland's performance gap with Canada but reduces it with the Netherlands

While the net value-add comparison outlined above constitutes a generally accepted method for evaluating investment skill at institutions operating under different strategic constraints or in different economic or currency regimes, it does not address the impact of differences in strategic asset allocations. To understand how asset-allocation decisions affect the performance of Swiss second-pillar pension funds and their foreign peers, we supplement our net value-add analysis with a secondary performance comparison of pro forma SAA benchmark returns.

This is important because the Swiss, Canadian, and Dutch pension systems exhibit significant differences in asset allocations, both with regard to their respective starting positions at the beginning of 2008 and the subsequent evolution of allocations during the period we explore in this paper (Exhibit 18). At the beginning of 2008,, for example, Swiss second-pillar pension funds had significantly higher portions of their total investment portfolios in cash, fixed income, and real estate assets than their Canadian and Dutch peers. At the same time, their allocations to public equities and alternative assets (including private equity, hedge funds, and infrastructure) were significantly lower than at both Dutch and Canadian institutions.

In subsequent years, Swiss funds gradually reduced their exposures to cash and fixed income assets, as well as to hedge funds, while further increasing allocations to real estate, public and private equi-

Exhibit 18

Asset allocation comparison, 2008-18

Asset allocation per end of year[1], percent

Switzerland

2007[1]: 3,4 | 0 | 1.5 | 15,3 | 28,7 | 44,7 | 6,4
2018: 2,3 | 1.3 | 2.1 | 22,3 | 29,6 | 38,0 | 4.4

Canada

2007[1]: 2.6 | 5.2 | 2.7 | 8,0 | 49,9 | 32,0 | -0.2
2018: 4.7 | 12,2 | 7,4 | 12,3 | 36,4 | 30,8 | -3.8

Netherlands

2007[1]: 3,2 | 3.6 | 0.3 | 6,3 | 45,8 | 38,8 | 2.0
2018: 2,4 | 4.6 | 2.3 | 5,7 | 40,3 | 44,4 | 0.4

Legend:
- Hedge funds
- Private equity
- Infrastructure
- Real estate
- Equities
- Fixed income
- Cash and equivalents
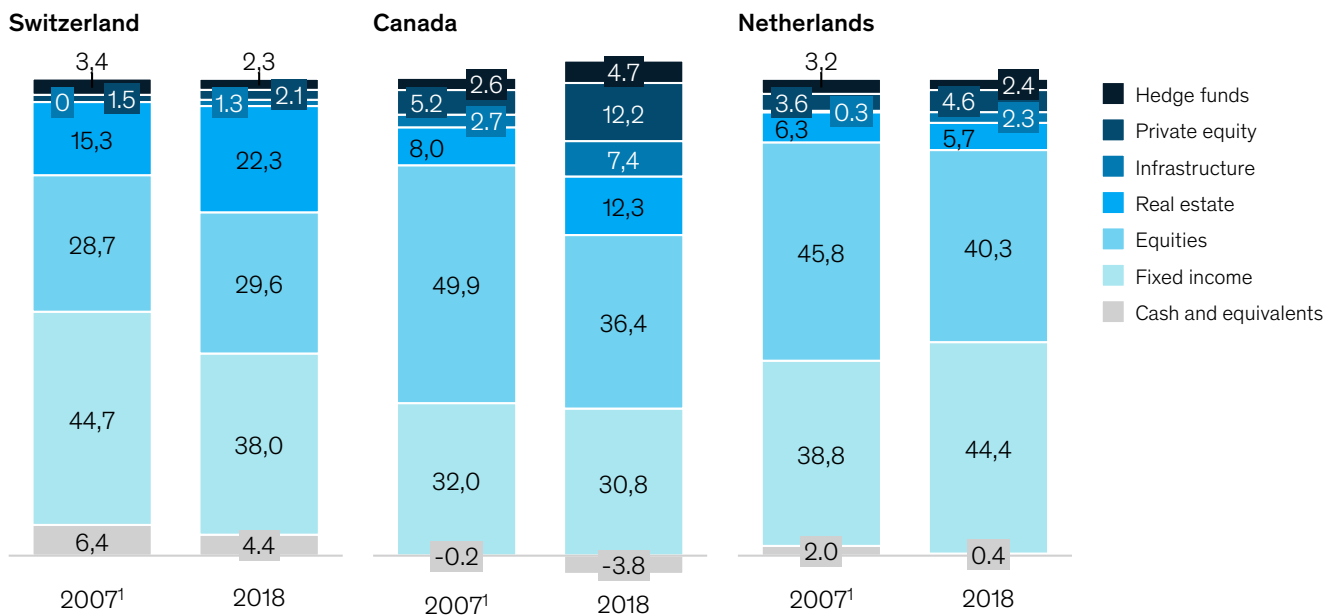
1. End of year 2007 equals beginning of year 2008

Note: Numbers may not add up due to rounding

Source: Swisscanto Vorsorge AG; CEM Benchmarking; McKinsey

ties, and infrastructure assets. While their 2018 real estate allocations ended up being almost double those of Canadian funds and almost four times those of Dutch funds, Swiss funds' shares of investment in public and private equities and infrastructure remained far lower than those of Dutch and Canadian peer institutions.

It is noteworthy that Dutch funds were alone among the three groups in significantly increasing their allocations to fixed-income assets over the 2008 to 2018 period. Canadian funds, meanwhile, on average significantly expanded their exposure to alternative asset classes, resulting in cumulative allocations to private equity, hedge funds, and infrastructure of 24.3 percent in 2018, as opposed to 9.3 percent for Dutch funds and a mere 5.7 percent for Swiss funds. Given that Canadian funds' average allocations to these asset classes stood at only 10.5 percent at the beginning of 2008, this is the most significant shift in allocations observed over the period in question.

To assess the impact of these asset allocation decisions (while avoiding the methodological challenges outlined in Box 2), we compare the SAA benchmark returns of Swiss second-pillar pension funds that we calculate in the previous chapter with pro forma SAA benchmark returns for Canadian and Dutch pension funds, which we calculate in the same fashion. In doing so, we use the two countries' average annual allocations to the different asset classes (as reported by CEM Benchmarking) and the same asset class-specific benchmark index returns that we use for the Swiss pension funds. We also assume the same split between domestic and international investments that Swisscanto reports for Swiss pension funds (see Technical Appendix for further details).

Following this approach, we find that Swiss pension funds had SAA benchmark returns of 351 bps p.a. over the 2008 to 2018 period, while the Canadian and Dutch pro forma SAA benchmark returns amounted to 404 bps and 325 bps, respectively (Exhibit 19). This means that Swiss second-pillar pension funds could have increased their investment performance over the past 11 years by roughly 55 bps per year if they had mirrored the investment strategies of the Canadians—without having to change their overall exposure to foreign-denominated assets.[58] A replication of the Dutch funds' average investment strategy within the constraints a CHF-based investor would face, on the other hand, would have reduced Swiss funds' annual performance by almost 30 bps.[59,60]

Exhibit 19

(Pro forma) SAA benchmark returns of Swiss, Canadian and Dutch pension funds, 2008-2018

Percent

Asset class	Benchmark index	Average benchmark return[1] (based on CHF)	Asset allocation – average portfolio weight[1,2]		
			Actual Switzerland	Pro forma Canada[3]	Pro forma Netherlands[3]
Cash and equivalents	IBA CHF LIBOR 3 months	0.0	5.9	-1.4	1.8
Domestic fixed income	Swiss Bond Index (SBI) AAA-BBB[4]	2.9	26.8	19.8	29.7
International fixed income	Bloomberg Barclays Global Aggregate Index[4]	1.1	14.9	12.8	14.0
Domestic (CH) equity	Swiss Performance Index (SPI)	3.2	10.0	23.9	21.0
International equity	MSCI AC World ex CH Index	2.2	19.4	16.7	18.1
Direct domestic real estate	KGAST Immo Index	5.5	8.4[5]	4.6[5]	2.0[5]
Indirect domestic real estate	DB Rüd Blass Swiss Real Estate Fund Index	5.8	8.4[5]	4.6[5]	2.0[5]
International real estate	MSCI Global Annual Property Index	4.0	1.8	1.5	1.7
Private equity	Cambridge Associates Global Private Equity Index	7.9	1.5	9.4	4.6
Hedge funds	HFRX Global Hedge Funds Index	-2.5	2.6	2.8	3.8
Infrastructure	EDHECInfra Global Private Infrastructure Equity Index	8.8	0.3	5.2	1.5
Resulting compound annual real SAA policy benchmark return 2008-2018, bps			**351**	**404**	**325**
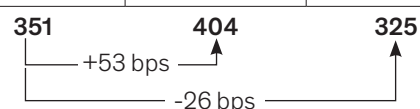
+53 bps

-26 bps

1. Overall period benchmark return and average portfolio weight of period are shown only for simplification; real annualized policy benchmark return is calculated using the annual asset allocation and return data

2. Calculated based on annual values using the average between two year-end values

3. Total exposure to FX-denominated assets (i.e., international bonds, equity, real estate, and infrastructure) in all 3 asset allocations constant (at 39.4%)

4. All maturities

5. Assuming 50/50 split of total domestic real estate allocation into direct and indirect

Source: Swisscanto Vorsorge AG; CEM Benchmarking; Bloomberg; Thomson Reuters; MSCI; Capital IQ; McKinsey

A closer look at the relative SAA benchmark return contributions of individual asset classes shows that Swiss pension funds' overall performance was largely driven by their significant allocations to domestic real estate and international equities, which together drove more than 52 percent of the total benchmark return between 2008 and 2018. Domestic fixed income and equities contributed another 24 percent and 13 percent, respectively, while all the other asset classes together added less than 11 percent. It is noteworthy that all asset classes except hedge funds made a positive contribution

to Swiss pension funds' SAA benchmark returns despite many experiencing significant losses during the financial crisis (Exhibit 20).

Mirroring the Canadian asset allocation would have increased Swiss pension funds' SAA benchmark returns mainly because of a shift out of cash and fixed income and into infrastructure and private and public equity. However, a marked reduction in real estate allocations would have partially offset this positive effect. Mirroring the Dutch asset allocation would have reduced Swiss funds' performance because of a move out of Swiss real estate and into fixed income and equities, which would be offset in a small part by increased exposure to private equity and infrastructure.

In summary, Swiss second-pillar pension funds could have boosted their net investment returns in the 2008 to 2018 period by approximately 55 bps p.a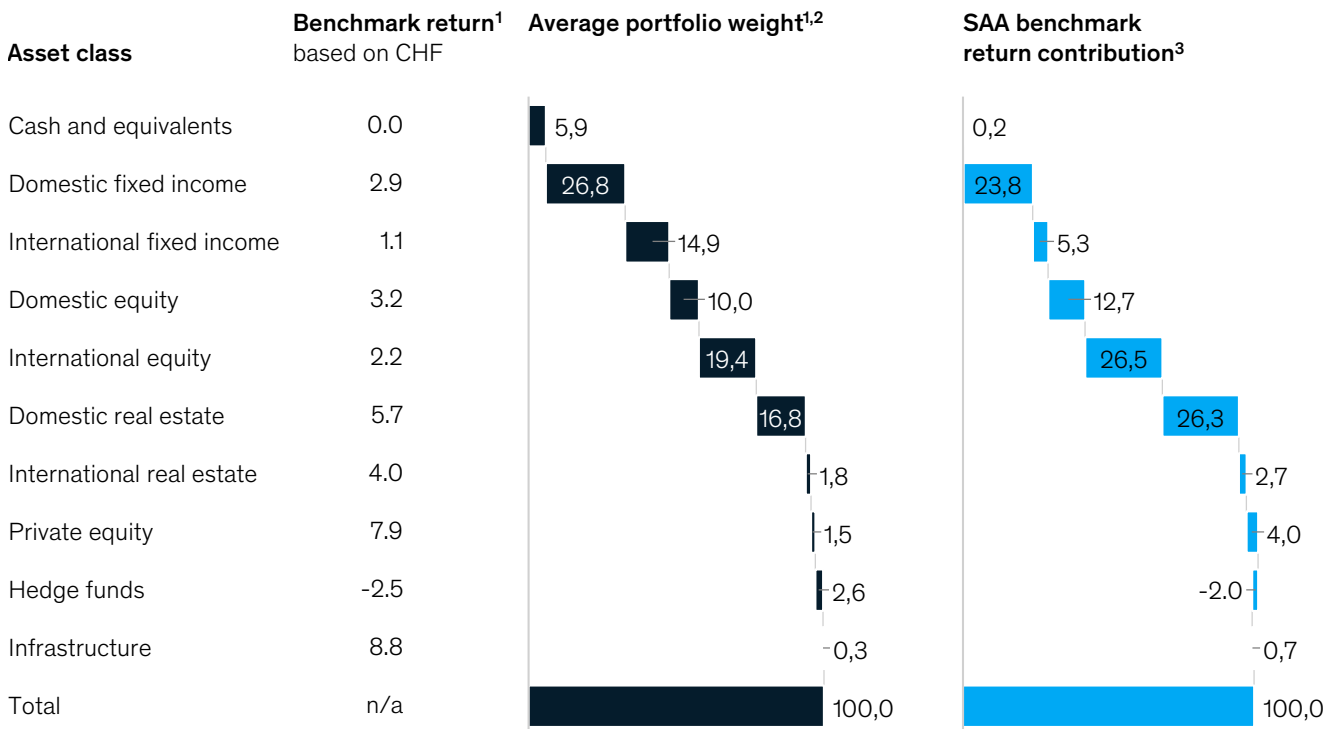. had they adopted an asset allocation similar to that of the average Canadian fund in our sample. This is a smaller performance uplift than the 60 bps we identified in the net value-add analysis (the first step of our performance decomposition) but is nevertheless substantial.

It is important to remember that an asset allocation that yields higher returns typically also comes with higher investment risks. As such, moving to a "Canadian-style" asset allocation would have only made sense for Swiss pension funds with appropriate investment and risk management capabilities in place. We take a closer look at the risk levels of the three countries' strategic asset allocations in Box 5. We also note that our analysis of SAA benchmark returns is backward- rather than forward-looking, and that asset class returns observed during the 2008 to 2018 period should not be seen as predictive of future returns.

Exhibit 20

Asset class contributions to Swiss SAA benchmark return, 2008-18

Percent

Asset class	Benchmark return[1] based on CHF	Average portfolio weight[1,2]	SAA benchmark return contribution[3]
Cash and equivalents	0.0	5,9	0,2
Domestic fixed income	2.9	26,8	23,8
International fixed income	1.1	14,9	5,3
Domestic equity	3.2	10,0	12,7
International equity	2.2	19,4	26,5
Domestic real estate	5.7	16,8	26,3
International real estate	4.0	1,8	2,7
Private equity	7.9	1,5	4,0
Hedge funds	-2.5	2,6	-2.0
Infrastructure	8.8	0,3	0,7
Total	n/a	100,0	100,0

1. Overall period benchmark return and average portfolio weight of period are shown only for simplification; real annualized policy benchmark return is calculated using the annual asset allocation and return data
2. Calculated based on annual values using the average between two year-end values
3. Calculated based on nominal return and then scaled to real return

Source: Swisscanto Vorsorge AG; CEM Benchmarking; Bloomberg; Thomson Reuters; MSCI; Capital IQ; McKinsey

Box 5:
Do higher SAA benchmark returns require greater risk-taking?

Our SAA benchmark return comparison of Swiss, Canadian, and Dutch second-pillar pension funds finds that Swiss funds could have boosted their returns by 55 bps per year had they largely mirrored the Canadian asset allocations within their own investment universe. At the same time, they would have reduced their returns by almost 30 bps per year if they had modeled their SAA on the Dutch funds' allocations.

Yet returns are only one part of the equation. Earning higher investment returns typically requires accepting greater investment risks, which is why professional investors never base their asset allocation decisions solely on a comparison of expected investment returns. Instead, they factor in the investment risks that various asset allocation alternatives entail by looking at risk metrics such as the volatility of expected returns.[61]

To estimate the volatility of the SAA benchmark returns associated with the average asset allocation in each of the three countries between 2008 and 2018, we use the same indices and meth-

odology employed to calculate the Swiss SAA benchmark return and the pro forma SAA returns for Canadian and Dutch pension funds (see the Technical Appendix for a detailed description). We find that, at 10 percent, Canadian pension funds were exposed to the highest SAA benchmark return volatility, followed by Dutch funds with 8.9 percent. Swiss funds experienced the lowest volatility, at 7 percent.[62]

This reflects Canadian and Dutch funds' higher allocations to relatively volatile asset classes—especially equity, private equity, and infrastructure—while Swiss funds had considerably higher stakes in less volatile assets—notably domestic real estate and cash and equivalents—during the period under study. Looking at the risk/return relationship, Swiss pensions funds outperformed Dutch funds on both dimensions as their investments in high-return, low-volatility asset classes paid off over the time period in question, while Canadian funds' investment strategy yielded higher returns but also came with higher volatility (Exhibit 21).

Exhibit 21

Risk/return trade-offs of different asset allocations

Percent

(Pro forma) SAA benchmark return

1. Portfolio volatility (i.e., standard deviation) calculated using Swiss benchmark indices per asset class and average asset allocation 2008-18)

Source: Swisscanto Vorsorge AG; CEM Benchmarking; McKinsey

□ □ □

Effective reform of the Swiss pension system
ideally would also include measures that address
the underperformance of second-pillar pension
funds relative to their globally leading peers. Based
on our analysis of SAA benchmark returns and
net value-add, Swiss pension funds' returns lagged
their Canadian and Dutch counterparts by 60
to 115 bps p.a., respectively, between 2008 and
2018. Most of this performance gap was due to
Swiss funds' lower ability to deliver net value-
add (above and beyond their SAA benchmark
return) rather than differences in risk-taking. In
the next chapter, we explore the tangible benefits
that improving Swiss pension funds' investment
performance could bring—both for Switzerland's
pension system and its individual beneficiaries.

Chapter 3:
Higher investment performance would significantly benefit the Swiss second-pillar pension system

Our analysis in the previous chapter estimates the structural performance gap between Swiss second-pillar pension funds and their Dutch and Canadian counterparts at 60 to 115 bps p.a., respectively. To illustrate the magnitude of that impact, this chapter looks at four "what if" scenarios that assume Swiss pension funds were able to consistently achieve performance in line with the investment returns their Dutch and Canadian peer organizations achieved between 2008 and 2018. The first two scenarios focus on the gains that the Swiss pension system could have captured in that period. The third and fourth scenarios explore the potential benefits to the average Swiss worker if the country's pension funds delivered peer-like performance throughout that individual's whole working life.

It bears stressing that these scenarios are hypothetical in nature—especially the latter two that model pension asset accumulation over the working life of a typical Swiss employee. They assume constant investment performance during the entire period and take as a given that employee and employer contributions follow the legally defined minimum contribution levels by age band. They do not account for potential disruptions, such as changes in employment or periods of unemployment, that might affect a person's pension savings in real life. Our goal is not to accurately forecast employees' potential pension savings but rather to provide a rough indication of the prospective benefits to the Swiss pension system and its beneficiaries that currently remain untapped.

Between 2008 and 2018, Swiss second-pillar pension funds could have generated CHF 50 billion to CHF 95 billion in additional pension assets

The first "what if" scenario is straightforward: it calculates the additional pension assets that Swiss second-pillar pension funds could have generated if they had achieved the same investment returns as institutions in the two peer countries in our study. Our analysis shows that during the 2008 to 2018 period, a 60-bps boost in annual investment performance (which would have put Swiss funds on par with their Dutch peers) would have produced an additional CHF 50 billion in accumulated pension assets. The figure would have been almost double, at CHF 95 billion, had Swiss funds bridged the 115-bps performance gap with their Canadian counterparts. These additional pension gains would have represented 24 percent and 45 percent increases, respectively, in the Swiss funds' cumulative investment income over the 11 years. That, in turn, would have raised total assets in Switzerland's second-pillar pension system by 6 percent to 11 percent at the end of 2018 (Exhibit 22).[63]

Of course, higher investment gains on pension assets could theoretically be applied to different ends. Instead of increasing accumulated pension savings in the second-pillar, Switzerland could have decided to reduce employees' and employers' pension contributions over the same period—thus raising disposable income for the former and lowering personnel costs for the latter. Using a simple pro forma calculation of employee and employer pension contributions and potential investment returns over the 2008 to 2018 timeframe, our second "what if" scenario shows that, with CHF 50 billion to CHF 95 billion in additional investment income, Switzerland theoretically could have reduced the two social partners' combined contributions by 11 percent to 21 percent. These reductions could have been achieved without any cuts to the total pension assets as of 2018 year-end (Exhibit 23). Given that the average combined pension contribution rate for employees and employers stood at 18.7 percent of all insured income in 2017,[64] such a reduction would have lowered the joint contribution rate by 2.1 to 3.9 percentage points, to between 14.8 percent and 16.6 percent.
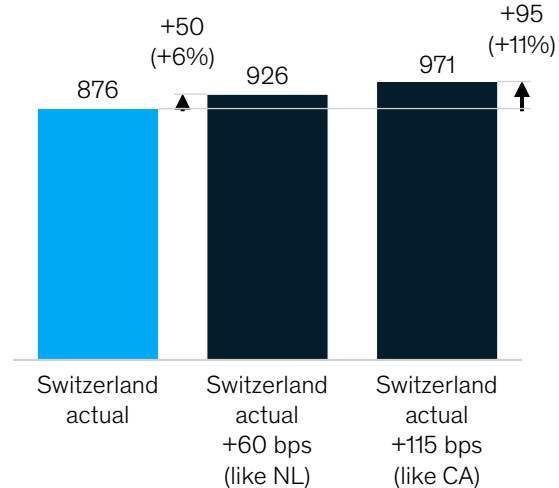
Exhibit 22

"Scenario I: cumulated investment income 2008-18 and year-end pension assets 2018

CHF billions

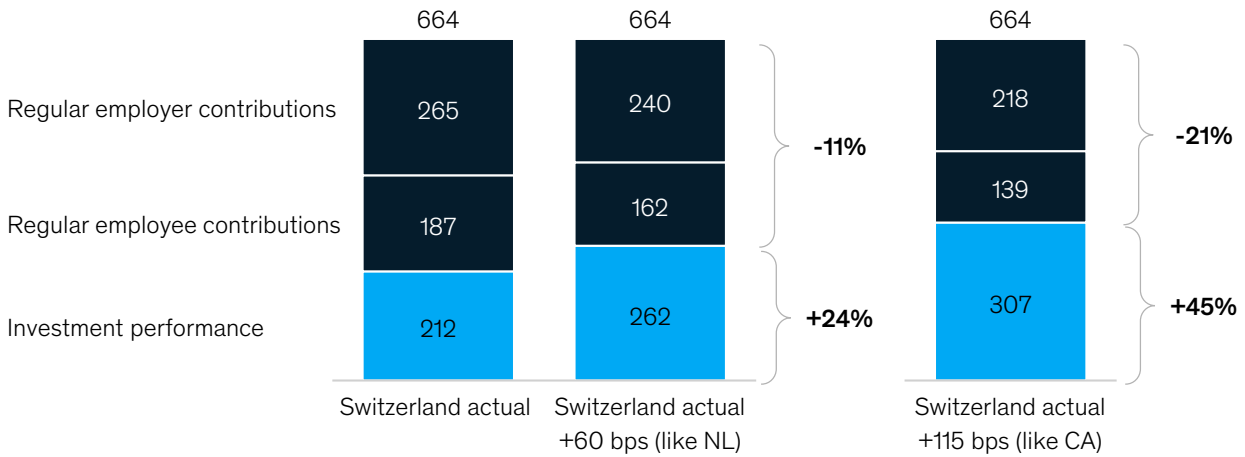**Total cumulated investment income of Swiss pension funds stay for varying real net investment returns**
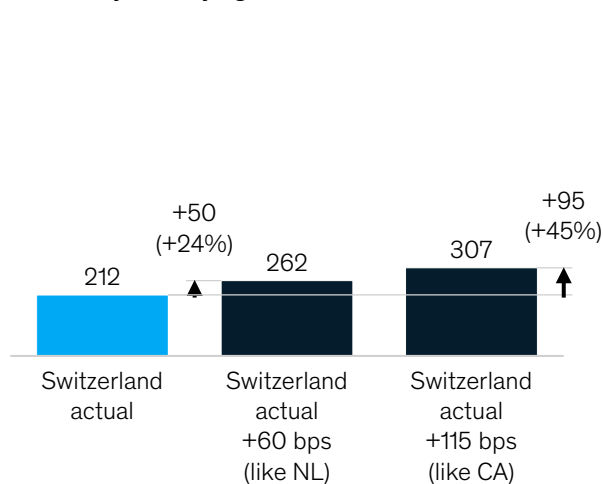
Total Swiss pension fund assets 2018 for varying real net investment returns

Source: McKinsey

Exhibit 23

Scenario II: lower employer and employee contributions in light of higher investment performance, 2008-18

CHF billions

	Switzerland actual	Switzerland actual +60 bps (like NL)	Switzerland actual +115 bps (like CA)
Total	664	664	664
Regular employer contributions	265	240	218
Regular employee contributions	187	162	139
Investment performance	212	262	307

-11% +24% -21% +45%

Source: Swiss Federal Office for Statistics; McKinsey

An average employee could receive up to CHF 6,900 in additional pension payments annually if Swiss funds matched foreign peers' performance

Our third hypothetical scenario aims to highlight the benefit to the average Swiss employee if the country's second-pillar pension funds consistently delivered investment performance in line with their Dutch or Canadian counterparts. To do so, we estimate how much more in pension savings this individual would be able to build up by retirement after a full working life of accumulating pension assets at the level of the peer countries' investment returns. Using the current minimum conversion rate for the mandatory portion of second-pillar pensions, we can then calculate how these higher pension savings would translate into annual pension payments and compare them to what the employee would have received at Swiss pension funds' actual average annual investment performance during the 2008 to 2018 timeframe.

Assuming that the average Swiss employee contributes to the second-pillar pension system for 40 years (that is, from age 25 to age 65), earns the national median wage throughout his or her working life,[65] and pays the legally required minimum pension contribution in each age bracket,[66] we find that this individual could have accumulated more than CHF 52,000 in additional pension savings if Swiss pension funds had achieved the same investment performance as their Dutch peer institutions. That figure rises to CHF 102,000 in additional pension assets if the Swiss funds had achieved returns on par with their Canadian counterparts. These figures constitute increases of 12 percent and 24 percent, respectively, on the CHF 428,500 total assets the average employee would have accumulated based on the investment performance that Swiss funds did in fact achieve during the 2008 to 2018 period (Exhibit 24). Using the current conversion rate of 6.8 percent, these additional pension savings at retirement would have translated into additional annual payments of CHF 3,500 and CHF 6,900 per year, respectively.

The average Swiss employee could accumulate CHF 102,000 in additional pension assets, if Swiss funds achieved returns on par with their Canadian counterparts.

Exhibit 24

Scenario III: average swiss employees' pension asset accumulation at different investment returns

Effect of higher real net investment returns on available second-pillar pension capital at retirement

■ CH actual ■ CH actual +60 bps (like NL) ■ CH actual +115 bps (like CA)

Second pillar capital
CHF '000

+**CHF 6,900** (+24%)
pension p.a.[2]

+**CHF 3,500** (+12%)
pension p.a.[2]

530
480
428[1]
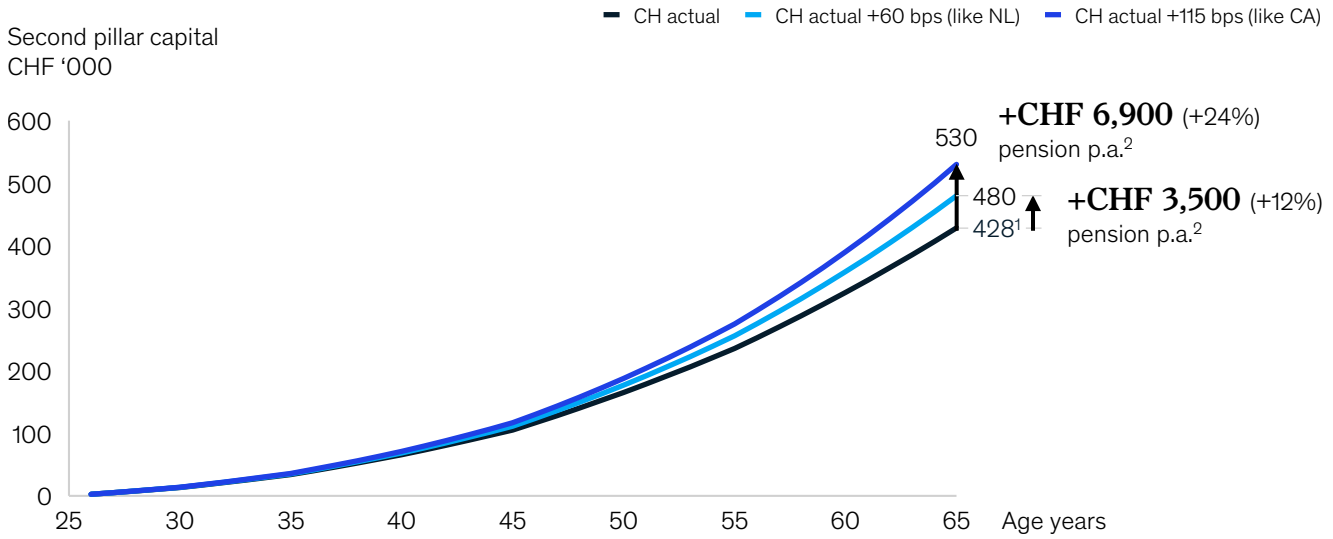
1. Annual pension equivalent of 27,000 CHF
2. Based on current capital-to-pension conversion rate of 6.8%

Source: McKinsey

Exhibit 25

Scenario IV: assessing the additional time to reach hypothetical retirement assets with current returns

■ CH actual ■ CH actual +60 bps (like NL) ■ CH actual +115 bps (like CA)

Second pillar capital
CHF '000

+4.4 years

+2.3 years

530
480
428[1]
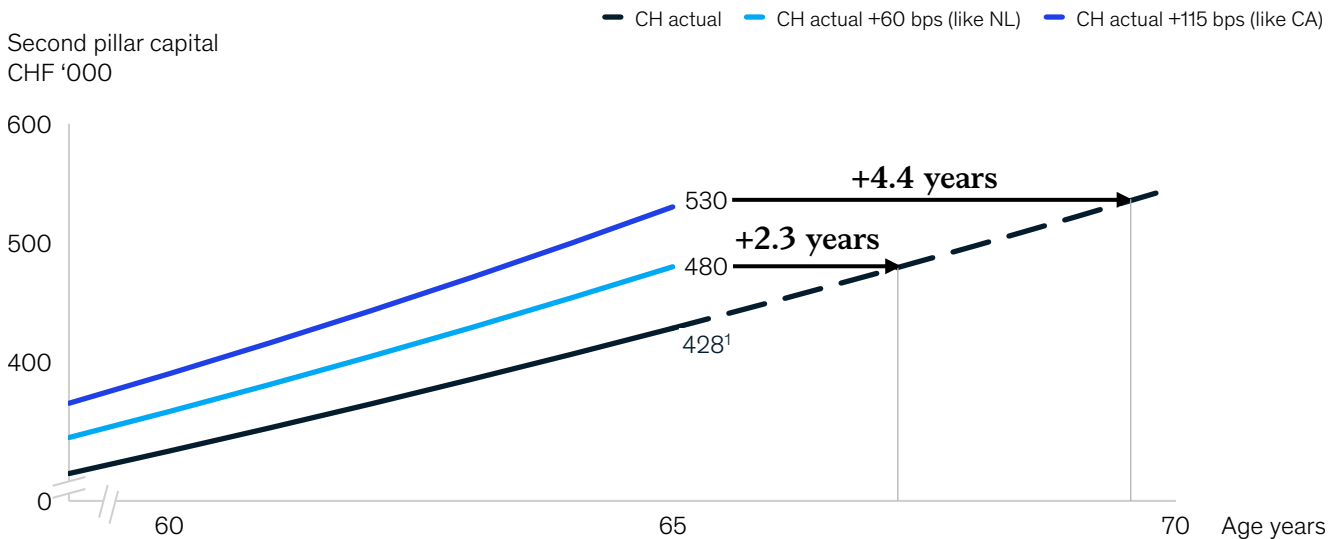
Note: Analysis assumes daily investment returns by spreading delta in assets from one year to the next over 365 days to allow calculating exact days

Source: McKinsey

The significance of the increase in accumulated pension assets as a result of a 60- to 115-bps annual uplift in investment performance can be demonstrated in another way. In our final "what if" scenario, we calculate the number of additional years an average Swiss employee would need to contribute to the second-pillar pension system at the investment return levels Swiss pension funds had achieved between 2008 and 2018 in order to accumulate the same pension savings that he or she would have accrued at Canadian- or Dutch-level investment returns.[67] The comparison with Dutch funds yields 2.3 additional years of work. To reach the pension savings that an investment performance in line with Canadian pension institutions would deliver, the average Swiss employee would have to extend his or her working life even more: by 4.3 years (Exhibit 25).

In other words, all other things being equal, improving Swiss second-pillar pension funds' investment performance to the level of Dutch or Canadian peer institutions and delivering this higher performance consistently over the 40-year working life of an average Swiss employee would have the same impact on the employee's pension savings at retirement as an increase in effective retirement age from Switzerland's current level of 65 years (for men) to 67.3 years (in the case of Dutch-level investment returns) or 69.3 years (for Canada-level performance).

□ □ □

All four "what if" scenarios clearly show the significant untapped opportunity within Switzerland's second-pillar pension system: as much as CHF 95 billion in additional pension assets over the 11 years covered in our study, an accelerated pension savings accumulation that would boost the average Swiss retiree's pension income by almost a quarter, and up to 4.3 years in later retirement that could in principle be avoided. These results confirm the need for measures that will improve the investment performance in the second-pillar pension system—a topic we address in the next chapter.

All four scenarios clearly show the significant untapped opportunity.

Making up lost ground

Chapter 4:
To raise the performance of its second-pillar pension funds, Switzerland would need to act on three fronts

Structural disadvantages, rather than differences in risk exposure, account for most of Swiss pension funds' relative underperformance

In previous chapters, we demonstrate that Swiss second-pillar pension funds structurally underperformed their Dutch and Canadian peer organizations over the 2008 to 2018 time period. We also outline how improving Swiss funds' investment performance to the level of globally leading peers could significantly enhance the health of Switzerland's overall second-pillar pension system—and yield substantial benefits for Swiss retirees.

In our two-step investment performance comparison, we also find that the performance gap between Swiss pension funds and their foreign peers was by no means only due to differences in SAA benchmark returns and thus different attitudes to risk-taking. In fact, disparities in SAA benchmark returns account for less than half of the performance gap

we observe between Swiss and Canadian funds (roughly 55 bps of the 115-bps total) and actually reduce the gap between Swiss and Dutch funds from approximately 90 bps per year to 60 bps (Exhibit 13). Instead, it is differences in the net value-add—or pension funds' ability to outperform their respective asset allocation benchmarks after costs—that explain the bigger portion of the overall performance gap and should therefore receive most of the scrutiny.

It goes beyond the scope of this paper (and the available data) to unequivocally prove what drives the differences in net value-add between Swiss second-pillar pension funds and their peers abroad. However, based on existing research by both academics and industry practitioners, as well as our own experiences working with institutional investors, we see four interrelated factors that likely explain a significant part of the disparity.

1. Swiss pension funds are smaller than their Canadian and Dutch counterparts

While the Swiss, Canadian, and Dutch pension systems are broadly comparable in terms of their overall size and relative importance to their respective economies, they differ significantly in the number and average size of the individual pension funds that manage the majority of pension assets. The average assets under management (AuM) for pension funds included in the three survey samples we use is roughly CHF 1.2 billion for Switzerland, CHF 17.6 billion for Canada, and CHF 49.5 billion for the Netherlands—large size differences indeed.

The survey figures likely overstate the actual market-level averages in each of the three countries and do so more significantly for Canada and the Netherlands than for Switzerland.[68] They do, however, reflect the reality that large pension funds play a much bigger role in managing Canadian and Dutch pension assets than they do in Switzerland. The 15 largest pension funds in Canada account for 61 percent of all second-pillar pension assets in that country and each manages on average CHF 78 billion, while the top 15 funds in the Netherlands account for a full 75 percent of the total, with average AuM of CHF 76 billion in each institution. In contrast, the portion of total pension assets held by Switzerland's 15 biggest funds is only 33 percent—or about half the share that the top 15 manage in its peer countries—and their average AuM only reached CHF 19 billion in 2018 (Exhibit 26).

This size difference matters as several research efforts have shown that larger funds tend to outperform smaller ones. Data from Swisscanto's recent pension fund surveys, for example, indicates that the 10-year annualized return of Swiss second-pillar pension funds with more than CHF 500 million in assets was 48 bps p.a. higher than the return of funds with assets below that mark.[69] In a 2016 paper,

Manuel Ammann and Christian Ehmann reported similar findings, demonstrating that larger funds outperformed smaller ones in excess returns over the risk-free rate net of costs as well as in net value-add.[70] Additionally, an analysis of US institutional investors' performance between 1998 and 2016, conducted by CEM Benchmarking, found that US funds with more than USD 10 billion in assets delivered higher returns than those with less than USD 2 billion in assets in most of the investment strategies studied (Exhibit 27).

Recognizing the role of asset size in pension fund performance, many legislators and regulators around the globe have called for pension fund consolidation in recent years. Dutch pension regulator DNB, for example, has actively encouraged mergers among smaller funds, helping to spur a decline in the total number of pension funds from more than 1,000 in 1998 to fewer than 233 in 2018.[71] In Australia, the 2010 Cooper Review recommended that trustees of the country's superannuation funds be required to assess annually whether their funds were of optimal size to achieve the best possible outcomes for members.[72] The review led to a reduction of more than 25 percent in the number of Australian pension funds between 2012 and 2015.[73] In the UK, meanwhile, the government is forcing all 87 English and Welsh local government pension schemes (LGPS) to form eight large investment pools, a process explicitly aimed at improving investment performance for LGPS beneficiaries.[74]

Of course, asset size alone does not guarantee better investment performance or higher net value-add. Rather, size enables pension funds to capture economies of scale, choose more effective management and implementation styles, and put more professional governance and risk management practices in place. We explore each of these benefits of greater scale below.

Size enables pension funds to capture economies of scale, choose more effective management and implementation styles, and put more professional governance and risk management practices in place.

Exhibit 26

Top 15 pension funds per country

Second pillar, December 31, 2018, CHF bn

■ % of total pension assets covered by top 15
■ Average AuM of top 15,CHF

Switzerland[1]   19.0   33%

PUBLICA	39.8
Kanton Zürich (BVK)	32.1
UBS[2]	25.5
Migros (MPK)	23.5
Schweizerische Bundesbahnen (PKSBB)	17.1
ASGA Pensionkasse	17.0
Stadt Zürich (PKZH)	16.6
Credit Suisse	16.3
Swiss Post (PKPost)	16.2
Stiftung Auffangeinrichtung BVG	15.7
Vita Sammelstiftung	14.0
Kanton Bern BPK	13.1
Novartis	12.8
Caisse de prévoyance de l'Etat de Genéve (CPEG)	12.8
Kanton Basel-Stadt (PKBS)	12.3

Canada[3]   78.1   61%

Canada Pension Plan Investment Board (CPPIB)	265.9
Caisse de dépôt et placement du Québec (CDPQ)	219.3
Ontario Teachers' Pension Plan (OTPP)	135.4
Public Sector Pension Investment Board (PSP)[5]	121.2
British Columbia Investment Management Corporation (BCI)[5,6]	110.7
Ontario Municipal Employees Retirement Systems (OMERS)	72.4
Healthcare of Ontario Pension Plan (HOOPP)	56.9
Alberta Investment Management Corporation (AIMCo)[7]	48.1
Investment Management Corporation of Ontario (IMCO)[6]	45.7
Canada Post[8]	18.8
Hydro-Quebec	17.8
Bell Canada [8]	16.9
Air Canada [8]	15.1
OP Trust	14.4
Canadian National Railway Co. [8]	12.4

Netherlands[3,9]   75.7   75%

ABP	449.2
Pensionenfonds Zorg en Welzijn (PFZW)	224.4
Pensioenfonds Metaal en Techniek (PMT)	81.9
BPF Bouwnijverheid (bpfBOUW)	64.5
Pensionenfonds van de Metalektro (PME)	52.6
Shell	30.8
ING	30.5
ABN Amro Bank	29.9
Stichting Pensioenfonds PGB	28.6
Beroepsvervoer over de Weg	28.4
Rabobankorganisatie	27.8
Pensioenfonds Detailhandel	23.2
KLM Royal Dutch Airlines	22.7
Philips	21.0
BPL (Landbouw)	19.5

1. Total assets without assets covered by insurance policies as per methodology of the Swiss Federal Office of Statistics; note: Compenswiss excluded as they do not handle second-pillar assets
2. Swiss pension plan assets
3. Converted to CHF using the exchange rate of the Swiss Federal Tax Authority for December 31, 2018
4. Fair value of net investments if not stated otherwise
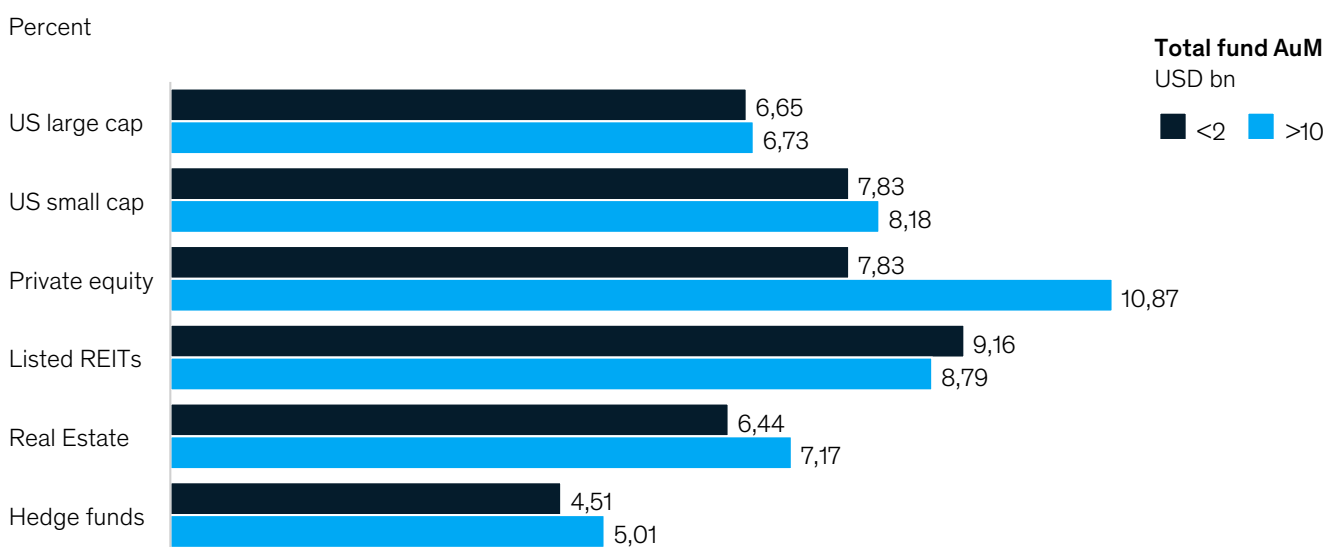
5. Per March 03,2019
6. AuM
7. AuM of pension plans only; total AuM CAD 108.2 bn (CHF 78.1 bn)
8. Fair value plan assets
9. Invested capital = investments for the pension fund's risk, investments for the members' risk, reinsured technical reserves

Source: Swiss Federal Office for Statistics; Dutch National Bank; Statistics Canada; Thinking Ahead Institute; IPE; Swiss Fed eral Tax Authority

Exhibit 27

US institutional investors' average compound returns by asset class and fund size, 1998-2016

Percent

Total fund AuM
USD bn

■ <2   ■ >10

Asset class	<2	>10
US large cap	6,65	6,73
US small cap	7,83	8,18
Private equity	7,83	10,87
Listed REITs	9,16	8,79
Real Estate	6,44	7,17
Hedge funds	4,51	5,01

Source: CEM Benchmarking

2. Larger funds tend to benefit from economies of scale

Large funds' relative outperformance is often attributed to the cost benefits that arise from managing bigger pools of assets. The argument is compelling given that the marginal costs of managing an additional billion Swiss francs worth of assets (within a mandate or investment strategy not constrained by capacity) are typically very small. In addition, large institutional investors tend to have stronger bargaining positions than their smaller peers when negotiating fees with external fund managers or other service providers.

Several national studies confirm that larger funds benefit from relatively lower investment management costs. DNB, for example, concluded in a 2017 survey of the Dutch pension market that "large pension funds pay significantly less for the same performance by asset managers" than smaller funds.[75] Consultancy Spence Johnson came to a similar conclusion in its 2016 analysis of the UK's LGPS sector, finding that "smaller schemes […] pay higher than average costs for investment management."[76]

These assessments are in line with our own analysis of investment management costs in Box 4 of this paper. There, we report that the average Canadian and Dutch pension funds included in our survey sample (which are 15 times and 40 times larger than the average Swiss fund) would be able to manage the average Swiss fund's asset allocation at 13 percent and 27 percent lower cost, respectively.

Swiss pension funds on average managed only 29 percent of their assets internally in 2018, while Dutch and Canadian funds reached shares of 51 percent and 66 percent, respectively.

3. Larger funds tend to choose more effective management and implementation styles

While McKinsey's own 2018 research confirmed that larger funds have lower investment management cost margins than smaller funds, in that analysis we concluded that larger funds' cost benefits seemed "to result less from greater scale in processes and systems and more from use of more cost-efficient management and implementation practices."[77] As funds grow in size, we pointed out, they tend to shift to more economical implementation styles—avoiding expensive fund-of-fund structures, for example, and managing more assets internally. This conclusion is supported by a large body of research from CEM Benchmarking. Among other things, CEM finds that smaller pension funds on average manage a significantly lower share of their assets internally (Exhibit 28) and that they tend to use more expensive investment vehicles to gain exposure to illiquid asset classes than their larger peers.[78]

Swisscanto's analysis of Switzerland's pension landscape also finds that smaller funds use more expensive investment vehicles. In the 2018 edition of Swisscanto's annual pension fund study, the authors
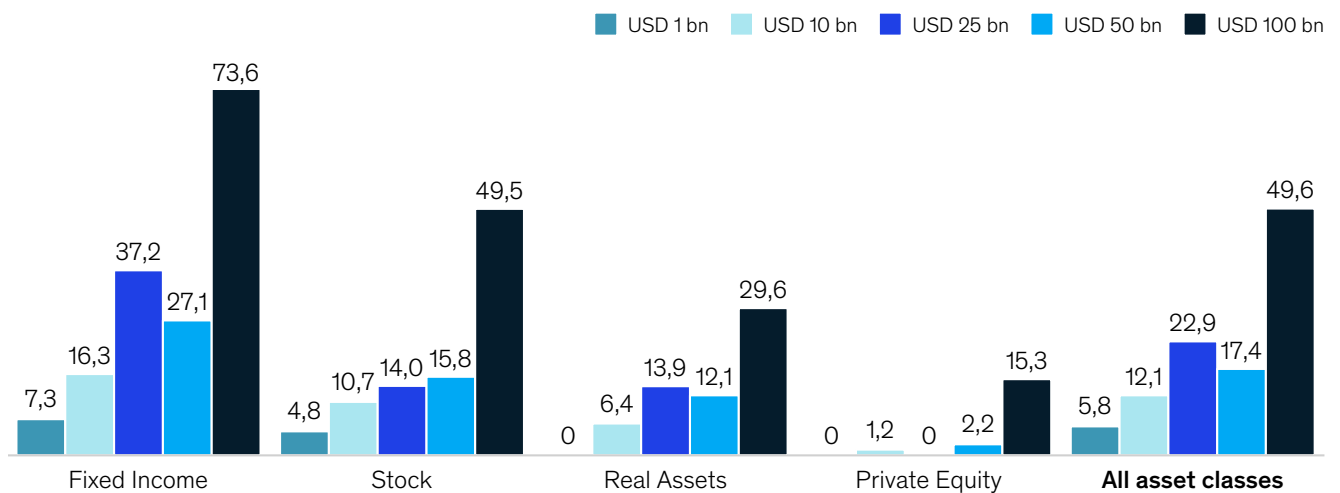
point out that Swiss pension funds with assets below CHF 500 million make disproportionately high use of fund-of-fund structures and listed funds in their indirect real estate portfolios.[79] This is likely to result in higher investment management costs and, in the case of listed indirect real estate funds, higher downside risk due to the faster rise of fund prices than of the underlying net asset values in recent years.

With regard to the share of internally managed (rather than outsourced) assets, the data from Swisscanto and CEM Benchmarking shows a striking disparity between Switzerland, Canada, and the Netherlands. According to data from Swisscanto's annual survey, Swiss pension funds on average managed only 29 percent of their assets internally in 2018, while Dutch and Canadian funds reached shares of 51 percent and 66 percent, respectively, according to CEM Benchmarking (Exhibit 29). The difference in the share of internally managed assets between Canada and the other two countries is all the more remarkable given that Canadian pension funds averaged a much higher allocation to alternative asset classes (Exhibit 18), which are more often outsourced to external managers than other asset categories.

Exhibit 28

Share of internally managed assets by asset class and total fund size, 2018

All funds in CEM Benchmarking database, percent

Legend: ■ USD 1 bn ■ USD 10 bn ■ USD 25 bn ■ USD 50 bn ■ USD 100 bn

	USD 1 bn	USD 10 bn	USD 25 bn	USD 50 bn	USD 100 bn
Fixed Income	7,3	16,3	37,2	27,1	73,6
Stock	4,8	10,7	14,0	15,8	49,5
Real Assets	0	6,4	13,9	12,1	29,6
Private Equity	0	1,2	0	2,2	15,3
All asset classes	5,8	12,1	22,9	17,4	49,6

Source: CEM Benchmarking

Exhibit 29

Share of internally managed assets of pension funds in three focus countries, 2008-18

Percent

Switzerland[1]

35,5 (2008)

29,0 (2018)

-6.5 ppts. ↓

Canada

63,2 (2008)

66,2 (2018)

+3.0 ppts. ↑

Netherlands

56,8 (2008)

50,9 (2018)

-5.9 ppts. ↓
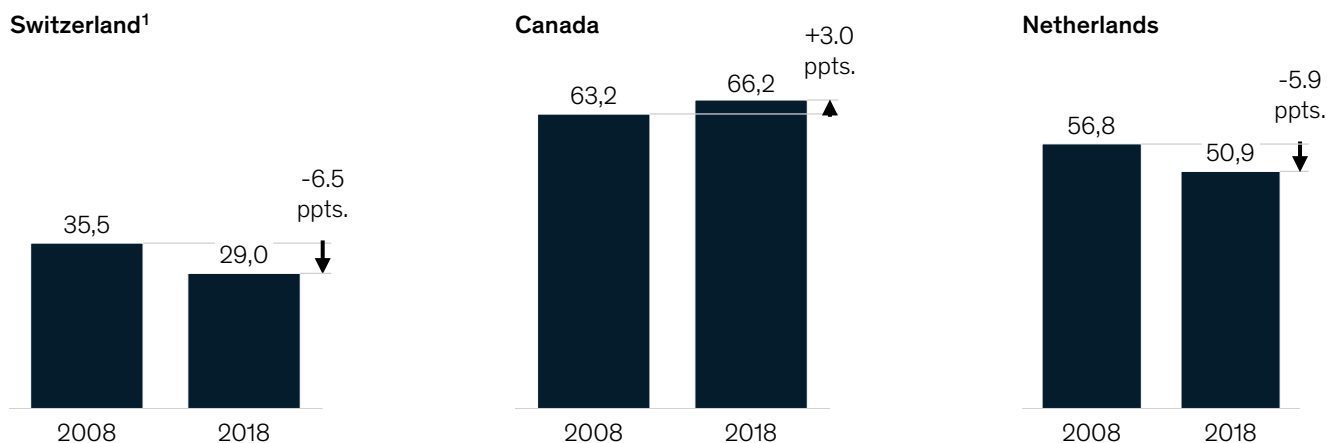
1. Scaled to exclude the category "by employer" for which data was only collected until 2012
2. Average for years with identical methodology (i.e., 2008-10 and 2014-18) as period from 2011 to 2013 is not comparable due to diverging reporting logic

Source: Swisscanto Vorsorge AG; CEM Benchmarking

4. Larger funds tend to have more professional governance and risk management practices in place

Many industry observers attribute the more effective management and implementation styles of larger funds to their more sophisticated governance and risk management practices compared to smaller peers. In their 2016 paper, Ammann and Ehmann attribute larger Swiss pension funds' higher excess returns over the risk-free rate to the fact that "larger pension schemes are likely to have more institutionalized internal governance processes in place."[80] The UK's pension regulator TPR reached a similar conclusion in 2017, finding that smaller funds in that country "tend to display poorer governance standards, for instance they place less focus on training arrangements, regular board assessments, effective internal controls and oversight of third parties."[81]

A survey of 139 Swiss pension institutions[82] that Ammann and Ehmann conducted for their study offers a number of additional insights into Swiss second-pillar pension funds' governance and risk management practices. The two authors reported that participating institutions on average scored only slightly more than half of all possible points on governance quality and none achieved the maximum possible score.[83] The authors also pointed out that only 34 percent of the pension funds in their sample had a mission statement in place describing the institution's strategic goals, and only 22 per-

cent reported that they explicitly defined their management objectives for the board of trustees.

Furthermore, Ammann and Ehmann found "evidence for a lack of professional expertise among the governing bodies." More than 70 percent of the funds in their sample had trustees who were not elected for their specialized knowledge of pension issues, and 39 percent of the funds lacked any education or training programs for trustees or executives. The authors called their findings "an alarming result given the extensive fiduciary responsibility that board members have to the pension plans' beneficiaries."[84]

Considering that the World Bank's 2017 pension report calls "strong, independent governance […] perhaps the most important element" in pension fund management and "the single most important factor in the success of the Canadian model,"[85] it seems fair to conclude that Swiss pension funds' structural underperformance in net value-add is at least partially due to their smaller size—along with the lower economies of scale, less efficient management and implementation styles, and weaker governance and risk management practices that typically accompany it. Addressing these shortcomings across Switzerland's rather fragmented landscape of second-pillar pension institutions will be challenging. At the same time, our analyses in earlier chapters show that the benefits of doing so would be significant.

Addressing Swiss pension funds' structural underperformance would require action on three fronts

The above considerations suggest a need for change along three dimensions. For second-pillar pension funds to raise their investment performance to the levels of their foreign peer institutions, they first and foremost, would need to continue strengthening their own investment management practices. Second, Swiss lawmakers and regulators would need to modernize and simplify the regulatory environment in which the country's second-pillar pension funds operate in order to encourage and enable them to upgrade their investment practices. Finally, pension funds and regulators would both need to work towards accelerating the ongoing consolidation of pension funds in the country and create more pension institutions that can operate on a greater scale.

Below, we present seven actions that our analysis suggests would help pension funds strengthen their investment management practices and guide Swiss lawmakers in improving the regulatory environment. While each action would have clear benefits for Switzerland's second-pillar pension sector if pursued in isolation, they should ideally be taken in parallel as they tend to reinforce and build on each other. That would require a coordinated effort by all stakeholders, including pension funds, their trustee boards and sponsors, regulators, and legislators. Additionally, the successful passage of any regulatory changes would likely require building a public consensus on the need for system reform given that any significant policy changes will have to be ratified by the electorate.

Action 1: shift pension fund investments toward more cost-efficient implementation styles while gradually increasing risk

If Swiss second-pillar pension funds are to raise their performance to the levels achieved by their leading foreign peers, our analysis suggests that they may want to reassess their overarching investment strategies and implementation styles. In particular, smaller funds would benefit from avoiding costly and potentially more risky investment vehicles in the alternative assets space, such as fund-of-fund structures or listed funds that trade at a significant markup to their underlying net asset values. In cases where funds' allocations to individual investment strategies are too small to allow cost-efficient access to attractive investment opportunities, funds could either explore opportunities to pool their activities with other like-minded investors in order to achieve bigger scale (see Action 7) or opt for less expensive investment strategies altogether.

CEM Benchmarking's analysis of US pension funds' performance is instructive in this context (Exhibit 27). Not only did US funds with more than USD 10 billion in assets outperform their counterparts with less than USD 2 billion in assets in private equity investments (among other asset classes), but the smaller institutions achieved the same annual returns on their private equity portfolios as they did in US small caps. It is worth noting that small caps are a less costly investment strategy to implement and are generally considered less risky than private equity.

Pension funds could also consider revisiting their "make-or-buy" decisions across different investment strategies with the objective of moving the management of a greater share of assets in-house. In categories where external management remains sensible, they should continue their push for lower management fees, increased transparency, and better alignment of interests between asset owners and asset managers.

Notwithstanding these changes, our research shows that Swiss pension funds would also benefit from evolving their strategic asset allocations. Their current average asset allocation of 38 percent to fixed income investments (Exhibit 18) is becoming increasingly unsustainable given that interest rates are likely to remain low (or even negative) in the short to medium term.

While high allocations to real estate will probably remain a cornerstone of Swiss second-pillar pension funds' investment portfolios, greater international diversification might be prudent in light of increasing concerns that the Swiss real estate market may be due for a correction. Funds could also consider raising their allocations to other illiquid asset classes such as infrastructure, private debt, and private equity in order to enhance investment returns and ideally improve portfolio diversification. That said, pension funds would be well advised to take a cautious and gradual approach when building up these allocations given the high valuation levels that most alternative asset classes have reached in recent years.

Swiss pension funds may want to reassess their overarching investment strategies and implementation styles.

In our view, Swiss second-pillar pension funds will likely have no choice but to increase their exposure to riskier assets over time in order to meet their return targets. At the same time, it will be essential for them to do so in ways commensurate with their risk-bearing capacity and the sophistication of their internal investment and risk management capabilities. For this reason, any strategy aimed at adding risk to the investment portfolio should be accompanied by upgrades to the fund's in-house investment and risk management capabilities (Action 2) and its overall governance framework (Action 3).

Action 2: upgrade pension funds' investment and risk management capabilities

Increasing second-pillar pension funds' exposure to riskier alternative assets while ensuring appropriate diversification and avoiding expensive fund-of-fund structures (or external mandates altogether) might sound like a contradiction. Indeed, such strategic shifts may be ill-advised without simultaneous upgrades to the fund's investment management practices. For this reason, we see value in pension funds also working on further strengthening their in-house investment and risk management capabilities, spanning the full range of activities from asset-liability matching and strategic asset allocation to portfolio management and implementation.

Many of the world's best-performing pension markets have already seen their funds take such steps. Leading Canadian and Dutch institutions, for example, have over time developed into sizeable and sophisticated investment organizations. As the 2017 World Bank report points out, "Canadian pension organizations have gone from being seen as relatively sleepy to being seen as highly desirable places to work" that "have been able to recruit and retain some of the best leaders in the pension and investment industry."[86] Today, organizations such as CPPIB, CDPQ, and OTPP in Canada or ABP and

PfZW (via their affiliated pension managers APG and PGGM, respectively) in the Netherlands have large teams of highly skilled and experienced investment professionals who manage significant portions of the portfolio in-house.

Canadian and Dutch market leaders also invest considerable time and resources in constructing their portfolios and deciding on strategic asset allocations. They often employ sizeable teams that develop proprietary insights about new investment opportunities across asset classes, industry sectors, and regions, and define the funds' long-term investment strategies based on these insights. They also continuously evolve their portfolio construction and asset allocation practices in order to gain a competitive advantage over other market participants and thus improve their investment returns. In fact, a 2016 McKinsey survey of globally leading institutional investors showed that many planned to add staff to their portfolio construction teams in recognition of the growing importance they attach to this activity—even though many of their teams were already significantly larger than those of most other institutional investors around the world (Exhibit 30).[87]

In our view, there are few (if any) Swiss second-pillar pension funds today that can credibly claim to operate at the level of sophistication of the above-mentioned global leaders. This is neither surprising (given the significantly smaller scale of Swiss pension funds, as highlighted above) nor intended as a criticism of the highly dedicated Swiss pension fund trustees and employees, who perform their duties on behalf of pension fund beneficiaries with deep professionalism and a great sense of responsibility.

At the same time, we believe Swiss funds' lower levels of sophistication should not simply be accepted as an unavoidable reality. As the global investment environment becomes ever more complex and

Swiss pension funds would benefit from investing in continually growing, improving, and professionalizing their in-house investment and risk management teams in order to remain competitive.

Exhibit 30

Current size and planned changes in size of leading institutional investors' portfolio construction teams

Share of respondents in percent, N= 39

What is the rough size of your portfolio construction team today?

What do you think the size of your portfolio construction team will be in 5 years?

None	1-2 people	3-5 people	5-10 people	10-20 people	20+ people
3	5	26	21	28	18

Stay the same	Add 1-2	Add 3-5	Add 5-10	Add>10
21	18	41	10	
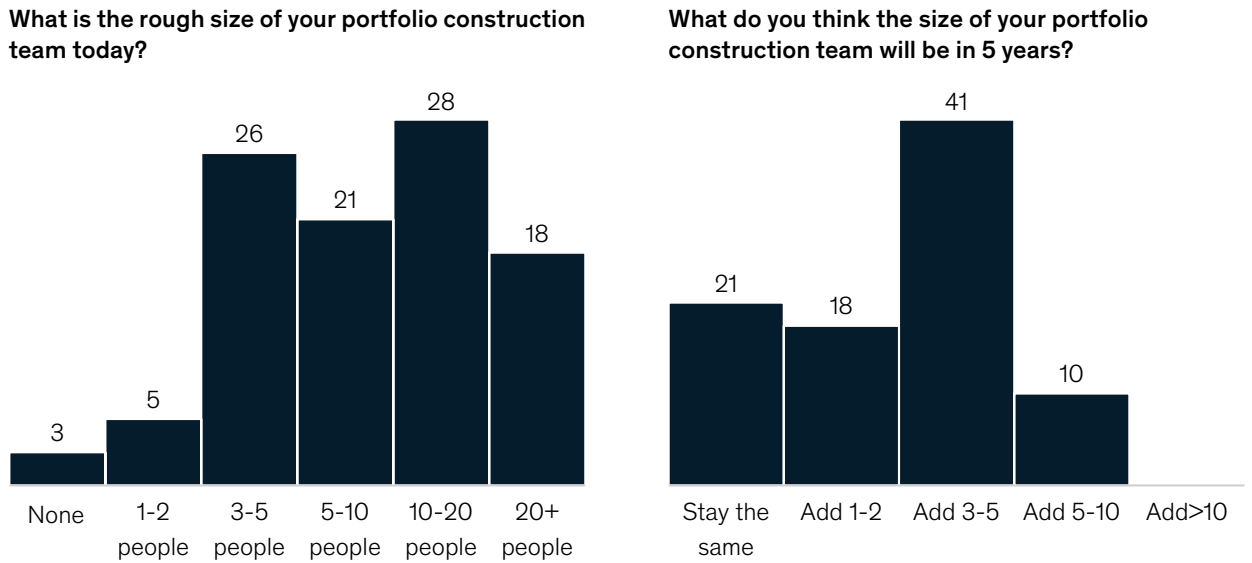
Source: McKinsey survey of globally leading investors January 2016

competition for the best investment opportunities intensifies, Swiss pension funds would benefit from investing in continually growing, improving, and professionalizing their in-house investment and risk management teams in order to remain competitive. That likely means improving the skills of existing staff as well as hiring additional investment professionals whenever the institutions can afford to do so.

Undoubtedly, this improvement process will take time and may prove particularly difficult for small funds. However, at a time when many financial institutions are shrinking their payrolls, pension funds may have a better chance of attracting high-performing professionals than they ever had in the past. What is more, upgrading their internal investment and risk management capabilities will be an important prerequisite to moving into more risky investment strategies—especially for less-sophisticated pension funds.

Action 3: strengthen pension funds' investment governance

Improving Swiss second-pillar pension funds' overall investment governance is at least as important a prerequisite for greater investment risk-taking as

upgrading in-house investment management capabilities. As we note above, many industry experts consider governance to be the key force behind the success of globally leading pension models. This makes the relatively poor governance practices at Swiss pension funds that Ammann and Ehmann found in their 2016 survey a cause for serious concern. If they have not already done so, Swiss pension funds and their sponsors would benefit from clarifying their overarching strategic objectives and making sure all trustees and employees fully understand them. Introducing clear management objectives for all decision-making bodies and periodic performance reviews linked to these objectives would also be valuable. These reviews should include the board of trustees, the fund's most important decision-making body. The fact that most trustees are part-time volunteers should not exempt them from being held accountable for the quality of their decisions on behalf of the pension fund's beneficiaries.

Well-defined management objectives for the various decision-making bodies bring another important benefit: they enable pension funds to clearly delineate the roles and responsibilities of their board of trustees, their in-house management team, and any

external administrators or advisors to which the fund may outsource some or all of its activities. As Jaap van Dam, principal director of investment Strategy at Dutch pension manager PGGM, points out in the interview below (Box 6), role confusion can produce situations in which boards "under-delegate" or pursue "overly conservative or otherwise suboptimal investment strategies"—outcomes clearly not in the interest of any pension fund's beneficiaries.

More fundamentally, it is important that all representatives of pension funds—including trustees, managers, and administrators—have the skills and experience needed to effectively perform their duties. As the investment environment grows more complex, it is increasingly challenging for non-experts to weigh all the technical and far-reaching implications of their investment decisions. While equal representation of employers and employees on boards of trustees (as mandated by Swiss law) is important to ensure these stakeholder groups' interests are taken into consideration, it should not take precedence over the quality of board decisions. After all, poorly informed decisions are in the interest of neither employers nor employees—and, in principle, both groups should be able to nominate trustees with the appropriate level of skill and expertise to the pension fund's board. It goes without saying that these nominations could also include external specialists, who could either represent one of the stakeholder groups or serve as independent trustees.

In addition, it is paramount that Swiss second-pillar pension funds continue to invest in training for their board members. It is encouraging that Ammann and Ehmann find more than half of the pension funds in their survey offer at least some education or training programs for trustees or executives. Our experience working with boards of trustees (as well as corporate boards) across the globe, however, suggests that many of the existing training programs tend to be overly academic in nature and hence of limited practical value in guiding board members' day-to-day responsibilities.

As we note earlier, small pension funds tend to struggle more than large funds to secure high-caliber employees and board trustees. Likewise, they often face constraints in establishing training programs for board members that would address gaps in knowledge and experience. As such, strengthening pension funds' investment governance framework—as well as implementing our first and second recommendations outlined above—could be enabled by further pension fund consolidation or by pooling investment-related activities across pension institutions, which we discuss in Action 7.

Action 4: increase accountability of pension funds' decision-makers by eliminating outdated investment limits

While individual pension funds would need to take the lead in strengthening their investment management practices, Swiss lawmakers could encourage them to do so by modernizing the regulatory framework that governs Switzerland's second-pillar pension system. As a first step, it could be beneficial for them to consider eliminating the current rules that define specific limits for various investment types and asset classes and instead emphasize the principles-based elements of the existing regulations.

In contrast to the legal frameworks of many globally leading pension markets, the Swiss Ordinance on Occupational Retirement, Survivors', and Disability Pension Plans (the so-called BVV2 directive) explicitly defines a finite list of permitted investment categories and sets the maximum share of the portfolio that can be allocated to each. Among other things, the directive caps the portion of assets that a fund can invest in alternative asset classes (such as private equity, hedge funds, commodities, or infrastructure) at 15 percent and in international real estate at 10 percent. It also limits the allocation to foreign-currency-denominated investments to 30 percent across all asset classes.

Furthermore, the directive requires pension funds to use collective investment vehicles when they invest in alternative asset classes. This means that Swiss second-pillar pension funds are de facto barred from managing these assets internally, even though in-house management is typically the most cost-effective way of managing alternative assets provided the pension fund has the required scale and investment capabilities.

This quasi-ban of internal management means that either lawmakers were not aware of the benefits of internal management at the time the current BVV2 directive was passed or they did not expect Swiss second-pillar pension funds to ever reach the scale required to successfully manage investment in these types of assets internally. Either way, a rule requiring pension funds to employ investment vehicles that might be suboptimal or overly expensive for their purposes does not benefit the Swiss pension system.

Most countries that had similar rules (including the US and the UK) therefore eliminated specific investment restrictions and replaced them with principles-based rules of conduct. Often referred to as "prudent investor rules," these regulations typically rest on the concept that "the people responsible for investing the assets of the pension fund manage these as if they were their own."[88] The rules usually

focus primarily on the quality of the pension funds' organizational and operational structures and the qualifications of their decision-makers rather than the type of asset classes the funds can invest in or how they allocate their portfolios.

It is worth noting that the BVV2 directive already incorporates many elements of the prudent investor rule in addition to setting out the above-mentioned category investment limits. It furthermore includes a provision that allows pension funds to exceed the legally defined maximum allocations as long as they comply with the principles of the prudent investor rule and can justify deviating from the legal boundaries. This exception gives pension funds considerably more leeway in defining their asset allocations than "the letter of the law" would at first suggest, and many funds are taking advantage of it. In its 2019 pension fund study, Swisscanto reports that a full 50 percent of all pension funds participating in the survey—and 60 percent of funds with AuM above CHF 500 million—use the exception.[89]

In our opinion, this is an ineffective way to regulate pension fund risk exposure. A regulation that defines specific maximum allocations to individual investment categories while also including a provision that allows pension funds to ignore those limitations as long as they comply with general rules of conduct is unnecessarily complicated.

It is also potentially misleading, because the category limits may give pension fund trustees—many of whom are part-time volunteers and do not have an investment management background—the impression that the fund is being safely managed as long as its allocations stay within the BVV2 limits, when that in fact may not be the case. Conversely, pension trustees may perceive any deviation from the investment caps as either against the law or disproportionately risky and hence steer away from them, even when such deviations might be beneficial in the context of a broadly diversified portfolio.

The upshot, in our view, is that the current rules weaken the incentives for pension fund trustees and managers to make informed decisions about their funds' investment strategies based on professional asset liability management, portfolio construction, and risk management practices. This is not something lawmakers and regulators should encourage. Rather than defining which asset classes Switzerland's numerous and diverse second-pillar pension funds should invest in and to what extent, lawmakers could focus on ensuring that all funds have the right capabilities, structures, and processes in place to make informed investment decisions that reflect their specific situations, needs, and capabilities.

Action 5: increase performance transparency

While eliminating the BVV2 directive's existing investment limits and strengthening the focus on the prudent investor rule would encourage closer scrutiny of asset allocations by pension fund trustees, regulators should consider other rule changes as well. To increase trustees' accountability for their funds' management decisions, the Swiss government could introduce greater performance transparency across all second-pillar pension institutions operating in the country.

Today, an employer looking to join a collective pension institution, for example, will struggle to compare the performance of the different providers in the market. Faced with numerous technical metrics and no central and objective source of information, some pension fund sponsors rely on the conversion rate as a simplified performance indicator for comparison purposes. As Swisscanto outlines in the 2018 edition of its annual pension fund study, this creates an incentive for collective pension institutions to keep their conversion rates higher than may be actuarially sound. That, in turn, helps explain why collective pension institutions averaged an effective conversion rate of 6.09 percent in 2017 while other second-pillar pension funds averaged 5.83 percent.[90] Additionally, as we outline in Chapter 1, conversion rates that do not properly reflect a pension fund's actuarial realities lead to unintended cross-subsidization effects between different cohorts of pension fund members and endanger funds' long-term sustainability.

The government's efforts to establish greater performance transparency need not be limited to improving competition among collective pension institutions, however. Regulators could also consider standardizing funding level calculations across all types of pension institutions. While the existing regulatory framework requires all second-pillar pension funds to regularly publish their technical funding levels, the reported numbers rely on several parameters that funds are relatively free to set, based on their own actuarial ssumptions alone. Technical interest rates, for example, are currently set by each pension fund based on its own internal models and with only limited guidance on the maximum rate from the Swiss regulator. Higher technical interest rates by design translate into higher funding levels. Given that regulators also use the funding levels reported by individual pension funds when determining whether the funds are underfunded and need to take remedial action, pension fund managers have an incentive to work with inflated technical interest rates.

As the OECD has observed, "keeping the conversion rate at 6.8 percent would require an effective retirement age beyond 70 for the system to be financially viable."

In its 2019 pension fund study, Swisscanto finds a meaningful dispersion of technical interest rates among the second-pillar pension funds. Although the majority of both private- and public-sector pension funds reported using technical interest rates below 2.25 percent in 2018 (and were thus broadly in line with the 2-percent recommendation issued by the Swiss chamber of pension experts), Swisscanto notes that the highest reported values were 4 percent for private-sector pension funds and 5.85 percent for public-sector ones.[91]

As pension professionals know well, funds that use inflated technical interest rates are at risk of being unable to meet their liabilities in the future. For this reason, regulators in other countries (such as the Netherlands) define a discount rate all pension funds must use for their funding level calculations. In its 2019 economic survey on Switzerland, the OECD specifically recommends that "the supervisor should put in place a framework that regulates technical interest rate assumptions."[92]

Since greater performance transparency would significantly improve the health and sustainability of Switzerland's second-pillar pension system, a clearly defined set of reliable performance (and risk) indicators would benefit all stakeholders. These should apply to all pension funds and be based on consistent methodologies and assumptions. The government could make these indicators available to the public in an easily accessible form, such as a website, so that everyone with a stake in the pension system can stay abreast of its performance. Employers would be able to quickly compare the returns and risk of different collective pension institutions and employees could gauge how the performance of their employer's pension fund compares to that of other companies' funds. After all, pension benefits constitute an important part of total compensation for many employees as well as a large part of their overall wealth and are therefore important considerations in their employment choices.

Action 6: reduce political interference in defining actuarial parameters and assumptions

In exploring potential regulatory action to improve the transparency of pension fund performance reporting, we are mindful that government intervention comes with its own risks requiring careful management. Any proposed standardization and oversight of assumptions or methodologies that Switzerland's second-pillar pension funds use should strive to minimize the bureaucratic burden on the pension system. More importantly, regulators and lawmakers will need to take care that the imposition of technical parameters does not create adverse incentives (to take undue risks, for example) or other distortions in the marketplace.

In addition, any legally imposed assumptions or parameters should reflect the actuarial reality of the country's second-pillar pension system rather than outdated or unrealistic political aspirations. It is for this reason that the regime guiding Switzerland's current minimum conversion rate for the mandatory portion of the second-pillar pension system would benefit from reform.

The minimum conversion rate was set to 6.8 percent in 2014 and has remained unchanged since. Given Switzerland's effective retirement age and current life expectancy forecasts, this level is much too high. In fact, the current rate is technically consistent with an annuity of roughly 15 years—sufficient to take Swiss citizens retiring at 65 only to the age of 80, which is more than five years below the current life expectancy forecast. As the OECD has observed, "keeping the conversion rate at 6.8 percent would require an effective retirement age beyond 70 for the system to be financially viable."[93] The three key reform proposals currently being discussed by Swiss legislators and commentators aim to address this challenge by reducing the conversion rate to either 5.8 percent or 6 percent. However, even these reduced rates are significantly above the 4.5- to 5-percent level that a 2018 study by Helvetia estimates to be appropriate.[93]

Swiss lawmakers should consider more closely aligning the conversion rate for the mandatory part of the country's second-pillar pension system with actuarially sustainable levels. However, a one-time reduction of the conversion rate is unlikely to be enough—Switzerland would benefit from a new approach to setting the conversion rate in order to keep its pensions system in line with evolving demographic and financial trends. We agree with the OECD's observation that "the current system for setting parameters has proved unable to adapt to the economic situation and changes in life expectancy."[94]

In principle, the fairest (because the most objective) solution would be a formula that links the conversion rate for each year's cohort of retirees to changes in the underlying actuarial assumptions, such as life expectancy and expected capital market returns. However, agreeing on such a formula would likely prove very challenging. A more pragmatic solution could be to mirror the approach currently used for setting the minimum return for mandatory pension savings in the second-pillar: the conversion rate would be set by the government each year based on the recommendation of the federal commission for occupational pensions, which in turn considers the evolution of the underlying actuarial assumptions as well as the perspectives of all pension system stakeholders.

Action 7: encourage further consolidation or pooling of selected activities among pension funds

As we explain earlier in this chapter, scale is an important enabler of investment performance for pension funds. It facilitates the creation of robust investment governance frameworks and provides resources to upgrade internal investment capabilities. These upgrades in turn make it easier for pension funds to pursue more cost-effective investment approaches (such as managing funds internally) and higher value-add investment strategies.

Hence, it is not surprising that regulators and legislators around the world have encouraged pension institutions to pursue mergers or to pool at least some of their investment activities. Switzerland has seen a gradual consolidation among pension institutions since the introduction of the current second-pillar pension system in 1985. According to pension supervisory authority OAK, the number of registered pension institutions dropped by 73 percent over three decades: from 6,151 in 1987 to 1,643 in 2017.[95] The main driver was a continuous decline in the number of company-specific private pension funds and their consolidation within collective pension institutions.

This consolidation trend will likely continue, with OAK expecting the number of regulated second-pillar pension funds to decline to fewer than 1,000 by 2026.[96] Given the challenges that many (particularly small) pension funds are likely to face in the years ahead, however, this consolidation may not be happening fast enough. Switzerland's second-pillar pension system could be in much better health if more of the country's pension assets were being managed by fewer, larger pension institutions.

We are by no means suggesting that smaller funds should be forced to consolidate. Every pension fund merger comes with its own set of challenges[97] and pension trustees are right to think twice (or even three times) before they go down this road. Nevertheless, our analysis suggests that it would be in the interest of fund beneficiaries if pension funds—particularly smaller or less well-performing ones—were to proactively pursue opportunities for consolidation.

In Switzerland, pension fund sponsors can enter into many types of arrangements with collective pension institutions that allow them to tailor the balance between delegated and retained decision-making power to their specific situations and preferences. Funds reluctant to work with collective pension institutions also have the opportunity to partner with other like-minded pension funds—either by pursuing mergers or by pooling selected investment management activities. As mentioned above, the latter is the path the UK's LGPS sector is currently following by combining all 87 LGPSs in England and Wales into eight larger investment pools. The British experience could serve as a case study of what to do (and what not to) for Swiss institutions wishing to explore similar moves.

In our opinion, the Swiss government could also take a more active role in encouraging further consolidation among second-pillar pension funds. It could do so by putting greater scrutiny on the

The number of registered pension institutions dropped by 73 percent over three decades

investment management costs and returns of individual pension schemes, which would give lower-performing funds an incentive to consider a merger or pooling activities with other institutions. Local and cantonal governments could also consider following the example of their English and Welsh equivalents by pooling (some or all of) the investment activities of their own pension funds. This would create a group of larger public-sector investment pools that would have sufficient scale to upgrade their investment practices and thus set a precedent for other second-pillar pension funds in the country.[98]

An even more radical option would be to give all Swiss employees the freedom to choose their pension fund providers instead of relying on their employer's pension fund, as is currently required. As the OECD asserts in its 2019 economic survey, such a model could improve Swiss second-pillar pension funds' performance by increasing competitive pressure.[99] It would also have the benefit of reducing the costs associated with asset transfers between different pension funds when employees change jobs.

An effective implementation of such a "freedom of choice" model would, however, require full performance transparency and close regulatory oversight of the pension fund providers. Regulators would need to prevent misselling and other adverse incentives among providers while ensuring that Swiss citizens were sufficiently financially savvy to make decisions in their own long-term interests. After all,

freedom of choice only leads to better outcomes if people are well informed about the choices available to them and capable of deciding what is right for them.

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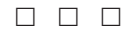
The Swiss pension system needs substantial reforms, and the time to act is now. Raising the investment performance of second-pillar pension funds is essential to improving the health of the overall system. The potential changes we outline could bring significant benefits to the beneficiaries of Switzerland's occupational pension funds but adopting them will not be easy. Smaller pension funds in particular may struggle to implement the first three recommendations without merging or pooling activities with like-minded institutions. Lawmakers, meanwhile, will need time to debate, refine, and pass the legislation needed to create a regulatory environment that encourages and better enables second-pillar funds to upgrade their investment management practices.

Nevertheless, these reforms could be vital to securing the well-being of Switzerland's current and future retirees. The pension system's current strengths are worth preserving. We should start working to do so today.

Box 6
Interview with Jaap van Dam (PGGM, Netherlands)

Jaap van Dam
Principal Director Investment Strategy, PGGM

PGGM is the second-largest pension manager in the Netherlands, with roughly EUR 250 billion in assets. As such, it is a leading contributor to the success of the nation's pension system. Dutch pension funds not only enjoy some of the highest ratings in the Melbourne Mercer Global Pensions Index, but the Netherlands also delivered one of the highest rates of real net investment returns of all OECD countries over the past 10 years. We spoke with Jaap van Dam, PGGM's principal director of investment strategy and co-author of the book Achieving Investment Excellence: A Practical Guide for Trustees of Pension Funds, Endowments and Foundations, to get his thoughts on what drives success in pension management.

McKinsey: The Dutch pension system is often seen as a role model for other pension markets in Europe. What are the main reasons for this success in your view?

Jaap van Dam: There are several drivers. Dutch pension funds operate under an effective regulatory framework and with strong collective governance of employers, employees, and the government. They also benefit from highly skilled boards of trustees and professional pension administrators and managers. Additionally, there is a strong collaboration between pension practitioners and academics in the Netherlands.

McKinsey: Are these drivers the ultimate reasons behind the pension funds' high rates of real investment returns?

Jaap van Dam: Yes, in the sense that they have driven the fund's investment strategies. When you look at the investment performance of Dutch pension funds over the past 10 years, we benefitted in particular from our strong focus on liability-hedging strategies in the fixed income space, the larger exposure to private markets—especially among larger pension institutions—and the pension system's general cost efficiency. All these factors contributed to our high investment returns after costs.

McKinsey: Recent decades also saw significant consolidation within the Dutch pension industry as the number of pension institutions dropped from more than 1,000 in 1997 to just 268 in 2017. Pure coincidence, or is there a connection between industry consolidation and the strong performance?

Jaap van Dam: On the whole, industry consolidation definitely had a positive impact on the performance of Dutch pension funds. It facilitated the establishment of larger, more professional pension management institutions that have the necessary scale and skill to successfully operate in today's investment environment. They have the necessary capabilities to pursue sophisticated investment strategies and the negotiating power to deal at eye level with the largest commercial asset managers around the globe. They also are large enough to internalize the asset management of some asset classes or strategies, thus benefitting from lower costs.

McKinsey: So, scale matters, and consolidation is the way to achieve it in the pension space?

Jaap van Dam: Having a certain minimum scale definitely helps. There is a meaningful body of research showing that, on average, larger pension funds perform better than smaller ones, and that the dispersion of outcomes is bigger for smaller funds. Having said that, I think the scale advantage is most relevant for investments in private markets. In the public markets space, smaller funds can operate very effectively—both via internal management or through outsourcing. In the private markets sphere, on the other hand, you need significant scale to even start managing assets internally, and external management of alternative assets continues to be rather expensive.

McKinsey: You sound somewhat skeptical about the benefits of pension fund consolidation.

Jaap van Dam: Not skeptical, but I believe in being balanced. I do think that industry consolidation played a positive role overall in the Dutch pension system. But that consolidation also introduced a number of challenges. Multi-client pension management models are by design more complex than single-client models. They typically require stronger governance mechanisms than single-client models and need to carefully manage the risk of beneficiaries no longer feeling represented by their pension manager. It's critically important that pension managers identify with the needs and priorities of the trustees and beneficiaries they serve. They should behave like delegated asset owners and not like third-party service providers who are incentivized by the fees they earn. The more clients you serve, the more difficult it is to act like a delegated asset owner for all of them.

McKinsey: Can you elaborate on your point about multi-client models requiring stronger governance mechanisms?

Jaap van Dam: Finding the right governance balance between the board of trustees and the pension manager's executive team is probably the most difficult thing to get right in today's pension world. It's very important that roles and responsibilities are clearly defined and that all parties adhere to them in their daily operations. In reality, however, this can be challenging because trustees are typically less knowledgeable about investments than the pension manager's professional staff—even if they are highly educated and bring a lot of experience. Add to that the information asymmetry that characterizes delegated models and you see why trustee boards often find it difficult to strike the right balance between trust and oversight.

McKinsey: In your view, what are the biggest challenges resulting from this disparity in knowledge and information? What areas of collaboration between trustee boards and pension managers require the biggest improvements?

Jaap van Dam: Many boards of trustees run the risk of focusing too much on cost efficiency and on maintaining full control of their pension managers' activities. As a result, they under-delegate and they can end up pursuing overly conservative or otherwise suboptimal investment strategies. For example, if trustee boards define very granular allocations for their asset managers, they might feel more in control than if their strategic asset allocations prescribe only broad asset-class categories. At the same time, they may end up limiting their managers' ability to generate returns for the pension fund as well as their sense of responsibility for the overall result.

McKinsey: So, would you say that trustees are usually too risk averse?

Jaap van Dam: No, I don't think such a blanket statement would be true. Trustees have very different backgrounds and hence very different approaches to taking risk. But trustees are often incentivized to take less rather than more risk and to think of risk primarily as short-term volatility, which can create mark-to-market losses on a pension fund's investment portfolio. There are much fewer incentives for trustees to take a truly long-term perspective and balance concerns over short-term volatility with

a focus on the fund's ability to meet its obligations 15 or 20 years down the road. To some extent it is basic human psychology to concentrate more on the short term than the long term, and regulation and accounting rules do not help in this context.

McKinsey: What kind of changes would you like to see in regulation and accounting rules? And what else should be done to further improve collaboration between trustees and pension managers?

Jaap van Dam: I think that current regulatory and accounting rules in the Netherlands are indeed more conservative than they need to be. They treat pension funds too much like banks and do not reflect the reality of long-term pensions that are not liquidated on short notice. But that's only one area for potential improvement. If we want to further strengthen the collaboration between trustees and pension managers, better alignment of incentives and continued trustee education are the biggest levers. At the same time, pension managers need to become even better in providing trustees with full transparency and in more clearly communicating with their stakeholders, be they boards or the beneficiaries they ultimately serve.

Glossary

Conversion rate

The factor used to translate accrued pension savings into annuities at retirement. In Switzerland, the minimum conversion rate for the mandatory part of the second-pillar pension system is stipulated by law.

Dependency ratio (old age)

The number of individuals aged 65 and over per 100 people of working age (defined as those between 20 and 64 years of age).

Funding ratio

The ratio of a pension fund's available assets to liabilities. It reflects the fund's financial position based on its ability to pay out pensions in the future.

Gross value-add

The difference between a pension fund's achieved gross investment returns (i.e., investment returns before investment management costs) and its strategic asset allocation (SAA) benchmark return. It measures the fund's ability to outperform its SAA benchmark return (before costs).

Investment management costs

All costs related to the management of a pension fund's asset base, both incurred internally and paid to external managers or service providers. These costs account for the difference between a fund's gross and net investment returns.

Minimum net value-add

A metric created specifically for this paper to correct for sample bias as the three surveys used in the analysis are skewed toward larger and better-performing institutions. It represents the difference between market-average net investment returns (as reported by the OECD) and the SAA benchmark returns from the survey data for each country. It intentionally underestimates the net value-add that the average pension fund in each country achieves.

Net value-add

The difference between a pension fund's achieved net investment return and its SAA benchmark return. It measures the fund's ability to outperform its SAA benchmark return after accounting for investment management costs.

Pro forma SAA benchmark return

Calculated for Dutch and Canadian pension funds using their respective average annual allocations to different asset classes (as reported by CEM Benchmarking) and the same asset class-specific benchmark index returns used for the Swiss pension funds' SAA benchmark return calculation. The metric makes the SAA benchmark returns comparable across the three countries by excluding differences in returns driven by country-specific investment universes and currency regimes.

Replacement rate

The percentage of a worker's pre-retirement income that is covered by pension payouts. It measures a pension system's effectiveness at providing a retirement income to replace earnings.

SAA benchmark return

The performance contribution of a pension fund's strategic asset allocation based on the relative portfolio weights the SAA assigns to different asset classes in the fund's portfolio and the returns of broad benchmark indices for each asset class. It measures the return the fund would have generated had it taken a largely passive investment approach to each of the asset classes in which it invested.

Technical interest rate

The discount rate used to account for the expected return on retirement assets and technical provisions. It serves as a calculation assumption to estimate the minimum amount of interest a fund can pay on the capital set aside for pension payments.

Technical appendix

Scope and timeframe of the analysis

Our performance comparison focuses solely on the second-pillar pension system. For Switzerland, it includes both the mandatory and voluntary parts of the second-pillar pension system.

The analysis spans the period from the January 1, 2008, to December 31, 2018, covering 11 years. It was deliberately chosen in order to include the full impact of the 2008 financial crisis as well as the subsequent capital market recovery and so covers as much of a full market cycle as possible.

Unless explicitly stated otherwise, all average annual returns are calculated as compound annual growth rates (CAGR). All our analyses are based on real net investment returns in local currency.

Chapter 1

Second-pillar pension asset figures are based on data from the Swiss Federal Office for Statistics' pension fund statistics. We break down each year's reported total assets into regular employer and employee contributions, investment performance, and asset stock (Exhibit 4). The asset stock shown for a given year differs from the year-end AuM levels of the previous year because of pension payments, irregular contributions, and entry payments that are not split out individually in our analysis. The split of cumulative contributions over the 2008 to 2018 period shown in Exhibit 4 covers only investment performance and regular contributions from employers and employees.
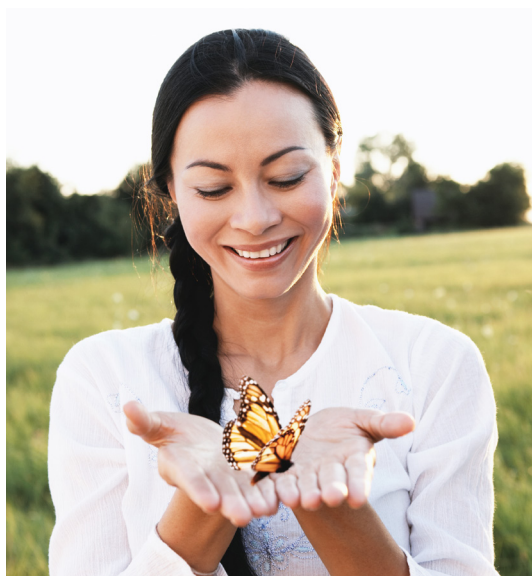
The comparison of countries based on Melbourne Mercer's Global Pension Index (MMGPI) scores (Exhibits 6, 7, and 8) uses Melbourne Mercer's reports for the years 2010 and 2019. Exhibits 6 and 7 show all countries included in the 2019 report, while Exhibit 8 covers only the countries included in both the 2010 and 2019 reports.

Chapter 2

Selection of countries for investment performance comparison

We compare Switzerland's second-pillar pension system to the Canadian and Dutch pension systems because the two pension systems delivered strong investment performance and share structural similarities with Switzerland's second-pillar pension scheme. All three countries have a well-funded second-pillar pension system. In 2018, pension assets in relation to GDP stood at 173 percent for the Netherlands, 155 percent for Canada, and 142 percent for Switzerland.[100] All three also rely primarily on defined-benefit pension arrangements, which represent between 95 percent and 100 percent of their pension structures.

Additionally, the three countries are in the Top 10 of the OECD's best-performing pension systems in terms of local currency-based average real net investment returns for the period 2008 to 2018. For countries with complete data for that period, Canada leads this ranking with an average return of 4.1 percent. The Netherlands are fourth with 3.6 percent, and Switzerland is ninth with 2.4 percent.[101] The trio is also among the world's 12 highest-ranked pension systems according to the 2019 MMGPI: the Netherlands is first, Canada ninth, and Switzerland at number 12.[102]

We exclude other countries that also delivered strong investment returns during the period of our study (such as Denmark, Australia, Germany, and the UK) because their pension systems differ significantly in structure from Switzerland's. While Denmark and Australia have funded pension systems that rely primarily on defined-contribution arrangements, Germany's pension system is mainly a pay-as-you-go scheme, so that funded pensions cover only a fraction of the country's total pension liabilities. We exclude the UK from our analysis because the country has not yet published 2018 pension performance data.

Data sources for investment performance comparison

Given the detail of our approach to comparing pension fund investment performance, we cannot rely solely on official data published by national bureaus of statistics or the OECD. Instead, we employ data from well-established, broad-based industry surveys for each of the three countries in question.

For Switzerland, we use data from Swisscanto's annual pension fund studies (Schweizer Pensionskassenstudie), whose most recent edition (2019) covers 531 institutions. These funds account for CHF 660 billion in aggregated pension assets—75 percent of the total market in 2018, according to the total from the Swiss Federal Office for Statistics. For Canada and the Netherlands, we use data from our strategic partner CEM Benchmarking, a global leader in performance benchmarking for pension funds and other institutional investors. CEM Benchmarking's database covers 22 Dutch and 75 Canadian pension funds in 2018, representing 72 percent and 69 percent, respectively, of the two countries' second-pillar pension assets (Exhibit 11).

All three surveys are skewed toward large and well-performing institutions. In 2018, assets per fund in the samples were CHF 1,243 million for Switzerland, CHF 17,573 million for Canada, and CHF 49,472 million for the Netherlands. These figures are significantly higher than the market averages for pension funds based on national statistics bureaus' data: CHF 560 million for Switzerland, CHF 309 million for Canada, and CHF 6,457 million for the Netherlands.

Average real net investment returns reported in the surveys over the 2008 to 2018 period show a similar slant. The returns in local currencies stand at 280 bps for Switzerland, 478 bps for Canada, and 406 bps for the Netherlands, while market averages based on OECD data are 242 bps, 411 bps, and 365 bps, respectively. The difference in average real net investment returns between our survey sample and the OECD market average is bigger for the Canadian and Dutch surveys (68 bps and 42 bps p.a.,[103] respectively) than for the Swiss sample, at 38 bps (Exhibit 11).

Our analyses use aggregated data from the three surveys, provided to us by Swisscanto Vorsorge AG and CEM Benchmarking. All survey data is reported on an asset-weighted basis to reflect the performance of the pension system in its entirety. Not all the datapoints used have been published elsewhere before.

Data used for investment performance comparison

To conduct the investment performance comparison between Swiss, Canadian, and Dutch second-pillar pension funds following the methodology outlined in Chapter 2, we use these data points for all three countries: annual average asset allocation, gross and net investment returns for the sample and the overall market from the OECD, each sample's SAA benchmark return, and the investment management costs. The CEM Benchmarking database captures all the necessary data points directly from its survey participants, requiring no additional calculations. The Swisscanto data set covers most of the required data points but does not include SAA benchmark returns, which we calculate ourselves (see "Methodology for calculation of SAA benchmark returns," below).

Methodology for calculation of SAA benchmark returns

Given that the Swisscanto pension fund study does not capture SAA benchmark returns for its survey participants, we calculate them based on the available asset allocation data, a set of broadly accepted, asset class-specific benchmark index returns for each asset class used, and the implied inflation rate based on the difference between the nominal and real investment returns reported by the OECD. We do so by calculating annual real SAA benchmark returns separately for each year of the 2008 to 2018 period and then calculating the CAGR for the entire period based on all annual returns.

For our benchmark index returns by asset class we use unhedged total return indices wherever possible. We calculate the foreign exchange impact on the real returns of each index denominated in a foreign currency by converting the annual real returns to Swiss francs using that year's currency return. Each year's currency return is calculated as the percentage change between the exchange rate on January 1 and December 31 based on data from Capital IQ. Accordingly, benchmark returns of indices denominated in foreign currencies before currency conversion reflect unhedged foreign currency positions. Any effect of hedging on investment returns, such as hedging costs, is therefore a component of the gross value-add performance.

Granularity of asset allocation used in SAA benchmark return calculation

The Swisscanto survey data contains detailed information on the average asset allocation by Swiss pensions funds. In order to construct benchmarks and compare asset classes between Swiss funds and their Canadian and Dutch peers, we apply minor adjustments to the Swisscanto asset mix data. We use ten asset classes: cash and equivalents, domestic fixed income (which also includes loans, investments in employer, and mortgages), international fixed income, domestic equity, international equity, domestic real estate, international real estate, private equity, hedge funds, and infrastructure. Swisscanto's categories "other non-traditional investments at face value," "other alternative investments," "other," and "commodities"—which together comprise 4.4 percent of the assets on average—are blended proportionally into the other asset classes because the first three categories lack adequate benchmark indices and CEM Benchmarking's data does not include a separate commodity category.

As noted above, the Swisscanto data splits equities, fixed income, and real estate asset classes into domestic and international holdings but does not specify in which currencies or markets the international portions are invested. Hence, we use broad global indices for the international parts of these asset allocations (see "Benchmark indices used," below). Following Swisscanto's methodology employed in its pension fund report Pensionskassen-Monitor, we furthermore assume that Swiss domestic real estate investments are divided equally between direct and indirect investments using separate indices.[104]

Benchmark indices used for SAA benchmark return calculation

To calculate the Swiss SAA benchmark return, we rely on broadly accepted benchmark indices for each asset class, largely in line with other publications that have performed similar calculations for Swiss pension funds.[105] The following table summarizes asset classes, indices employed, and currency denominations.

We deviate from Ammann and Ehmann's[106] selected indices for three asset classes— international real estate, private equity, and infrastructure—and neither Swisscanto nor Credit Suisse specify indices for these asset classes. Our indices track direct investments while Amman and Ehmann's indices track listed investments. We consider direct investment indices to be more appropriate because pension fund investments typically include a sizeable share of direct investments (see "Sensitivity of results to the choice of benchmark index," below).

We acknowledge that the choice of asset class-specific benchmark indices can significantly influence the results of SAA benchmark return calculations. We therefore analyze the sensitivity of our results to the choice of benchmarks in key asset classes.

Asset class	Index	Description[107]	Currency
Cash and equiva-lents	IBA CHF LIBOR 3 months	The average interest rate at which a panel of selected banks are prepared to lend to one another in Swiss francs with a maturity of three months.	CHF
Domestic fixed income	Swiss Bond Index (SBI) AAA-BBB (all maturities)	The index tracks the price developments of Swiss-franc-denominated bonds listed on the Swiss Stock Exchange. The SBI AAA-BBB specifically tracks bonds with ratings of BBB or higher that meet certain inclusion criteria.	CHF
International fixed income	Bloomberg Barclays Global Aggregate Index (all maturi-ties)	The index measures global investment-grade debt in 24 currency markets. The multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed- and emerging-market issuers.	USD
Domestic equity	Swiss Performance Index (SPI)	Considered Switzerland's main stock market index, it primarily tracks equity securities of companies listed on the SIX Swiss Exchange with a free float of at least 20% and excludes investment companies.	CHF
International equity	MSCI AC World ex CH Index	The index tracks equity securities of large- and mid-cap stocks in 23 developed and 26 emerging markets. Our selected version of this index excludes Swiss stocks.	USD
Domestic direct real estate	KGAST Immo Index	The index measures the performance of direct, non-list-ed investments in Switzerland of real estate investment groups from members of the Conference of Managers of Investment Trusts (Konferenz der Geschäftsführer von Anlagestiftungen [KGAST]). Only investment trusts with real estate investments in Switzerland are included. At present, the index comprises 34 investment trusts.	CHF
Domestic indirect real estate	DB Rüd Blass Swiss Real Estate Fund Index	The index tracks 10 Swiss real estate funds.	CHF
International real estate	MSCI Global Annual Property Index	The index measures unlevered total returns of directly held standing property investments. Weighting between markets is done by market size. The index tracks the performance of 55,675 property investments (as of December 2018).	USD
Private equity	Cambridge Associates Global Private Equity Index	The index is based on data from more than 2,100 insti-tutional-quality global private equity funds. The data is sourced directly from quarterly financial statements and annual audited financial statements from private invest-ment funds. The index returns are constructed using the underlying cash flows and NAVs for each fund and portfo-lio company.	CHF
Hedge funds	HFRX Global Hedge Fund Index	The index is representative of the overall composition of the hedge fund universe, comprising all eligible hedge fund strategies, including convertible arbitrage, distressed securities, equity hedge, equity market neutral, and event-driven. It selects constituents char-acterized by relatively low volatility and correlation to standard directional benchmarks of equity market and hedge fund industry performance.	USD
Infrastructure	EDHEC Infra Global Private Infrastructure Equity Index	This value-weighted index tracks global unlisted infra-structure equity. It is a market value-weighted rep-resentation of the global private infrastructure equity market covering all investable infrastructure sectors. Index constituents include all business models.	USD

Methodology for net value-add and minimum net value-add calculations

We calculate the net value-add of Swiss second-pillar pension funds by subtracting the calculated SAA benchmark return from the sample's net investment return as reported by Swisscanto. We apply the same approach for Canadian and Dutch funds using the SAA benchmark and net investment returns from the respective CEM Benchmarking surveys. The resulting net value-adds are -71 bps for Switzerland, 6 bps for Canada, and 19 bps for the Netherlands, producing a gap of 77 bps between Swiss and Canadian funds and 90 bps between Swiss and Dutch funds.

To correct the survey samples' slant toward larger and better-performing funds in all three countries, we also calculate the gap in minimum net value-add between Switzerland and its peer countries. We define a country's minimum net value-add as the difference between its pension funds' average real net return for the 2008 to 2018 period as reported by the OECD, and the real SAA benchmark returns based on our survey data. The resulting minimum net value-adds are -109 bps for Switzerland, -61 bps for Canada, and -22 bps for the Netherlands, leading to a minimum net value-add gap of 48 bps between Swiss and Canadian funds, and 87 bps between Swiss and Dutch funds.

Both analyses deliver directionally consistent results even if their magnitude differs (i.e., Dutch funds have the highest net value-add, followed by Canadian and Swiss funds). We calculate the average of the two net value-add gaps to quantify the actual gap in net value-add performance, rounding the result (e.g., for Canada [77+48]/2 = 62.5 rounded to 60.0). We arrive at a net value-add gap of 60 bps p.a. between Swiss and Canadian funds and 90 bps p.a. between Swiss and Dutch funds (Exhibit 15).

Methodology for comparing Swiss and pro forma Dutch/Canadian SAA benchmark returns

In the second step of our investment performance comparison, we analyze Swiss second-pillar pension funds' SAA benchmark returns and examine the extent to which the benchmark returns could have been higher had Swiss funds mirrored the SAAs of Canadian and Dutch institutions. To avoid reintroducing the distortive impact of differing investment environments and currency regimes (as discussed in Box 2), we compare the SAA benchmark returns of Swiss funds with pro forma (rather than actual) SAA benchmark returns for their foreign counterparts.

The pro forma SAA benchmark returns of Canadian and Dutch pension funds are calculated based on their actual strategic asset allocations and the benchmark indices used in calculating the Swiss SAA

benchmark returns (see "Benchmark indices used," above). We map CEM Benchmarking's reported asset allocations to the ten asset classes from Swisscanto's survey (see "Granularity of asset allocation," above). In doing so, we proportionally blend the categories "other real assets" and "other assets" over all remaining asset classes. Furthermore, we split the fixed income, equities, and real estate asset classes into international and domestic segments, keeping the foreign exchange exposure of Swiss funds constant (see "Treatment of Swiss pension funds' foreign exchange exposure," below). Although the domestic asset classes refer to investments within each country, we use the Swiss benchmark indices in order to make the results comparable.

In line with the calculation of the Swiss SAA benchmark return (see "Methodology for calculation of SAA benchmark returns," above), we calculate the Canadian and Dutch pro forma SAA benchmark returns for each year using the average annual asset allocation for each asset class (i.e., the average of the beginning-of-year and end-of-year values), the corresponding benchmark index returns per asset class, and the implied inflation rate based on the difference between the nominal and real investment returns reported by the OECD.

Treatment of Swiss pension funds' foreign exchange exposure in comparing pro forma SAA benchmark returns

We use foreign-exchange-denominated benchmark indices for five asset classes: international fixed income, international equities, international real estate, infrastructure, and hedge funds. Based on Swisscanto's data, Swiss pension funds' average share of these five categories over the 2008 to 2018 period is 39 percent. To avoid introducing additional foreign exchange risk in our pro forma SAA return comparison, we cap the total exposure to these asset classes for Canadian and Dutch funds at 39 percent as well.

In doing so, we first reflect Dutch and Canadian pension funds' actual asset allocations to infrastructure and hedge funds (which average 5.1 percent for Dutch funds and 8.1 percent for Canadian funds over the 2008 to 2018 period). We then split the fixed income, equities and real estate allocations of Dutch and Canadian pension funds (as reported by CEM Benchmarking) into domestic and international allocations. We do so in a way that by and large reflects the split of domestic vs. international investments that Swiss second-pillar pension funds have in each of these asset classes, while ensuring that total allocations to international investments in these three categories do not exceed 33.9 percent (=39.0 percent minus 5.1 percent in infrastructure and hedge funds) for Dutch funds and 30.9 percent (=39.0 per-

cent minus 8.1 percent) for Canadian institutions. In concrete terms, this means that we start with a split between domestic and international investments in each of the three asset classes that reflects the split observed among Swiss funds and then proportionally correct downward the international allocations across three asset classes until we reach the 33.9 percent and 30.9 percent thresholds, respectively.

Sensitivity of results to the choice of benchmark index

There are numerous applicable benchmark indices for each individual asset class, and we acknowledge that index selection determines the benchmark return and consequently could affect our results. While there is a clear choice of indices for some asset classes (i.e., cash and equivalents, Swiss fixed income, Swiss equity, and hedge funds), the choice for other classes is less evident. To ensure our index selection in these asset classes does not skew the results, we conduct sensitivity analyses that compare our results to the outcomes that different indices for these asset classes would yield. In the following, we conduct a total of six sensitivity analyses for the following asset classes: international equity, domestic direct real estate, domestic indirect real estate, international real estate, private equity and infrastructure. The indices selected for these comparisons have either been used frequently in other Swiss pension fund studies[108] or are adequate substitutes.

To isolate the effect of each alternative index, we change the index for one asset class at a time. We compare the outcome with our final result for the Swiss SAA benchmark return, the Swiss average net value-add, the average net value-add gap, and the investment performance total gap between Swiss pension funds and their Canadian and Dutch counterparts.

For international equity, domestic direct real estate and domestic indirect real estate, the indices we use in our study yield either the same or lower returns over the 2008 to 2018 period than the alternative indices used for sensitivity comparison. Our selected indices' lower returns result in lower Swiss SAA benchmark returns, leading to higher net value-adds for Swiss funds and, in turn, lower net value-add gaps in comparison with Canadian and Dutch funds. Since the outcomes using alternative indices for these three asset classes produce similar or higher average net value-add and total gaps, our chosen indices show a more positive picture for Swiss funds and are thus relatively conservative.

While our selected indices for international real estate, private equity, and infrastructure yield higher returns than those we use in the sensitivity comparison, the impact on the results of our net value-add comparisons is minimal. By choosing any of the alternative indices, we could lower the observed net value-add gaps to Dutch and Canadian peer institutions by a maximum of 4 bps p.a.. The small difference is due to the insignificant share of the total asset mix that these asset classes comprise in Swiss pension funds (less than 2 percent during the 2008 to 2018 period).

However, due to Canadian and Dutch pension funds' higher shares of investments in private equity and infrastructure, using alternative indices for these asset classes would affect the results of the pro forma SAA comparison and consequently the total gap. The gap with Canadian pension funds drops by 10 bps p.a. (of which 2 bps is attributable to net value-add change) when using the LPX Composite Listed Private Equity Index, and by 33 bps p.a. (1 bps due to net value-add) when using the MSCI World Infrastructure Index. The asset mix differences between Swiss and Dutch pension funds are less pronounced for these two asset classes than between Swiss and Canadian funds. As a result, the total gap based on the alternative private equity index remains unchanged. Changing the infrastructure index reduces the total gap between Dutch and Swiss funds by 8 bps, of which 1 bps is attributable to the net value-add change.

Although using alternative indices for private equity and infrastructure asset classes reduces the total performance gap between Swiss funds and their foreign counterparts, we believe our selected indices are the better choices. The MSCI World Infrastructure Index tracks only listed companies, whereas the EDHEC Infra Global Private Infrastructure Equity Index used in our study also includes direct infrastructure investments, which is what most pension funds are really after when allocating funds to this asset class. In a similar vein, the LPX Composite Listed Private Equity Index is based on listed private equity, while our selected Cambridge Associates Global Private Equity Index sources data from the financial statements of 2,100 institutional-quality global private equity funds.

The results of the sensitivity analysis for each asset class are summarized in the tables below. In each of the tables we have highlighted the index that we are using in our calculations.

International equity

Index	Average CHF return 2008-2018, percent	Swiss SAA benchmark return, bps	Swiss average NVA, bps	CA vs. CH		NL vs. CH	
				Average net value-add gap, bps	Average total gap, bps	Average net value-add, bps	Average total gap, bps
MSCI AC World ex CH Index (USD)	2.2	351	-90	62	115	88	62
MSCI World Index (USD)	2.7	358	-97	69	122	95	69
MSCI AC World Index (USD)	2.2	351	-90	62	115	88	62

Domestic direct real estate

Index	Average CHF return 2008-2018, percent	Swiss SAA benchmark return, bps	Swiss average NVA, bps	CA vs. CH		NL vs. CH	
				Average net value-add gap, bps	Average total gap, bps	Average net value-add, bps	Average total gap, bps
KGAST Immo Index (CHF)	5.5	351	-90	62	115	88	62
SXI Swiss Real Estate (CHF)	6.6	359	-98	70	120	96	65
MSCI IPD/ Wüest & Partner Switzerland Annual Property Index (CHF)	6.2	357	-96	69	119	94	64

Domestic indirect real estate

Index	Average CHF return 2008-2018, percent	Swiss SAA benchmark return, bps	Swiss average NVA, bps	CA vs. CH		NL vs. CH	
				Average net value-add gap, bps	Average total gap, bps	Average net value-add, bps	Average total gap, bps
DB Rüd Blass Swiss Real Estate Fund Index (CHF)	5.8	351	-90	62	115	88	62
SXI Swiss Real Estate (CHF)	6.6	358	-97	70	119	95	64

International real estate

Index	Average CHF return 2008-2018, percent	Swiss SAA benchmark return, bps	Swiss average NVA, bps	CA vs. CH		NL vs. CH	
				Average net value-add gap, bps	Average total gap, bps	Average net value-add, bps	Average total gap, bps
MSCI Global Annual Property Index (USD)	4.0	351	-90	62	115	88	62
Dow Jones Global Select Real Estate Securities Index (USD)	2.2	347	-86	59	111	85	58
MSCI World Real Estate (USD)	1.6	347	-86	58	111	84	58
FTSE EPRA Nareit Global (USD)	1.3	347	-86	58	111	84	57

Private equity

Index	Average CHF return 2008-2018, percent	Swiss SAA benchmark return, bps	Swiss average NVA, bps	CA vs. CH		NL vs. CH	
				Average net value-add gap, bps	Average total gap, bps	Average net value-add, bps	Average total gap, bps
Cambridge Associates Global Index (CHF)	7.9	351	-90	62	115	88	62
LPX Composite Listed Private Equity Index (CHF)	4.0	349	-88	60	105	86	62

Infrastructure

Index	Average CHF return 2008-2018, percent	Swiss SAA benchmark return, bps	Swiss average NVA, bps	CA vs. CH		NL vs. CH	
				Average net value-add gap, bps	Average total gap, bps	Average net value-add, bps	Average total gap, bps
EDHEC Infra Global Private Infrastructure Equity Index (USD)	8.8	351	-90	62	115	88	62
MSCI World Infrastructure (USD)	0.8	350	-89	61	82	87	54

Benchmarking investment-management costs (Box 4)

We aim to compare actually incurred investment management costs of Swiss funds to the (hypothetical) investment management costs that Dutch and Canadian funds would have incurred had they used the same asset allocations as Swiss funds. To do so, we use asset class-level cost data from CEM Benchmarking and calculate weighted average investment management costs that reflect the weights of Swiss funds' asset allocation for 2018.

In doing so, we use asset allocation data that is more detailed than the ten asset classes used in the other analyses. The additional asset classes include: mortgages, commodities, non-traditional nominal-value investments, other alternatives, and others. These categories have exact matches in CEM Benchmarking and Swisscanto survey samples except for CEM Benchmarking's nontraditional nominal-value investments, which we match with Swisscanto's "other nontraditional [investments] at face value." We use the figures for "domestic" asset classes in multiple cases despite their application to different types of investments (e.g., Swiss fixed income vs. European fixed income vs. Canadian fixed income). We compare the resulting weighted investment management costs for the sampled Canadian and Dutch pension funds with the average costs for Swiss funds during the period of 2013 to 2018 (for which data was available) based on Swisscanto's sample. The resulting cost gap between Swiss and Canadian or Dutch funds suggests Swiss funds have considerable potential for improvement (Exhibit 17).

Investment risk comparison (Box 5)

We measure investment risk associated with the average asset allocations of Swiss, Canadian, and Dutch second-pillar pension funds by assessing the volatility of their SAA benchmark returns over the 2008 to 2018 period. We compare the volatility of the three groups' asset allocations using the same indices and methodology employed to calculate the Swiss SAA benchmark return and the pro forma SAA benchmark returns for Canada and the Netherlands.

We calculate the excess returns per asset class by comparing each year's return difference with the CAGR for the whole 2008 to 2018 period. Based on the excess returns, we create a variance-covariance matrix for each country, then use the average asset allocations per country to derive the variance of the portfolio and subsequently its volatility (i.e., the standard deviation).

Chapter 3

Value creation through better investment performance

Scenario 1

Using the Swiss Federal Office for Statistics' annual pension fund data, we calculate the additional capital that Swiss second-pillar pension funds would have accumulated at the higher rates of investment return that Canadian and Dutch pension funds registered during the 2008 to 2018 period. We assume that higher investment returns would not have had any impact on employees' and employers' pension contributions or outflows and hence keep the respective numbers unchanged (i.e., as reported for the years 2008 to 2018). We then apply a simple capital accumulation calculation in which we add the constant employee and employer contributions, outflows, Swiss funds' achieved investment income, and the additional investment income Swiss funds would have accumulated each year at the Canadian or Dutch level of investment performance to the capital base of the previous year. Since second-pillar payments occur monthly, we assume that half of the net annual contributions and outflows deliver a return during the contribution year.

We apply this approach to all years for the full 2008 to 2018 period. The difference between Swiss pension funds' actual final assets in 2018 compared to the results of this calculation represents the additional return potential.

Scenario 2

Building on the calculations from Scenario 1, we calculate the amount by which Swiss decision-makers could have reduced employers' and employees' combined pension contributions over the 2008 to 2018 period without affecting total pension assets at 2018 year-end, if Swiss second-pillar pension funds had delivered investment results in line with their international peers. To do so, we simply take the CHF 50 billion to CHF 95 billion in additional pension assets that peer-level investment performance would have created and deduct it from employers' and employees' actually observed cumulated pension contributions over the eleven years in question. Given that total cumulated pension contributions from both parties between 2008 and 2018 amounted to CHF 452 billion in total, this corresponds with an 11 percent to 21 percent reduction over the time frame in question. We then apply this reduction to the average contribution rate of 18.7 percent (in 2017, the most recently available data from Swiss Social Insurance Statistic) and arrive at the percentage-point decreases in the average contribution rate that would have resulted from these higher investment returns.

Implication of higher investment performance for a representative worker

Scenario 3

We use a simplified calculation to estimate the effect that an investment performance in line with peers would have on the pension savings accumulation over the full working life of an average Swiss employee. We assume that the employee works for 40 years, from age 25 to 65 (i.e., Switzerland's official retirement age for men). Each year, the employee earns the weighted average median income between males and females corresponding to the age group he or she is in. We differentiate the following four age groups: 20 to 29, 30 to 39, 40 to 49, and 50 to 65. The median wages of males and females are weighted by the gender's respective share of the working population.[109]

Median monthly income per age group

Age group	Female	Male	Weighted	Annualized average
20-29	4,834	5,194	5,029	60,351
30-39	5,938	6,471	6,227	74,725
40-49	6,063	7,233	6,698	80,371
50-65	6,057	7,441	6,808	81,692

The resulting representative annual income ranges from CHF 60,351 at ages 20 to 29 to CHF 81,692 in the 60 to 65 age bracket. The income used for calculating second-pillar contributions results from subtracting the CHF 24,885 allowance (Koordinationsabzug) from the worker's annual income. In each year of an employee's working life, he or she pays an age-dependent share of income in pension contributions. We use the current mandatory contribution rates of 7 percent for ages 25 to 34, 10 percent for ages 35 to 44, 15 percent for ages 45 to 54, and 18 percent for ages 55 to 65.

We apply a simple capital accumulation calculation in which the pension contributions accrue at a constant interest rate each year, with the resulting gains added to the capital base. Since payments are made monthly, we assume that half of the annual contributions deliver interest during the contribution year. We also assume the accumulation process continues until age 65 without any withdrawals.

We derive the potential additional capital by comparing the pension assets at age 65 resulting from a fixed return of 2.8 percent per annum (i.e., the Swiss average real net return as per Swisscanto's sample data during our study period) with the capital accumulation at a fixed return of 4.0 percent and 3.4 percent, reflecting Swiss pension funds' estimated performance gap with Canadian and Dutch peers, respectively. The resulting additional capital is translated into an annual pension by applying the current capital-to-pension conversion rate of 6.8 percent.

Scenario 4

Building on the calculation from Scenario 3 and assuming daily payment of both contributions and interest, we calculate how much longer a typical Swiss employee would have to work to reach the capital accumulation yielded by investment returns at the levels of the two comparison countries at age 65. Therefore, we extend the asset accumulation process for Swiss funds beyond the age of 65, calculating the day in the future when the average Swiss employee's accumulated pension assets equal the accumulated assets that he or she would have at age 65 if Swiss second-pillar pension funds delivered investment performance in line with their Canadian and Dutch peer institutions. Reaching the assets accumulated at Canadian-level investment returns at age 65 would take four years and 123 days (i.e., approximately 4.3 years), while it would take two years and 96 days (roughly 2.3 years) to reach the assets accumulated at Dutch-level returns.

Chapter 4

We rely on multiple sources to compile league tables of the 15 biggest pension funds in terms of assets. For Switzerland, we use Investment and Pensions Europe magazine's 2019 ranking of top pension funds as the starting point.[110] We compile the asset data as of December 31, 2018, from annual reports and official publications to create the top 15. We exclude Compenswiss as it covers first-pillar assets only.

For the list of the 15 biggest Dutch funds, we use data from the Dutch National Bank. It covers reported invested capital which consists of investments for the pension fund's risk, investments for the members' risk, and reinsured technical reserves.[111] For Canada, we use data from Willis Towers Watson and its Thinking Ahead Institute on the top global pension funds and Canadian Institutional Investment Network's Benefits Canada top pension funds ranking, and combine it with our own research.[112] The assets data is based on annual reports and other official publications. The value of the Canadian and Dutch funds' assets is converted to Swiss francs at the Swiss Federal Tax Authority's exchange rate for December 31, 2018.

We calculate the concentration of the top 15 pension funds in each country using official pension asset data from the Swiss Federal Office for Statistics, the Dutch National Bank, and Statistics Canada, respectively. The Swiss data encompasses all second-pillar pension assets as per the Pension Fund Statistic.[113] For the Netherlands, total assets equal the sum of invested capital reported for all pension funds.[114] For Canada, the asset base consists of the assets of the Canadian and Quebecois pension plans as well as all employer-based pension assets.[115]

Footnotes

1. Technical interest rates according to Swisscanto Vorsorge AG – unpublished data gathered for "Schweizer Pensionskassenstudien"; conversion rate numbers refer to the rates for men retiring at the formal retirement age of 65; Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2017, swisscanto.com, p. 44; Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2018, swisscanto.com, p. 23; Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2019, swisscanto.com, p. 4, 29, 65.

2. OECD Economic Surveys: Switzerland 2019, OECD, November 2019, oecd.org, p. 75.

3. Manuel Ammann, Christian Ehmann, Is Governance Related to Investment Performance and Asset Allocation? Empirical Evidence from Swiss Pension Funds, Working Papers on Finance No. 2016/23, University of St. Gallen, September 2016, p. 19.

4. We consistently look at the period from January 1, 2008 until December 31, 2018, considering a 11-year period. Hence, we use either full data for 2008 or where applicable 2007 year-end data as the starting point.

5. Eurostat, European Commission, December 2019, ec.europa.eu/eurostat.

6. Based on the International Labour Organisation's unemployment definition. Analysis based on Eurostat, European Commission, December 2019, ec.europa.eu/eurostat.

7. Pensions at a Glance 2019: OECD and G20 Indicators, OECD, oecd.org, p. 138.

8. Defined as the number of people aged 65 and over per 100 people of working age (defined as those aged between 15 and 64); OECD.Stat, Pensions at a Glance, OECD, December 2019, stats.oecd.org.

9. FRED, Federal Reserve Bank of St. Louis, December 2019, fred.stlouisfed.org.

10. With the exception of the first quarter of 2018, in which Japan's bond rate was 0.03 percentage point lower.

11. Swisscanto Vorsorge AG – unpublished data gathered for its "Schweizer Pensionskassenstudien".

12. Numbers refer to the conversion rates for men retiring at the formal retirement age of 65; Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2017, swisscanto.com, p. 44; Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2019, swisscanto.com, pp. 4, 65.

13. Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2019, swisscanto.com, p. 7.

14. Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2019, swisscanto.com, p. 26; Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2018, swisscanto.com, p. 23.

15. Most industry observers would agree that the current minimum conversion rate is too high and will have to be reduced in order to strengthen the sustainability of the system; see OECD Economic Surveys: Switzerland 2019, OECD, November 2019, oecd.org, p. 83 (among other sources).

16. "Oberaufsichtskommission Berufliche Vorsorge (OAK BV)" in German; "Commission de haute surveillance de la prévoyance professionnelle (CHS PP)" in French.

17. Bericht finanzielle Lage der Vorsorgeeinrichtungen 2018, Oberaufsichtskommission Berufliche Vorsorge OAK BV, May 2019, oak-bv.admin.ch, p. 30.

18. Employed individuals starting on the 1st of January after reaching the age of 17; non working individuals starting on the 1st of January after reaching the age of 20.

19. OECD Economic Surveys: Switzerland 2019, OECD, November 2019, oecd.org, p. 83, 88.

20. Pension markets in focus 2019, OECD, 2019, oecd.org, p. 72; McKinsey analysis for pension assets per capita using pension asset data from Pension Markets in Focus 2019, OECD, 2019, oecd.org, p. 70 and population data from The World Bank data, Population, The World Bank Group, December 2019, data.worldbank.org.

21. Starting with 2007 year-end figures.

22. Pensionskassenstatistik, Swiss Federal Office for Statistics, bfs.admin.ch.

23. Eurostat, European Commission, December 2019, ec.europa.eu/eurostat; Entwicklung der Nominallöhne, der Konsumentenpreise und der Reallöhne, Swiss Federal Office for Statistics, April 2019, bfs.admin.ch.

24. The split between employers and employee contributions remained fairly constant over the same period, with employers accounting for roughly 60 percent of the total and employees accounting for roughly 40 percent; Pensionskassenstatistik 2018, Swiss Federal Office for Statistics, December 2019, bfs.admin.ch.

25. Melbourne Mercer Global Pension Index 2019, Monash Centre for Financial Studies, 2019, mercer.com.au, p. 7.

26. Melbourne Mercer Global Pension Index 2018, Australian Centre for Financial Studies, 2018, info.mercer.com, p. 9.

27. Noteworthy exceptions are selected northwestern European countries—namely Denmark, the Netherlands, and Sweden—that score high on both dimensions.

28. Defined as the share of adult population living in houses or apartments they owned; Distribution of population by tenure status, type of household and income group, Eurostat, European Commission, January 2020, eurostat.ec.europa.eu.

29. OECD Data: household debt (indicator), OECD, January 2020, data.oecd.org.

30. Pensions at a Glance 2017: How does Switzerland compare? OECD, December 2017, oecd.org.

31. OECD Economic Surveys: Switzerland 2019, OECD, November 2019, oecd.org, p. 88.

32. OECD Better Life Index, OECD, December 2019, oecdbetterlifeindex.org.

33. Measured in USD constant prices using 2016 base year and purchasing power parities for private consumption of the same year; OECD data: average wages (indicator), OECD, January 2020, data.oecd.org.

34. OECD Economic Surveys: Switzerland 2019, OECD, November 2019, oecd.org, p. 11.

35. OECD Economic Surveys: Switzerland 2019, OECD, November 2019, oecd.org, p. 75.

36. Bedeutung der kapitalgedeckten Vorsorge: Lagebeurteilung und Entwicklung, ASIP, Schweizerischer Pensionskassenverband, May 2018, asip.ch.

37. Bedeutung der kapitalgedeckten Vorsorge: Lagebeurteilung und Entwicklung, ASIP, Schweizerischer Pensionskassenverband, May 2018, asip.ch, pp. 44–5, 53.

38. In Credit Suisse's "Sorgenbarometer 2018", 45 percent of survey participants mentioned «Pillar 1 and pension» as one of the country's top 5 problems. This was the highest share reached by any theme or topic in the survey; Credit Suisse Bulletin 3/2018, Credit Suisse Sorgenbarometer 2018, Credit Suisse, March 2018, credit-suisse.com, p. 54.

39. Thomas Schürpf, "Rentenalter 65 für Frauen – Bundesrat will den Schritt mit 700 Millionen abfedern", Neue Zürcher Zeitung, 28. August 2019, nzz.ch.

40. OECD Economic Surveys: Switzerland 2019, OECD, November 2019, oecd.org, p. 77.

41. Le Taux de Conversion, Helvetia, 2018, helvetia.com, p. 13.

42. OECD Economic Surveys: Switzerland 2019, OECD, November 2019, oecd.org, p. 84.

43. Melbourne Mercer's integrity sub-index includes several items influencing the overall governance and operations of the system: the role of regulation and governance, the protection provided to plan members for a range of risks, the level of communication provided to individuals, and the operating costs. These factors affect citizen's level of confidence in their systems; Melbourne Mercer Global Pension Index 2019, Monash Centre for Financial Studies, 2019, mercer.com.au, p. 5, 7, 16; Melbourne Mercer Global Pension Index 2010, Australian Centre for Financial Studies, October 2010, p. 8.

44. Pensions at a Glance 2017: OECD and G20 Indicators, OECD, 2017, oecd.org, p. 123.

45 . Dr. J. Schüpbach, Livio Fischbach, Zweite Säule: Wachsendes Gefälle zwischen den Generationen, Credit Suisse, October 2019, credit-suisse.com, p. 13.

46. For more, see "The Future of Work: Switzerland's Digital Opportunity," McKinsey Global Institute, October 2018, McKinsey.com.

47. For more, see "Why Investors May Need to Lower their Expectations," McKinsey Global Institute, April 2016, McKinsey.com.

48. Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2019, swisscanto.com, p. 44, 49; Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2018, swisscanto.com, p. 41–2.

49. Ranking includes all countries for which the full investment return data series 2008-2018 is available. Exhibit 10 only includes selected countries from this list, so that ranks quoted here might differ from the implied ranks in Exhibit 10. McKinsey analysis using data from Pension Markets in Focus 2019, OECD, 2019, oecd.org, p. 80.

50. Exhibit 10 shows the UK as the highest performing pension systems within the OECD, with a compound annual growth rate (CAGR) of 5.3 percent. This number, however, only covers the 2008-2017 period, omitting the challenging year 2018, for which no official UK data has been published so far. It is to be expected that the CAGR for the 2008-2018 period will be lower than for the 2008-2017 period, which is why we do not include the UK results in our comparison.

51. Keith P. Ambachtsheer, The Future of Pension Management, Hoboken, NJ: John Wiley & Sons, 2016, p. 137.

52. Manuel Ammann, Christian Ehmann, Is Governance Related to Investment Performance and Asset Allocation? Empirical Evidence from Swiss Pension Funds, Working Papers on Finance No. 2016/23, University of St. Gallen, September 2016.

53. The Netherlands ranks #1, Canada ranks #9, and Switzerland ranks #12; Melbourne Mercer Global Pension Index 2019, Monash Centre for Financial Studies, 2019, mercer.com.au, p. 7.

54. This is true because the minimum net value-add calculation as described above compares market-average net investment returns to SAA benchmark returns that correspond with a more "aggressive" asset allocation than the average pension fund would typically pursue. SAA benchmark returns will therefore be higher than they would be for the market-average pension fund, so that the minimum net value-add in turn will be lower. With performance differences being more pronounced in Canada and the Netherlands than in Switzerland, the minimum net value-add will be more significantly underestimated in the two comparison countries than in Switzerland. Accordingly, a comparison of the minimum net value-add can be seen as a conservative "lower bound" estimate of the actual net value-add differential between Switzerland and its two peer countries.

55. See Credit Suisse Swiss Pension Fund Index Q4 2018, Credit Suisse, 2019, credit-suisse.com, p.6; Pensionskassen-Monitor der Swisscanto Vorsorge AG, Swisscanto Vorsorge AG, June 2019, swisscanto.com, p.3; Manuel Ammann, Christian Ehmann, Is governance related to investment Performance and Asset Allocation? Empirical Evidence from Swiss Pension Funds, Working Papers on Finance No. 2016/23, University of St. Gallen, September 2016, p. 33. A list of the indices used including a brief description of each, can be found in the Technical Appendix. Furthermore, the Technical Appendix explores the sensitivity of our results to changes in benchmark indices used.

56. This is not surprising, given that our minimum net value-add methodology compares the SAA benchmark returns of a subset of higher-performing pension funds in each country with the achieved net investment returns for the market average. As explained in Box 3, this methodology by design underestimates the achieved net value-add of the average pension fund in each of the countries.

57. The above statement may seem to ignore the impact of investment management costs, because any Swiss investor who wished to invest into our calculated SAA benchmark would also incur costs in doing so. The statement is nevertheless correct, because Swiss second-pillar pension funds in the sample on average underperformed their SAA benchmarks by 71 bps p.a., while investment management costs only amounted to 48 bps p.a. (see Exhibit 16). As such, Swiss pension funds' underperformance compared to the SAA benchmarks before investment costs was 23 bps p.a.

58. The actual improvement potential would have been 53 bps p.a.; we use rounded numbers for the sake of simplicity.

59. The actual investment performance reduction would have been 26 bps p.a. to be precise. Also, here we are using rounded numbers. We round up to -30 bps rather than -25 bps, because we also rounded up the net value-add gap in the previous section and want to avoid distorting the aggregate result.

60. This result should not be misinterpreted as suggesting that Dutch pension funds on average delivered lower SAA benchmark returns than their Swiss peer institutions. That is only true in the context of a CHF-based investor that operates in an investment universe best described by the benchmark indices used for Swiss pension funds. Looking at the same asset allocation data from the perspective of a EUR-based investor that operates in a EUR- (rather than CHF-) focused investment universe might yield very different results.

61. Portfolio optimization is a complex and multi-dimensional process for liability-driven investors such as pension funds. Not only do they need to find the asset allocation that provides the best combination of risk and return, but that allocation must also suit their liability profile and consider economic, regulatory, and statutory optimization constraints. It is not possible to replicate such a multi-dimensional and fund-specific portfolio optimization on an aggregate level (that is, across all pension funds in each of our country surveys) in this paper.

62. This approach is a gross simplification of a proper risk assessment. Among other things it should be noted that some of the indices used for the SAA benchmark return calculation might understate the actual volatility of their underlyings due to their accounting and reporting practices. This is most likely to be true for illiquid asset class indices that do not follow daily mark-to-market approaches.

63. This calculation builds on the annual investment returns Swiss second-pillar pension funds achieved between 2008 and 2018 and adds 60 bps to 115 bps every year. It thus accounts for the actual movement of investment returns over the years and the corresponding compounding effects. It assumes net flows into and out of the stock of Swiss second-pillar pension assets (e.g., due to contributions and benefit payments) to be unaffected by the assumed higher investment performance.

64. Including regulatory and voluntary contributions in 2017; Schweizerische Sozialversicherungsstatistik 2019, Swiss Federal Social Insurance Office, 2019, bsv.admin.ch, p. 69.

65. We use different median wages for men and women and four age brackets (20 to 29, 30 to 39, 40 to 49, and 50 to 65 years) in this analysis. For details, see the Technical Appendix.

66. Contribution rates per age group: 25 to 34: 7 percent; 35 to 44: 10 percent; 45 to 54: 15 percent; 55 to 65: 18 percent; Meaning and objectives of occupational pension funds, Swiss Federal Social Insurance Office, January 2020, bsv.admin.ch.

67. For the sake of simplicity, we do not differentiate between men and women in this analysis and assume a uniform retirement age of 65 for everyone.

68. Market-level average AuM per pension fund are CHF 0.6 billion for Switzerland (given a total of 1,562 pension funds that managed CHF 876 billion in pension assets in 2018 according to the Swiss Federal Office for Statistics), CHF 0.3 billion for Canada (based on a total number of 8,592 pension institutions that manage CHF 1,594 billion in pension assets,—according to the latest available numbers from Statistics Canada), and CHF 6.5 billion for the Netherlands (given that only 233 pension funds managed a total asset base of CHF 1,504 billion in 2018 according to the Dutch National Bank).

69. Swisscanto Vorsorge AG, 2019. Data has not been published in this form.

70. Manuel Ammann, Christian Ehmann, Is Governance Related to Investment Performance and Asset Allocation? Empirical Evidence from Swiss Pension Funds, Working Papers on Finance No. 2016/23, University of St. Gallen, September 2016, p. 21–2.

71. Supervised entities, De Nederlandsche Bank, January 2020, statistiek.dnb.nl.

72. Super System Review: Review of the Governance, Efficiency, Structure and Operation of Australia's Superannuation System Final Report – Part Two Recommendation Packages, Commonwealth of Australia, June 2010, treasury.gov.au, p. 122.

73. DB Taskforce Interim Report, Pension and Lifetime Savings Association, October 2016, plsa.co.uk, p. 26.

74. Summer Budget 2015, HM Treasury, July 2015, assets.publishing.service.gov.uk, paragraph 2.19; Local Government Pension Scheme: Investment Reform Criteria and Guidance, Department for Communities and Local Government, November 2015, assets.publishing.service.gov.uk, p. 4–5.

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76. LGPS – a changing competitive environment for asset managers, Deeper Perspectives Number 40, Spence Johnson, October 2016, p. 4.

77. Eser Keskiner, Robin Matthias, Is Big Really Beautiful? The Limits of Pension Consolidation, September 2018, McKinsey.com.

78. Alexander D. Beath, Chris Flynn, Asset Allocation and Fund Performance of Defined Benefit Pension Funds in the United States, 1998–2014, CEM Benchmarking, June 2016, cembenchmarking.com, p. 6.

79. Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2018, swisscanto.com, p. 31.

80. Manuel Ammann, Christian Ehmann, Is Governance Related to Investment Performance and Asset Allocation? Empirical Evidence from Swiss Pension Funds, Working Papers on Finance No. 2016/23, University of St. Gallen, September 2016, p. 21.

81. DC and DB research response, The Pensions Regulator, September 2017, webarchive.nationalarchives.gov.uk, p. 2.

82. These institutions collectively managed almost half of all Swiss pension assets at the time, according to the authors.

83. Manuel Ammann, Christian Ehmann, Is Governance Related to Investment Performance and Asset Allocation? Empirical Evidence from Swiss Pension Funds, Working Papers on Finance No. 2016/23, University of St. Gallen, September 2016, p. 18.

84. All quotes and references in this paragraph: Manuel Ammann, Christian Ehmann, Is Governance Related to Investment Performance and Asset Allocation? Empirical Evidence from Swiss Pension Funds, Working Papers on Finance No. 2016/23, University of St. Gallen, September 2016, p. 19.

85. The Evolution of the Canadian Pension Model Practical Lessons for Building World-Class Pension Organizations, International Bank for Reconstruction and Development/The World Bank, 2017, documents.worldbank.org, pp. XI, 44.

86. The Evolution of the Canadian Pension Model: Practical Lessons for Building World-Class Pension Organizations, International Bank for Reconstruction and Development/The World Bank, 2017, documents.worldbank.org, p. 48.

87. More recent but yet unpublished McKinsey research on the world's largest and most sophisticated institutional investors reaffirms this finding. For the 2016 report, see Sacha Ghai, Marcos Tarnowski, From Big to Great: The World's Leading Institutional Investors Forge Ahead, June 2016, McKinsey.com. The data included in Exhibit 32 was part of the underlying research effort but not published in the final report.

88. The 3rd contributor to occupational pension plans. Proposals for optimization, SwissBanking, February 2017, swissbanking.org, p. 79.

89. Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2019, swisscanto.com, p. 42.

90. Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2018, swisscanto.com, p. 7.

91. Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2019, swisscanto.com, p. 58.

92. OECD Economic Surveys: Switzerland 2019, OECD, November 2019, oecd.org, p. 86.

93. Le Taux de Conversion, Helvetia, 2018, Helvetia.com, p. 13.

94. OECD Economic Surveys: Switzerland 2019, OECD, November 2019, oecd.org, p. 84.

95. Bericht finanzielle Lage der Vorsorgeeinrichtungen 2018, Oberaufsichtskommission Berufliche Vorsorge OAK BV, May 2019, oak-bv.admin.ch, p. 15.

96. Bericht finanzielle Lage der Vorsorgeeinrichtungen 2018, Oberaufsichtskommission Berufliche Vorsorge OAK BV, May 2019, oak-bv.admin.ch, p. 7.

97. For a more detailed discussion of the challenges associated with pension fund mergers, please also see the following McKinsey publication: Eser Keskiner, Robin Matthias, Is big really beautiful? The limits of pension consolidation, September 2018, McKinsey.com.

98. Such a move could be particularly interesting, given that public-sector pension funds on average continue to perform worse than their private sector counterparts. As Swisscanto's latest pension study confirms, they deliver lower investment performance and have lower funding levels despite working with higher technical interest rates than the average private sector pension fund.

99. OECD Economic Surveys: Switzerland 2019, OECD, November 2019, oecd.org, p. 86.

100. Pension Markets in Focus 2019, OECD, 2019, oecd.org, p. 72.

101. The ranks mentioned in this paragraph appear not to correspond with the ranking shown in Exhibit 10. Please see footnote 49 for an explanation of the differences. McKinsey analysis using data from Pension Markets in Focus 2019, OECD, 2019, oecd.org, p. 80.

102. Melbourne Mercer Global Pension Index 2019, Monash Centre for Financial Studies, 2019, mercer.com.au, p. 6.

103. Note: Differences between the OECD market averages and the surveys do not add up to the number stated here due to rounding.

104. Pensionskassen-Monitor der Swisscanto Vorsorge AG, Swisscanto Vorsorge AG, June 2019, swisscanto.com, p.3; Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2019, swisscanto.com, p. 37; Swisscanto Vorsorge AG, Schweizer Pensionskassenstudie 2018, swisscanto.com, p. 31.

105. See Credit Suisse Swiss Pension Fund Index Q4 2018, Credit Suisse, 2019, credit-suisse.com, p.6; Pensionskassen-Monitor der Swisscanto Vorsorge AG, Swisscanto Vorsorge AG, June 2019, swisscanto.com, p.3; Manuel Ammann, Christian Ehmann, Is Governance Related To Investment Performance And Asset Allocation? Empirical Evidence From Swiss Pension Funds, Working Papers on Finance No. 2016/23, University of St. Gallen, September 2016, p. 33.

106. Manuel Ammann, Christian Ehmann, Is Governance Related to Investment Performance and Asset Allocation? Empirical Evidence from Swiss Pension Funds, Working Papers on Finance No. 2016/23, University of St. Gallen, September 2016, p. 33.

107. Sources: Company and stock exchange websites and factsheets.

108. See Credit Suisse Swiss Pension Fund Index Q4 2018, Credit Suisse, 2019, credit-suisse.com, p.6; Pensionskassen-Monitor der Swisscanto Vorsorge AG, Swisscanto Vorsorge AG, June 2019, swisscanto.com, p.3; Manuel Ammann, Christian Ehmann, Is Governance Related to Investment Performance and Asset Allocation? Empirical Evidence From Swiss Pension Funds, Working Papers on Finance No. 2016/23, University of St. Gallen, September 2016, p. 33.

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110. IPE Top 1000 Pension Funds, Supplement to Investment Pensions Europe, IPE International Publishers Ltd, September 2019, p. 45.

111. Individual Pension Fund Data (Quarter), Dutch National Bank, November 2019, statistiek.dnb.nl.

112. Global Pension Assets Study 2019, Thinking Ahead Institute - Willis Towers Watson, 2019, thinkingaheadinstitute.org; Thinking Ahead Institute/Pensions & Investments World 300, Thinking Ahead Institute - Willis Towers Watson, September 2019, thinkingaheadinstitute.org; Top 100 Pensions Funds, Benefits Canada, Canadian Institutional Investment Network, June 2019.

113. Pensionskassenstatistik, Swiss Federal Office for Statistics, bfs.admin.ch.

114. Individual Pension Fund Data (Quarter), Dutch National Bank, November 2019, statistiek.dnb.nl.

115. Pension Satellite Account, Pension Assets at Market Value, by Type of Plan, Statistics Canada, December 2019, statcan.gc.ca.