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**Policies for Switzerland's
ageing society**

**Christine Lewis,
Patrice Ollivaud**

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ECONOMICS DEPARTMENT

POLICIES FOR SWITZERLAND'S AGEING SOCIETY

ECONOMICS DEPARTMENT WORKING PAPERS No.1600

By Christine Lewis and Patrice Ollivaud

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Abstract/Résumé**Policies for Switzerland's ageing society**

Swiss society is ageing. At the same time, life expectancy is increasing. With most workers retiring around age 65, time in retirement is growing and the ratio of retirees to employees is set to soar. These developments bring a range of opportunities but will likely weigh on growth in GDP per capita and increase public spending. They may also widen existing inequalities. This paper highlights three key policy challenges to preserve high living standards in coming decades. First, the pension system ensures good retirement incomes despite a lack of reforms. However, reforms are urgently needed as the system is under increasing pressure. Second, a range of disincentives and barriers in the labour market and tax system contribute to early retirement and involuntary retirement. Boosting employability at older ages and broadening older workers' options would dampen the economic impact of ageing. Third, the Swiss health system delivers good outcomes but at a higher cost than other countries, and ageing will only exacerbate the associated pressures. Cost containment and improved co-ordination are vital. Adjusting the financing of long-term care could improve access and the overall quality of long-term care.

This Working Paper relates to the 2019 OECD Economic Survey of Switzerland (<http://www.oecd.org/economy/switzerland-economic-snapshot/>)

JEL classification: J26, J11, I18

Keywords: Switzerland; population ageing; pension system; healthcare; long-term care; labour market; long-term projections.

Faire face au vieillissement de la société en Suisse : quelles politiques ?

La société suisse vieillit et dans le même temps, l'espérance de vie s'allonge. La plupart des travailleurs prenant leur retraite aux alentours de 65 ans, le temps passé à la retraite augmente et le ratio retraités-salariés devrait grimper en flèche. Bien que porteuses d'un large éventail d'opportunités, ces évolutions vont probablement peser sur la croissance du PIB par habitant et faire progresser les dépenses publiques. Elles peuvent aussi accentuer les inégalités existantes. Ce papier met en lumière trois défis essentiels que devront relever les pouvoirs publics pour préserver un niveau de vie élevé au cours des prochaines décennies. Premièrement, le système de retraite assure des revenus substantiels aux retraités malgré une absence de réformes. De telles réformes doivent néanmoins être conduites de toute urgence car le système est soumis à des pressions croissantes. Deuxièmement, un certain nombre de contre incitations et d'obstacles existant sur le marché du travail et au sein du système fiscal contribuent aux départs en retraite anticipée et aux départs forcés à la retraite. Stimuler l'employabilité des plus âgés et élargir le champ des possibilités qui leur sont offertes permettrait d'atténuer les conséquences économiques du vieillissement. Troisièmement, le système de santé suisse obtient d'excellents résultats mais à un coût plus élevé que dans les autres pays, et le vieillissement ne fera qu'exacerber les pressions correspondantes. La maîtrise des coûts et l'amélioration de la coordination sont donc indispensables. Ajuster le financement des soins de longue durée pourrait améliorer l'accès à ces soins et leur qualité globale.

Ce Document de travail a trait à l'Étude économique de l'OCDE de la Suisse, 2019 (<http://www.oecd.org/fr/economie/suisse-en-un-coup-d-oeil/>)

Classification JEL : J26, J11, I18

Mots clés : Suisse ; vieillissement de la population ; système de retraite ; santé ; soins de longue durée ; marché du travail ; projections à long-terme.

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Policies for Switzerland's ageing society

By Christine Lewis and Patrice Ollivaud¹

Switzerland, like other OECD countries, is ageing. Almost one-fifth of the population is already 65 years old or more, a share set to reach 30% by 2060. While reaching 65 years previously denoted “old age”, a Swiss 65-year-old can expect to live another 21 years, amongst the highest in the OECD (OECD, 2017a). The structural shift in the population is well anticipated and was highlighted already in OECD (2000). Since then, brisk net immigration has slowed the pace of change and diminished the urgency of reform. However, going forward, lower net immigration and the retirement of the large “baby boomer” cohort make further reforms more pressing to ensure that high living standards extend into old age and that the bonus of longer lives does not become a burden. After spelling out the main economic implications of ageing in Switzerland, this paper focusses on three key policy challenges: securing adequate incomes in retirement; lengthening working lives to ease adjustment costs; and meeting growing demand for health care and long-term care.

Implications and challenges of an ageing society

Over the past five decades the Swiss population has grown by around 3 million people and become older (Figure 1, Panel A). The fertility rate halved to 1.4 between the early 1960s and the early 2000s and has only increased marginally since. Higher health spending, better education, income gains and healthier lifestyles have raised life expectancy across the OECD (OECD, 2017a). In Switzerland, life expectancy has increased from 69 years in the early 1950s to 84 years. And if mortality rates continue to improve, a boy and girl born in 2017 could expect to reach 91 and 94 years, respectively. Rapid immigration boosted population growth in the 1960s, 1990s and 2000s, following the 2002 Swiss-EU agreement on the free movement of persons (Panel B). Immigrants tend to be younger.

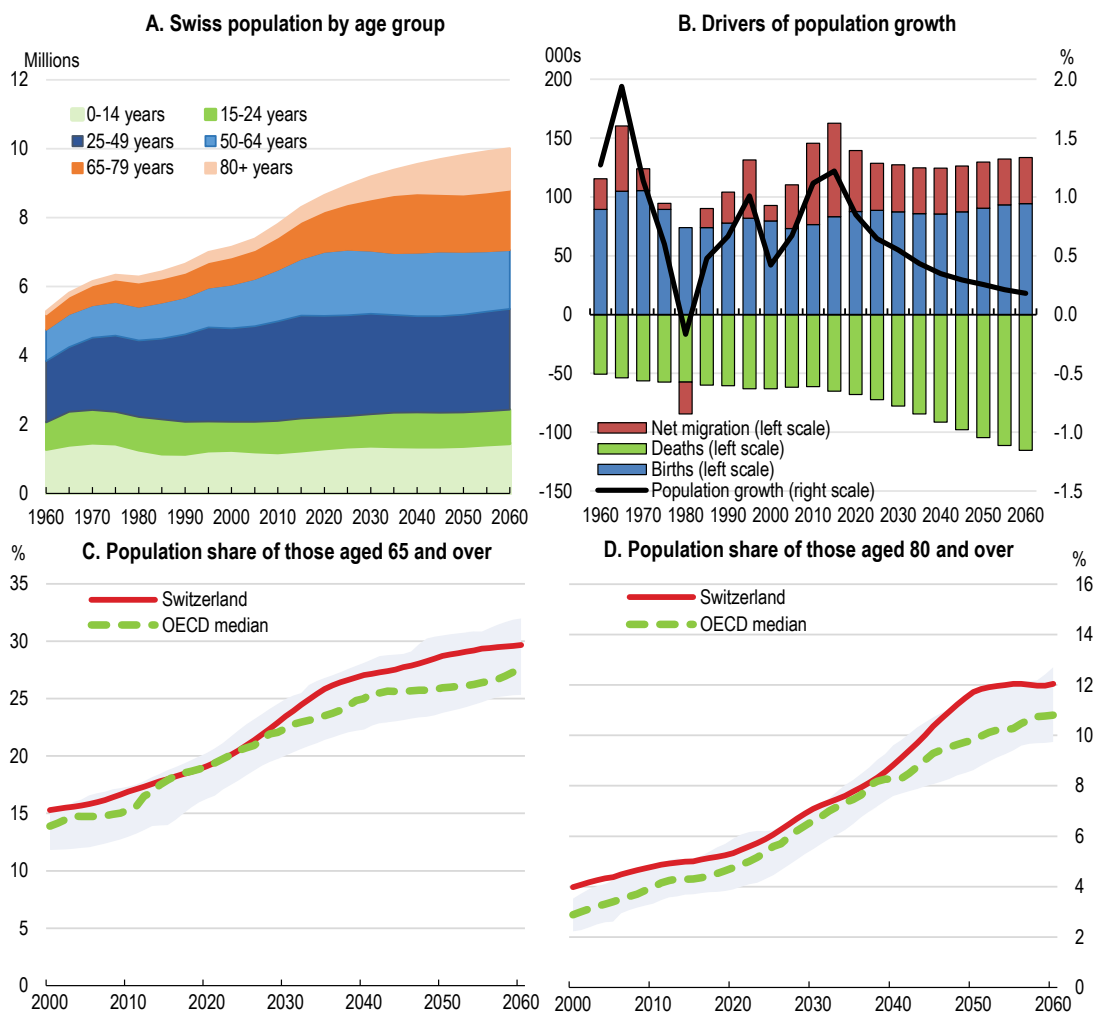
Looking ahead, the rate of natural increase could turn negative and the pace of immigration is highly uncertain – it almost halved between 2013 and 2017 as other European economies recovered from the global financial crisis. Through its effect on population growth and employment, immigration will shape how ageing affects the economy (Box 1). In the baseline scenario, these dynamics will slow population growth and ageing will speed up in the 2030s. The share of the population over 65 years – the legal retirement age for Swiss men – could reach 30% by 2060 (Panel C). The share of the population aged 80 or over – at which disabilities become more prevalent – will more than double by 2045 (Panel D).

The OECD long-term scenarios shed light on how ageing can affect Switzerland's economy. The projected decline in the population share of 15-74 year-olds (potential working age), subtracts up to ½ percentage point from annual GDP per capita growth (Figure 2, Panel A). Moreover, older workers are less likely to be

¹ Christine Lewis was previously Senior Economist and Patrice Ollivaud is Economist in the Economics Department of the OECD. The authors would like to thank Jens Høj, Vincent Koen, Isabel Koske and Alvaro Pereira (from the Economics Department), John Mitchell (SDD), Stéphanie Payet (DAF), Tiago Cravo Oliveira Hashiguchi, Ana Llana Nozal, Marius Lüske, Valerie Paris, Singh Shruti and Anna Vindics (ELS), Bert Brys (CTP), for useful comments and suggestions. The paper has also benefitted from comments by Swiss officials and by members of the OECD Economic and Development Review Committee. Special thanks go to Lutécia Daniel for statistical assistance, Michelle Ortiz and Sisse Nielsen for editorial assistance (from the Economics Department).

employed, notwithstanding the increase in the employment rates of older cohorts in recent years, so the employment rate may edge down (Panel B). Rising female participation has acted as an offset lately but without further reforms these gains will be exhausted from the early 2020s. In any event, future income growth depends heavily on raising output per worker, which is highly uncertain (Box 1). Labour shortages are widely expected to lift the relative return on capital and raise labour productivity (Guillemette and Turner, 2018; Lee, 2016). A scarcity of middle-aged workers may intensify automation and, in some industries, raise productivity (Acemoglu and Restrepo, 2018). Robot usage is intensifying in Switzerland, though it remains less common than elsewhere: in 2016 there were 70 robots per 10 000 employees in manufacturing, up from 42 in 2007 (OECD, 2019a). However, ageing may also weigh on productivity, if workers' skills become outdated or entrepreneurialism declines, for example.

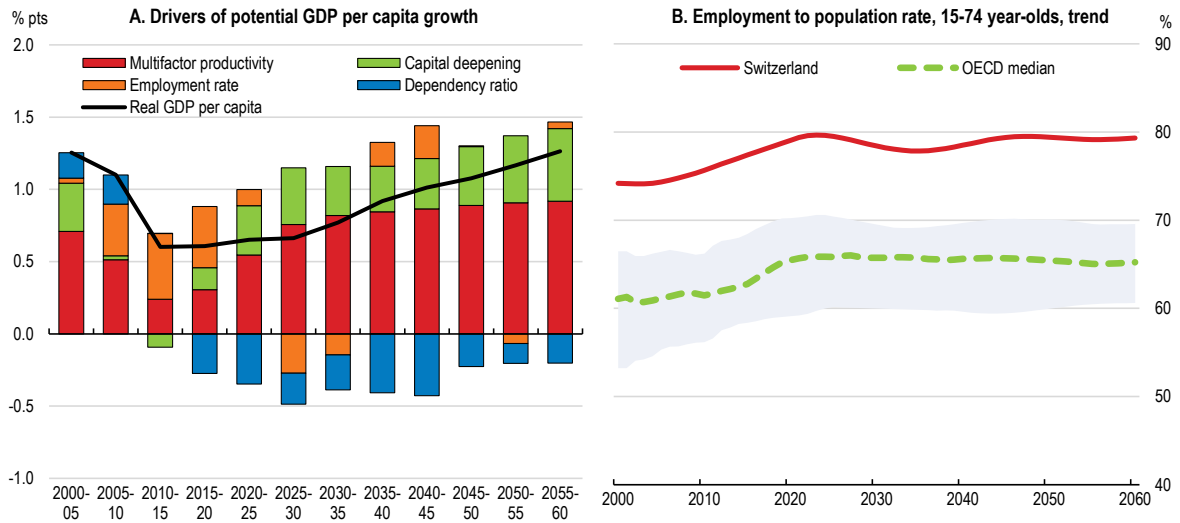
Figure 1. The population is ageing



Note: In Panel A youth are shown in green, 25-64 year-olds in blue and seniors in orange. After 2020 data are from the “medium variant” of UN scenarios. In Panel B data are averages over the five years to the date shown. In Panels C and D, the shaded area denotes the 25th to 75th percentile range of available data for OECD countries.

Source: United Nations (2019), *World Population Prospects: The 2019 Revision*, Online Edition; OECD Economics Department Long-term Model.

Figure 2. Productivity growth will be the main driver of GDP growth in the years ahead



Note: The working-age population is 15-74 year-olds. In Panel B the shaded area denotes the 25th to 75th percentile range of available data for OECD countries.

Source: OECD Economics Department Long-term Model.

Box 1. Four sources of uncertainty about future economic developments

Immigration has been difficult to forecast and is the main source of uncertainty around Switzerland's population projections. In 2001, net immigration was expected to fall to 4 500 per year by 2015 and the population was expected to shrink after 2030. Instead net immigration was around 72 000 in 2015 and the population is expected to continue growing slowly throughout this century. The United Nations' scenarios show that the population would start declining from around 2030 if net immigration was zero. Immigrants are typically of working age so a higher immigration scenario could raise growth and reduce the burden of rising age-dependent expenditure by 0.7% of GDP in 2045 (Table 1). Future immigration may be limited because the European Union's population is also ageing and there are quotas for migrants from non-EU countries.

Table 1. Age-dependent public expenditure under different assumptions

Per cent of GDP, all levels of government

	2013	2030	2045
Baseline	17.3	19.3	20.8
Higher immigration (+20 000 by 2030; +10 000 by 2040)		-0.4	-0.7
Higher productivity growth (+0.3% annually)		-0.1	-0.2
Lower productivity growth (-0.3% annually)		0.0	0.2

Note: Age-dependent expenditure includes pensions, health care, long-term care and education spending.

Source: T. Brändle, C. Colombier and A. Philipona (2016), *2016 Report on the Long-term Sustainability of Public Finances in Switzerland*, Federal Finance Administration.

Productivity growth is another source of uncertainty. Ageing may weigh on labour productivity either directly, or indirectly through the impact of reduced technological progress (Lee, 2016). Over the past two decades GDP per hour worked grew by 0.8% on average, which was close to the 1% that the Swiss authorities had assumed (on a full-time equivalent basis) (OECD, 2000, 2017b). The most recent national scenarios assume that labour productivity will grow by 1.2% annually over 2020-45. In the OECD scenarios, labour productivity growth is dynamic, rising from around 1% per year in the coming decade to 1.4% in the 2050s. Faster productivity growth would ease the burden of ageing-related spending (Table 1).

Just as the spell of historically **low interest rates** was unanticipated, the pick-up in interest rates foreseen in the OECD long-term scenarios and other projections may fail to eventuate – or it may be sharper (Guillemette and Turner, 2018). Either scenario would have knock-on effects to the capital stock via the user cost of capital and in turn, productivity and wage growth. Interest rates also affect retirement incomes and the sustainability of public and private debt (household debt is currently high, with gross debt at 212% of net disposable income in 2016).

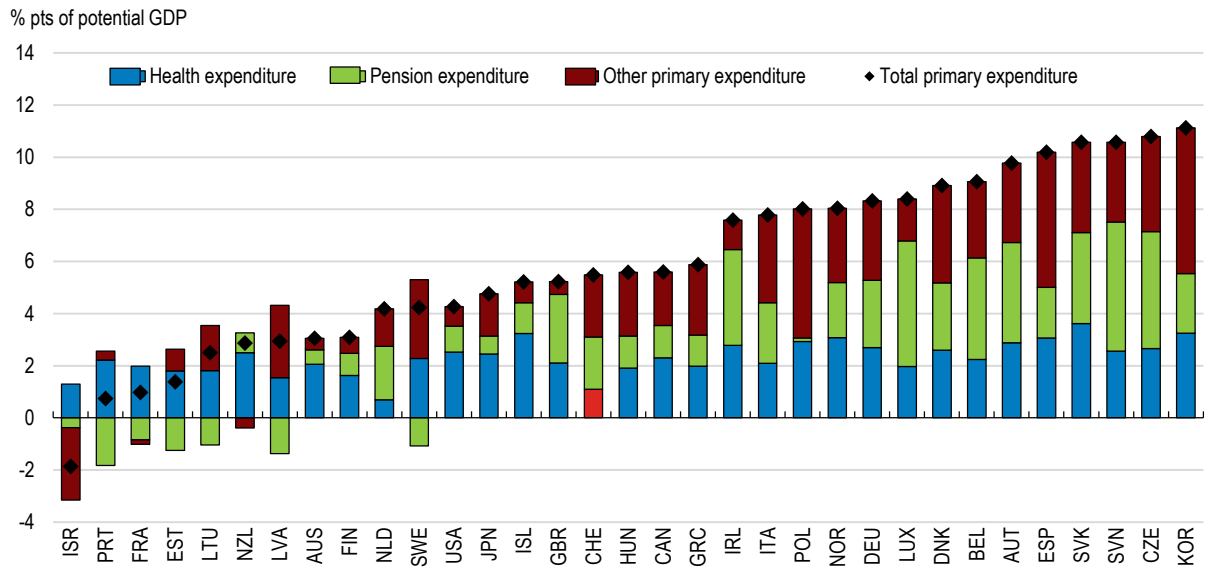
The effects of **climate change** on the economy are uncertain as the channels are complex, effects are non-linear, assumptions matter considerably and there are large tail risks, for example from extreme weather events (OECD, 2017c). Negative effects on the Swiss economy would materialise through health (including premature deaths) and labour productivity, but these may be partly offset by benefits from reduced heating costs and growth of industries such as summer tourism (Vöhringer, 2017). Delaying action adds to adjustment costs (OECD, 2017c). In addition to growth effects, climate change and mitigation policies globally may affect returns to saving via pension funds' assets that are exposed to the risk of stranded assets.

Ageing is also reshaping the economy, by expanding existing markets and creating new opportunities for businesses and entrepreneurs. These include products and services to manage physical or mental deterioration as well as leisure services for healthy individuals (OECD, 2019b). The Swiss Household Budget Survey suggests that spending per capita is highest for 65-74 year-olds, who spend more on transport, food, housing, health and leisure than other age groups. Above 75 years, spending tilts further towards health. Switzerland's specialisation in therapeutic goods and pharmaceuticals will be an advantage in an ageing world. Housing, transport and financial needs will change. Technology can deliver new products and services, facilitate changing work practices and create new ways of connecting socially (OECD, 2014a). Senior entrepreneurship can provide opportunities for activity and income in later life (OECD, 2019b).

Developments in longevity, decisions about work and demand for health and long-term care will all have fiscal effects. In Switzerland, the smaller role of government in providing pensions and financing health and long-term care will contain fiscal pressure relative to many other OECD countries (Figure 3). Nonetheless, these spending items could expand by 3% of GDP by 2060. Other public spending could grow even more if spending per capita is maintained in real terms, as assumed (Guillemette and Turner, 2018). Cantons and municipalities, which are primarily responsible for health and long-term care delivery, will bear ageing-related fiscal pressure most (Brändle, Colombier and Philipona, 2016). However, the different pace and extent of population ageing means that the challenge varies considerably across cantons (Figure 4). Managing these cost pressures and financing spending needs is discussed in later sections, focussing on pensions and health and long-term care.

Figure 3. Rising public expenditure will entail fiscal challenges

Change in expenditure from 2019 to 2060

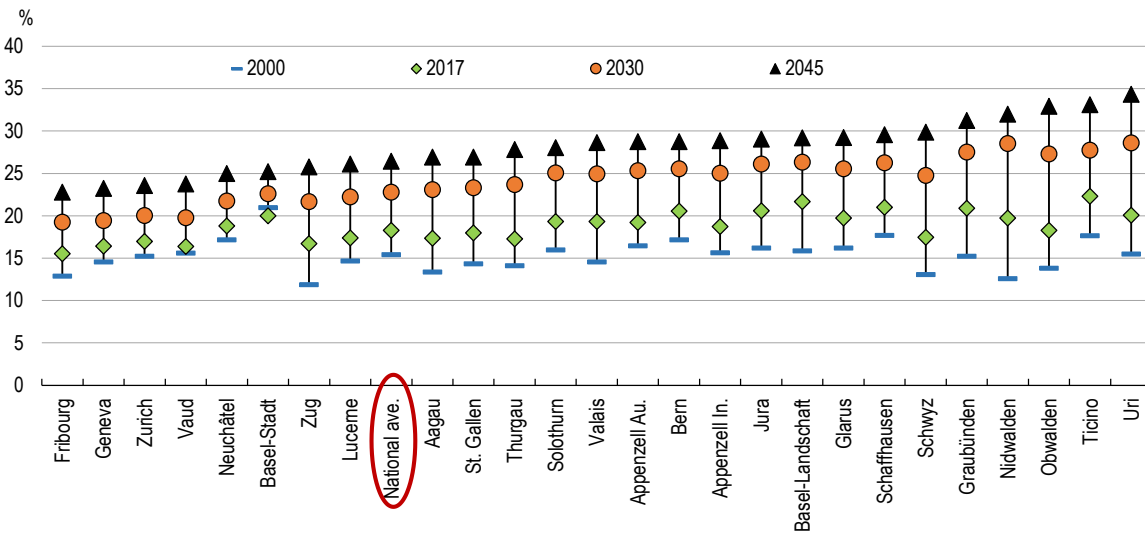


Note: These scenarios are illustrative only and differ from national projections. Pension expenditure includes survivors' pensions and disability pensions but all other benefits are included in "Other primary expenditure", which is all non-interest spending except health and pension spending.

Source: Simulations using the OECD Economics Department Long-term Model.

Figure 4. Ageing is likely to be uneven across cantons

Ratio of 65+ year-olds to total permanent resident population



Note: Scenarios for cantons are national projections and are only available to 2045. The national projection for the total population is slightly higher (483 000 people in 2045) than the projections elsewhere in this paper.

Source: Federal Statistical Office

Prospects for elderly Swiss are comparatively bright thanks to relatively high incomes and low disability rates in old age. Still, as elsewhere, ageing is likely to amplify earlier inequalities (OECD, 2017d). Although employment rates are high, the sizeable gap between the employment rate of highly educated adults and

less educated adults (of 25 percentage points, close to the median OECD country), contributes to differences in savings and retirement income. Swiss women's lifetime earnings are lower than men's because of lower hours worked and wage gaps. Together with their longer lifespan, this puts women at greater risk of old-age poverty.

The social security system protects against poverty through a redistributive old-age pension and means-tested supplementary benefits to ensure individuals can meet expenses for basic needs, residential care, or needs related to invalidity. Around 13% of the population aged 65 or over received supplementary benefits in 2017, with the rate higher for women. Maintaining current levels of support will depend on economic outcomes and government finances. The level of support also varies across cantons. Spatial inequalities may widen if cantons with faster demographic change face difficulties in providing services, especially if tax revenues come under greater pressure. Recent empirical work highlights this risk: over 2001-12, OECD regions with faster demographic change than the national average experienced below-average productivity growth, which added to the drag on GDP from an ageing workforce (Daniele, Honiden and Lembcke, 2019).

Preparing the pension system for a fast-growing number of retirees

The Swiss pension system is organised around three pillars which mitigate individual and public risks as recommended by the OECD (OECD, 2018a; Table 2). The first pillar is a public pay-as-you-go system which is the main source of income for low-income earners (Figure 5; Box 2). Unlike a strict social insurance system, it is redistributive because pensions are capped but contributions are not. The second pillar is an occupational scheme and many firms choose to provide a voluntary ("extra mandatory") component. Most pension funds are based on a hybrid scheme, whereby individual pension assets accumulate but benefits are heavily dependent on parameters set at the national level. Less than 5% of pension funds' liabilities are pure defined-benefit.

Table 2. The Swiss pension system is organised around three pillars

	First pillar	Second pillar	Third pillar
Type of pension	State pension	Occupational pension plans	Private pension plans
Coverage	Mandatory	Mandatory for employees above a salary threshold	Voluntary
Objective	Guarantee basic living costs	Maintain living standards	Supplemental

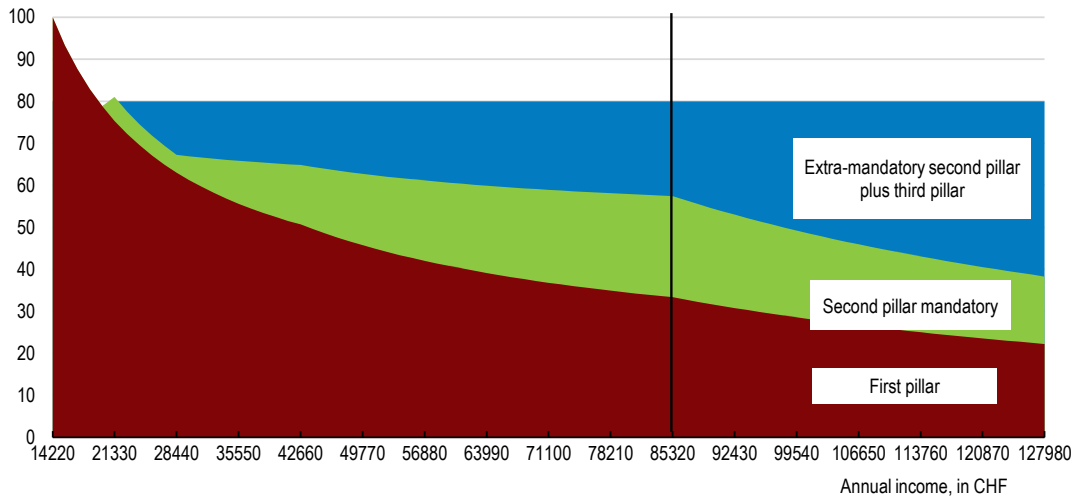
Note: A social safety net complements the first-pillar pension, providing "supplementary benefits" to recipients whose revenues fall short of defined basic expenses.

Box 2. Characteristics of the first pillar

The first pillar is a pay-as-you-go scheme. The contribution rate is the same for all employees at 8.4% of gross earnings (half of it being paid by employers). Pension benefits depend on the number of contribution years, the average salary over the career and some potential bonuses. After one year of contribution, a pension benefit can already be granted but to get a full pension, a worker should contribute every year from age 20. Each missing year implies a penalty of 1/44th. In 2019, full pension benefits range between CHF 1 185 and CHF 2 370 (the average salary is above CHF 7 000 per month). In addition, a couple cannot receive more than 150% of the maximum benefit. There are bonuses to compensate for years taking care of children and relatives.

Figure 5. The relative importance of each pillar changes with the level of income

Theoretical replacement rate in per cent of 2019 salary

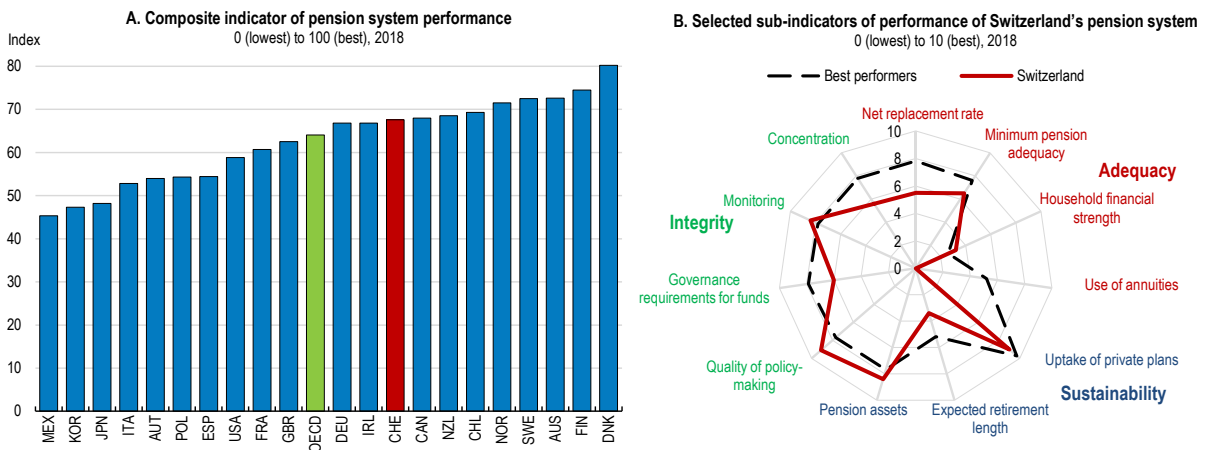


Note: The replacement rate is the ratio of the pension benefit at retirement to the final year’s salary for a worker with a full career. The average salary (CHF 85 320, which is about the same in US dollars) is marked with a line. The second pillar is based on cumulated contributions and returns equivalent to nominal wage growth. Extra-mandatory second and third pillars show the voluntary contributions required to have a replacement rate of 80%.

Source: Federal Social Insurance Office.

Overall, the pension system compares relatively well against other countries’ systems, particularly in aspects related to governance (“integrity”) and financial sustainability (Figure 6). It compares less well on the adequacy of retirement income, notably because of incentives to take a lump sum rather than an annuity (Mercer, 2018). Switzerland’s relative position deteriorated over the years, mostly because of the lack of reforms in the past 20 years.

Figure 6. Switzerland’s pension system is relatively sound



Note: In Panel A, the composite indicator, the Global Pension Index, is a score between 0 and 100 computed for 30 countries (mostly OECD members) from three sub-indices (adequacy, sustainability and integrity) to measure retirement income systems against more than 40 indicators. The OECD refers to the unweighted average of 22 OECD countries. Panel B presents selected sub-components of the three sub-indices. The best performers on this metric are the Netherlands, Denmark, Finland, Australia and Sweden.

Source: Mercer (2018), *Melbourne Mercer Global Pension Index*, Australian Centre for Financial Studies, Melbourne.

The first pillar is overdue for reform

As is common among pay-as-you-go systems, the first pillar is on course to experience serious financing troubles as ageing progresses. Total spending on pensions has increased by 2.7% annually in the past 10 years while revenues only rose by 1.9% (Federal Social Insurance Office, 2018). The compensation fund managing first pillar assets and liabilities has run a deficit (excluding capital income) since 2014. Receipts currently come mostly from social security contributions by employees and employers (over 70%) with the rest from government revenues and capital returns.

Reforms to improve the financial sustainability of the first pillar have proven difficult. The latest major attempt was a comprehensive project “Prévoyance vieillesse 2020” rejected by referendum in 2017. Key elements were a higher retirement age for women, a lower pension from the second pillar partly compensated by a higher first-pillar pension, and a VAT increase.

A reform will take effect from 2020 with a view to raise an additional CHF 26 billion by 2030 (Box 3). It will delay the year the fund tips into negative equity by four years to 2035 (Federal Social Insurance Office, 2019). By 2030, the compensation fund will reach roughly 50% of annual expenditures (still 100% in 2018) and decline further afterwards. Further revenues will therefore be needed. Earlier estimates from before the recent reform suggest the funding gap would still be large: using a general equilibrium model, Keuschnigg (2018) estimates that first-pillar financing needs in the long run require raising the standard VAT rate by 4 percentage points and the effective retirement age by four years. While such reforms are difficult politically and could necessitate measures to support low earners, they are more efficient than alternatives like higher direct taxation.

The legal retirement age for men has been 65 since 1948 – when Swiss life expectancy at 65 was eight years lower – while the female retirement age increased to 64 in 1997 (women’s life expectancy at 65 is three years above men’s). Retirement is set to become one of the longest in the OECD as the legal retirement age falls below the average and life expectancy keeps rising (by more than three years by 2060) (Figure 7). The government plans to harmonise the retirement age for women with men (at 65) (Box 3). The revision would postpone the date the fund’s equity is exhausted by just one year (while the proposed VAT increase would push it out by another three years).

A more ambitious reform can have a large impact on financing. For example, OECD estimates suggest that with the statutory retirement age at 67 years, the ratio of people above the retirement age to working age population would increase by 5 instead of 12 percentage points by 2030. Denmark and the Netherlands, with similar pension systems, will increase the retirement age to 67 in the early 2020s (and 68 by 2030 for Denmark) and have automatic increases linked to life expectancy thereafter. The legal retirement age should be set at 65 for both sexes as planned, then raised to 67 by 2034 and linked to further gains in life expectancy thereafter. At higher statutory retirement ages, additional measures may be needed to adjust for lower life expectancy in some socio-economic groups.

Box 3. Government reform of the first pillar

A first reform passed Parliament in September 2018 and a referendum in May 2019. From 2020 it will increase funding for the first pillar by:

- Raising social security contributions on gross earnings by 0.3 percentage point;
- Assigning an additional 0.2 percentage point of VAT revenues to the first pillar (to 1 percentage point);
- Boosting the federal government's contribution from 19.6% to 20.2% of total expenses.

Besides this, the government presented a draft law to Parliament in August 2019 to further strengthen the first pillar's financial sustainability. Four main modifications are envisaged, effective from 2022:

- The legal retirement age will be renamed reference age and increased by one year for women so that it is 65 for both sexes in both the first and second pillars. The increase will be three months every year from 2023.
- The increase in the reference age for women will be compensated during a nine-year transition period at a total cost of CHF 700 million annually. Penalties for early retirement will be lower for women with low- to middle-incomes. Women retiring at age 65 will receive a bonus depending on their revenues (on average CHF 76 per month).
- Flexibility will be increased, allowing withdrawal of benefits between age 62 and 70 (instead of 63-70 for men and 62-69 for women); actuarial penalties (bonuses) for early (late) retirement are being adjusted (Table 3). Working part-time and receiving a partial pension will become possible. Contributions after 65 years will be permitted to compensate for gaps in pension rights.
- Increased revenues for the fund via a 0.7 percentage point hike in the VAT standard rate.

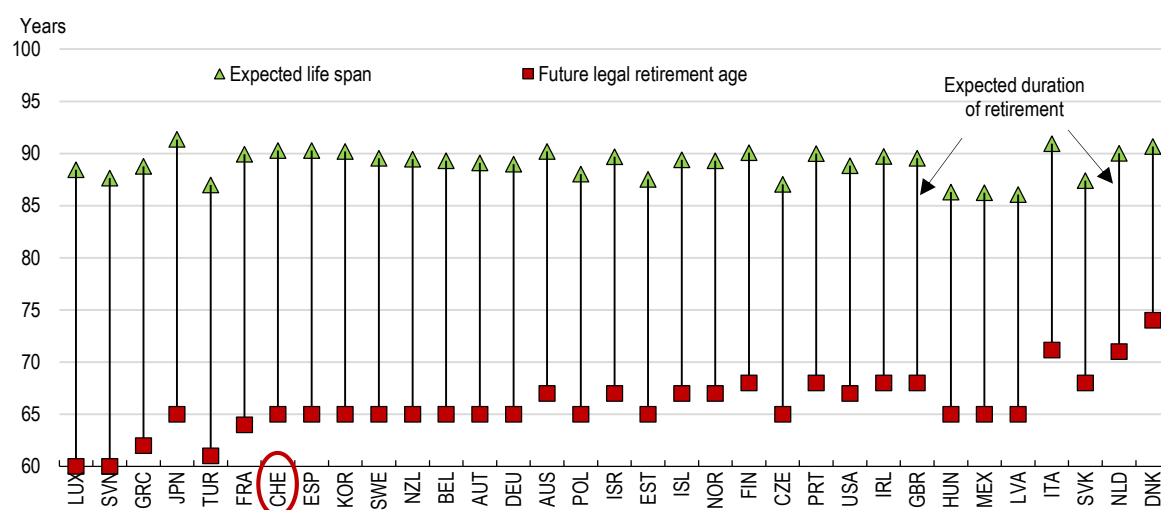
Table 3. Change in adjustment factors for working less/longer

	Early retirement by 2 years	Early retirement by 1 year	Postponed retirement by 1 year	Postponed retirement by 2 years
Current situation	-13.6%	-6.8%	5.2%	10.8%
Planned reform	-7.7%	-4.0%	4.3%	9.0%

Source: Federal Council

Figure 7. Expected duration of retirement will become one of the highest in the OECD

For a male aged 20 in 2016



Note: The future legal retirement age is based on present legislation. Expected life span is calculated as future legal retirement age plus projected life expectancy at that age. Projected life expectancy assumes that age-specific mortality rates are unchanged. Countries are ranked according to retirement duration.

Source: OECD, *Pensions at a Glance 2017: OECD and G20 Indicators*; United Nations (2019), *World Population Prospects: The 2019 Revision*, Online Edition.

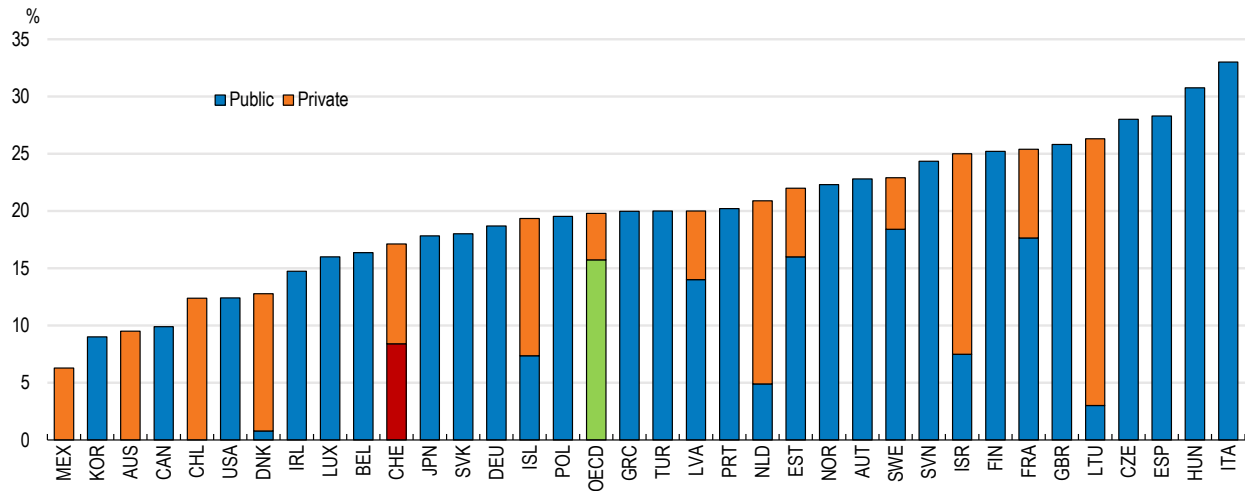
More flexibility around the legal retirement age can help raise the effective retirement age and ease entry into retirement. It can address concerns about inequalities in life expectancy. However, even if penalties and bonuses (for early and late retirement) are actuarially neutral, increasing flexibility can lower effective retirement ages due to underestimation of future needs, extensive social safety nets or high replacement rates (OECD, 2017e). In addition, flexibility can be socially inequitable if only the better-off can afford to retire early.

The government plans to update penalties and bonuses to be actuarially neutral so that for example, accrued pension benefits of working an additional year should be the same as in the year before (Box 3). However, given that early retirement is already quite common, lowering penalties may further encourage earlier retirement (Schaltegger, 2018). Some countries – such as Estonia, Iceland, Japan, Korea and Portugal – offer postponement bonuses above actuarial fairness. Other countries like Austria and Korea built financial disincentives to early retirement. By contrast, Sweden's system has no fixed statutory retirement age but flexible and actuarially neutral retirement entitlements from the age of 61. If the legal retirement age remains at 65 in Switzerland, adjusted bonus and penalties should be used to create incentives to postpone retirement.

The first pillar contributes most of low earners' retirement incomes (Figure 5; Box 2). Because it is complemented by a large second pillar, the future burden on public finances is smaller than for many other OECD countries (Figure 3). The contribution rate is relatively low (Figure 8); however, contributions are not capped while benefits are. This means that the pension system also functions as a tax on higher income earners, which is uncommon across OECD countries. However, through the minimum pension it offers an important safety net for low income earners.

Figure 8. Mandatory pension contribution rates are relatively low

For an average worker, in % of gross earnings, in 2016



Note: Includes pension contributions from both employer and employees. In the case of Switzerland, the public part relates to the first pillar and the private part to the second pillar.

Source: OECD, *Pension Outlook 2018*; and OECD calculations.

Pension benefits (both at and during retirement) are adjusted every two years in line with an index that is the average of average nominal wage growth and consumer price inflation. Accordingly, pension benefits increased by 0.9% per year on average over 2000-17, compared to 1.1% for the average wage, implying a fall in the first-pillar replacement rate. Using the OECD Pension Model, the first-pillar gross replacement rate (defined as the revenue at retirement relative to the final year's earnings) is estimated at 24% in 2060 for a male with average earnings, below the current rate of 35% estimated by the government. The simulation rests on a number of simplifying assumptions, including that there are no future reforms. It is important that future retirees understand that this trend is under way.

The government should improve communication tools and information so future pensioners can plan for their retirement and adjust their saving behaviour as needed. Statements are currently only available by writing to the compensation fund; the existing website is only a calculator. A user-friendly website should provide workers with clear up-to-date statements of their pension rights. It should also incorporate second-pillar entitlements; statements of second-pillar pension entitlements are currently sent annually and some funds provide information online. In Sweden an internet service – *MinPension* – gathers information for all three pillars, representing 98% of total pension capital. It also provides ways to project future pension entitlements using different assumptions, notably on expected returns and wages. It is half financed by the government and half by pension companies.

As shown above, the replacement rate at retirement is expected to fall in the future partly because of the mechanism to compute pension entitlements at retirement. This will particularly impact low earners but also average earners. Promoting greater awareness of overall pension entitlements would help workers make informed saving decisions and compensate for the fall. In principle, the pension level at retirement should follow the evolution of wages, as is common across the OECD (OECD, 2017e). The measure would be costly compared to the current settings whereby falling replacement rates will help finance the first pillar. However, it could limit the number of people seeking supplementary benefits at older age to meet their basic needs. Indexing pensions during retirement to inflation could help pay for this, as wages tend to outpace consumer prices. Overall, costs may be higher during a transition period (when existing pensioners still benefit from higher indexation) and such a period would probably be lengthy. One risk is that pensioners' purchasing power declines as they have a different consumption basket to the average

consumer, notably with a higher share of health services. Australia for example uses a “pensioner and beneficiary living cost index” to better match the older population’s needs.

Second earners (mostly women) may be more protected by their partner’s contributions than by their own. For example, they can have a full first-pillar pension without contributing if their partner pays at least twice the minimum contribution. The survivor’s pension also protects them in case of work interruption or inactivity. In 2017, about 50 000 widows received on average nearly 90% of the average pension. Despite lower earnings, women also typically receive slightly higher first-pillar pension income than men and longer benefits, due to higher life expectancy. Such a system creates inequality between household types. With a higher – and rising – female employment rate, there is less need to share the main earner’s benefits. There is no obvious justification why a widow is more protected than another individual facing a similar poor income situation (OECD, 2018a). A review should examine removing the survivor’s pension, including the effects on poverty. Sweden, for instance, abandoned it in 1990 (OECD, 2017e). The annuity cap for married couples and conditional exemptions on contributions for second earners also discourage work and should be removed. It would be more equitable to move towards a system providing pension entitlements according to individual contributions and means-tested assistance for those in need independent of marital status.

Self-employed workers are included in the first pillar, in line with OECD recommendations. Their pension contribution rates rise with income to reach a maximum of 7.8% compared to 8.4% for all employees. At low incomes, the difference with employees is sizeable. As self-employed workers receive the same benefits, the authorities should ensure that contributions are the same as for employees to avoid an apparent subsidy (Bonoli, 2017). The burden for the self-employed would be small as contribution rates are low in international comparison (Figure 8).

Making the mandatory occupational scheme more sustainable and inclusive

The second pillar grew out of employer initiatives that began in the 19th century and became mandatory in 1985. It is mostly akin to a defined-contribution scheme and is close to maturity as it already covered 80% of employees in 1985. Total pension assets are large but smaller than in Denmark and the Netherlands (Figure 9). More than half of the assets are from extra-mandatory contributions (discussed later). Most pension funds are private. Consolidation within the sector reduced their number from around 3 600 in 1985 to about 1 500 in 2018 and increased their average size. The scheme complements the replacement rate from the first pillar for a large share of the population. However, adjustments are required so the scheme can better meet future needs. In particular, its sustainability is at risk due to the rigidity of the legal framework, as discussed below. In addition, the current rules exclude some employees such as those working few hours or with multiple job contracts, which puts the adequacy of their retirement incomes at greater risk. At the request of the government, social partners agreed on a set of proposals that they announced in July 2019 (Box 4).

The system is a hybrid scheme. Unlike a pure defined contribution scheme, key parameters are set by the authorities mainly to reach a target replacement rate of 60% from the mandatory first and second pillars. Parameters are the conversion rate, which transforms accumulated assets into pension benefits, and the minimum return on assets. In 2004, the conversion rate became law (from a system where a technical committee made proposals to the government). It was also revised down stepwise, from 7.2% (valid since 1985) to 6.8% in 2014. The minimum return, originally fixed at 4%, is now 1% and is set every two years by the government based on the Supervisory Commission’s proposal. In 2018 the Federal Council did not follow the recommendation to lower it to 0.75%. For the extra-mandatory scheme, funds can freely set returns and benefits subject to the constraint that the pensioner is better off than if they had not made extra-mandatory contributions.

Box 4. A proposed reform of the second pillar by social partners

In July 2019, three out of four main social partners agreed on a set of reforms of the second pillar that have been passed to the Federal Council. The package contains a recommendation to lower the conversion rate from 6.8% to 6% in one step and proposes three measures to reduce the impact on the replacement rate:

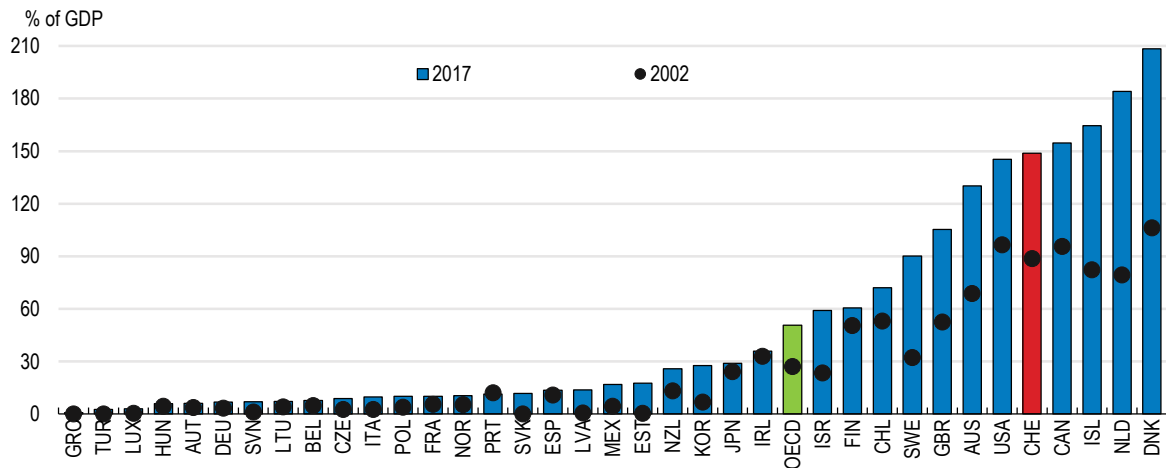
- Lowering the co-ordinated deduction from CHF 24 855 to CHF 12 443. This would help part-time workers to increase their pension entitlements.
- Flattening the relationship between contribution rates and age: from 7% to 9% of the insured salary for the 25-34 age group; from 10% to 9% between 35 and 44; from 15% to 14% between 45 and 54; and from 18% to 14% for older workers. This would improve the employability of older workers.
- A permanent extra benefit of CHF 200 for new retirees in the first five years, CHF 150 in the following five years and CHF 100 in the following five years. This introduces a pay-as-you-go element in the second pillar, as it would be financed by raising contributions by 0.5% of the salary.

In addition, the proposal recommends that the Federal Council regularly report on the adequacy of the conversion rate and of the permanent extra benefit.

Source: Union Patronale Suisse / Union Syndicale Suisse / Travail.Suisse, Press release, 2 July 2019

Figure 9. Swiss pension assets are amongst the largest in the OECD

Including voluntary savings



Note: The OECD average is unweighted.

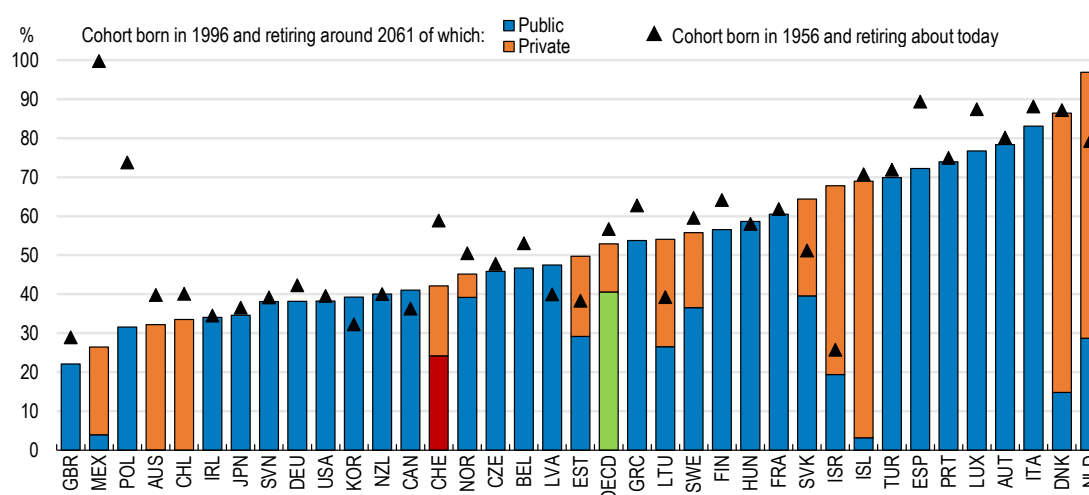
Source: OECD, *OECD Pensions Outlook 2018*.

Replacement rate and pension entitlements

Calculations based on the OECD Pension Model suggest that without pension reforms, the replacement rate from the mandatory pension system for an average-salary worker will fall to around 40% for a person starting a career now – lower than in many other OECD countries and below the 60% target in the pension law (Figure 10). Almost 90% of employees will receive income from extra-mandatory pension schemes. The projected fall in the mandatory component comes from a reduction in the replacement rate of both the first and second pillars. In the second pillar, the relative fall in the maximum covered wage will reduce the replacement rate as the ceiling only partly integrates real wage gains, mostly due to the indexation described above. While only optional in the law, the ceiling should systematically take into account real wage increases to limit the decline in the replacement rate. Otherwise inequalities between those only benefiting from the mandatory system and those having access to an extra-mandatory scheme may increase.

Figure 10. The expected replacement rate from mandatory schemes is relatively low

Per cent of individual earnings for an average earner



Note: Theoretical gross replacement rates at retirement for a full-career male worker. A Swiss man is expected to retire at age 65. For Switzerland, public refers to the first pillar while private refers to the mandatory settings of the second pillar.

Source: OECD, *Pensions at a Glance 2017: OECD and G20 indicators*; OECD (2019), "Will future pensioners work for longer and retire on less?", *Policy Brief on Pensions*.

The minimum conversion rate is too high according to actuarial models. Even in 1985, it was set at a high level in comparison with life expectancy but returns were high enough (Occupational Pension Supervisory Commission, 2019). Given that returns are lower than expected at the time of the 2004 reform and longevity is higher, pressures in the system are growing. Attempted revisions in 2010 (to 6.4%) and in 2017 (to 6.0%) failed. The 6.8% rate is consistent with an annuity for about 15 years ($100/6.8$), well below life expectancy at 65 (above 20 years). Equivalently, the rate corresponds to an implicit return of 4.8%, well above market returns (Bauman and Koller, 2018).

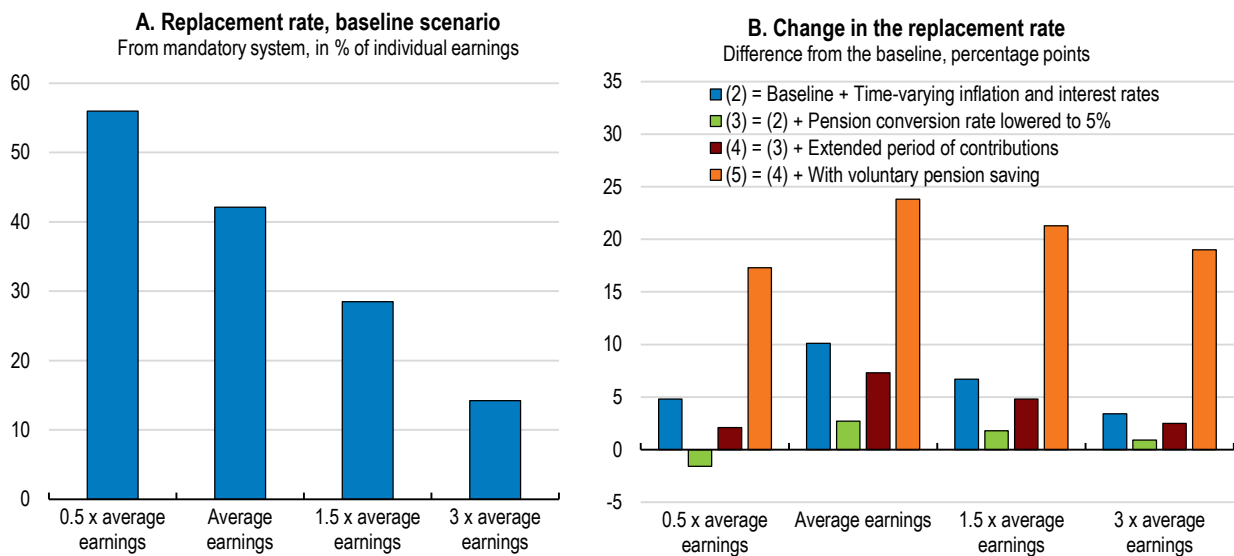
Pension funds have adopted various strategies to finance the non-funded gap. Some reduced the rate applied to extra-mandatory contributions so the overall conversion rate is below 6.8%, which confirms that the mandatory system is not currently sustainable. Pension funds also lowered the already low returns accruing to current contributors, amounting to an intergenerational transfer of about 0.8% of pension assets (about CHF 7 billion annually) on average during 2014-18 (Occupational Pension Supervisory Commission, 2019). For pension funds mainly relying on the mandatory scheme, the transfer is even higher and their future solvency is at risk.

Keeping the conversion rate at 6.8% would require an effective retirement age beyond 70 for the system to be financially viable. Estimates put the appropriate conversion rate at between 4.5 and 5%, depending on expected returns and retirement age (Helvetia, 2018). The current system for setting parameters has proved unable to adapt to the economic situation and changes in life expectancy. One option would be to shift to a pure defined-contribution scheme whereby benefits would depend on the fund's performance. A less radical option would be to task the Federal Commission for occupational pensions with making a recommendation based on market returns and life expectancy with the rate set in an ordinance, as currently done for the minimum return. Before 2004, the government was able to adjust the conversion rate according to technical parameters. In Sweden, such conversion (for earnings-related notional accounts) uses the retirement age and contemporaneous life expectancy (OECD, 2017e). In a system with a rate set by the government, the government should report regularly on the sustainability of the conversion rate, as is proposed by the social partners (Box 4).

On its own, lowering the conversion rate will reduce pension benefits (Figure 11). This could be partly compensated by higher contributions. Lengthening the contribution spell would also help. Starting contributing before age 25, which is currently impossible by law, would add over 2 percentage points to the replacement rate of an average earner due to compound interest. Extending contributions to age 68 would add a similar amount because contribution rates are higher.

Figure 11. Lowering the conversion rate will make voluntary saving more important

For an individual retiring in 2061



Note: The baseline scenario is from the OECD Pension Model and assumes a full-career worker starting a career at 20 in 2016; it applies mandatory settings for pillars 1 and 2; inflation is 2% per year; real wages increase 1.25% per year; rate of return is assumed equal to nominal wage growth. 'Time varying inflation and interest rates' are the projections for inflation (converging to 2%) and rate of return (long-term real interest rate plus 1 percentage point, converging to 3.5%) from Guillemette and Turner (2018). 'Extended period of contributions' have contributions starting at age 20 and up to 68. Scenario 5 adds extra-mandatory pillar 2 and pillar 3 contributions equivalent to 2.5% of salary for each, taking into account the cap on pillar 3 contributions.

Source: OECD calculations based on the OECD Pension Model and OECD Economics Department Long-term Model.

Withdrawal of pension assets

The wide scope for early withdrawal of funds may compromise pension adequacy. *First*, it is possible to buy a home using all pension assets (until age 50); about 18 000 people requested such early withdrawal in 2016. Top-up contributions can then plug the gap in capital but there is no obligation to compensate for withdrawn capital. To facilitate home ownership, pension assets should only be used as a guarantee, as envisaged by the law, so that returns continue cumulating and there is less risk of lost pension assets. *Second*, an employee can withdraw all accumulated assets to create a business. This puts future retirement income at risk. No other OECD country offers this option. Given the well-developed financial system, this possibility should be removed.

Another risk to retirement income is from the ability to withdraw pension assets at retirement as a lump sum. By law individuals are entitled to withdraw a minimum of 25% of their capital as a lump sum. Given a high conversion rate and rising longevity, pension funds often propose taking full pension wealth as a lump sum which reduces their liabilities (Swisscanto, 2018). Nearly a third of the insured choose to do so (Schüpbach et al., 2018). The retiree then bears investment and longevity risks. The safety net provided by supplementary benefits to the old-age pension has been found to reduce the demand for annuities (Bütler et al., 2017). Favourable tax treatment adds to incentives to take a large lump sum (Bütler and Ramsden, 2017): the tax burden is often lower with complete lump-sum withdrawal than with annuities, which are taxed as a normal income (Schüpbach et al., 2018). Moreover, a lower conversion rate may increase lump-sum withdrawals.

In principle, lump-sum withdrawals should not be allowed as they undermine the insurance aspect of the system. As a second-best solution, the maximum withdrawal should be set at 25% to reduce the fiscal cost of tax incentives and recourse to supplementary benefits, in line with OECD recommendations (OECD, 2018a). Removing the tax advantages that encourage lump-sum withdrawal is difficult in Switzerland's decentralised tax system.

Coverage

There is still scope to broaden the coverage of the second pillar. In 2017, the number of second-pillar contributors was only two-thirds that in the first-pillar. An entry threshold limits participation in the second pillar for employees. Although the threshold is quite low (a quarter of the average wage), those on multiple contracts (about 8% of employment), working part-time (one quarter of employment), or with low wages may be excluded. Participation of self-employed workers is optional but if not participating, they have access to a larger third pillar. On average benefits from both pillars for employees and self-employed workers are about the same (Ollivaud, 2019). The second pillar only insures the "co-ordinated salary", that is, the salary above what the first pillar pension insures. It ensures that both systems work together but creates complexity.

Lowering the threshold and basing contributions on the full salary would simplify the system and improve coverage. A 2011 survey reported that most employers were neutral or positive regarding lowering the threshold (OECD, 2014b). A lower contribution rate for low wage earners could limit the potential negative impact on their employment. For those already covered, contribution rates should be recomputed to ensure the change is neutral. Social partners have proposed maintaining the threshold but increasing the co-ordinated salary to improve the pension entitlements of part-time workers (Box 4).

Currently employees cannot choose their own fund and must change funds when they move jobs. The employer selects the pension fund for all employees, although employees and employers are represented in the fund board. The employer may have different selection criteria or preferences from employees. About 1 in 10 workers changes job every year, generating movement of pension entitlements and thus administrative costs (Roten, 2019). The new pension fund can also reject part of the pension entitlements if its parameters are less generous. Consolidating the number of pension funds would limit changes

between funds and better exploit economies of scale to reduce fees (OECD, 2018a). Switzerland should continue promoting fund mergers through increased scrutiny of costs. A more radical option is to provide fund choice to employees, as in the United Kingdom. It would allow employees to keep their pension funds and could ultimately improve the range of offers by increasing competitive pressures. However, this approach could be costly for pension funds and accompanying measures would also be needed to address risks from behavioural biases and financial illiteracy highlighted in OECD (2018a).

Governance

Good governance and monitoring of pension funds are key to maintaining the second pillar's financial sustainability. With a well-functioning system there is no need to impose pension parameters that distort the system, notably the minimum return. The composition of the investment portfolio across asset classes is limited by regulation. However, nearly half of pension funds have sought exemptions, usually to increase exposure to real estate (Swisscanto, 2018). The rising share of real estate and equities (Figure 12) has offset falling returns from lower, and even negative, bond yields.

Given the heightened incentives for risk taking stemming from the low interest rate environment and high conversion rate, monitoring of asset holdings should be strengthened. Many countries apply the "prudent person principle" to assess investments according to the security, quality, liquidity and profitability of the whole portfolio (OECD, 2015a). A prudent investor rule would push funds to focus on more risk management. Smaller institutions display lower performance (Swisscanto, 2018), which may lead them to take more risks even though they may lack proper risk management expertise. Continued consolidation of pension funds could help mitigate these risks as larger funds can devote more resources to risk management.

The overall coverage ratio of pension funds (assets as a percentage of liabilities) is sound, at 105.5% in 2018 (Occupational Pension Supervisory Commission, 2019). This was down from 110.9% in 2017 because of negative returns. Coverage ratios below 100% must be well communicated and resorbed within five years. Nearly 30% of funds had a coverage ratio below 100% in 2018 according to the Commission. Technical interest rate (or discount rate) assumptions are crucial as they determine liabilities and have decreased quickly in recent years. Although technical interest rates and promised returns have been falling in the past few years, they remain above market rates. For example, average technical interest rates decreased from 2.7% in 2015 to 2.1% in 2018. The share of funds with a rate above 3% was 5% in 2018, down from a quarter in 2016 while more than 20% use a rate below 2%. Promised returns are on average 0.6 percentage points above technical interest rate assumptions, suggesting that they are still too high at many funds. This is related to the high current conversion rate in the mandatory system (see above). The supervisor highlighted that 44% of funds face a significant risk of lowering future benefits (Occupational Pension Supervisory Commission, 2019).

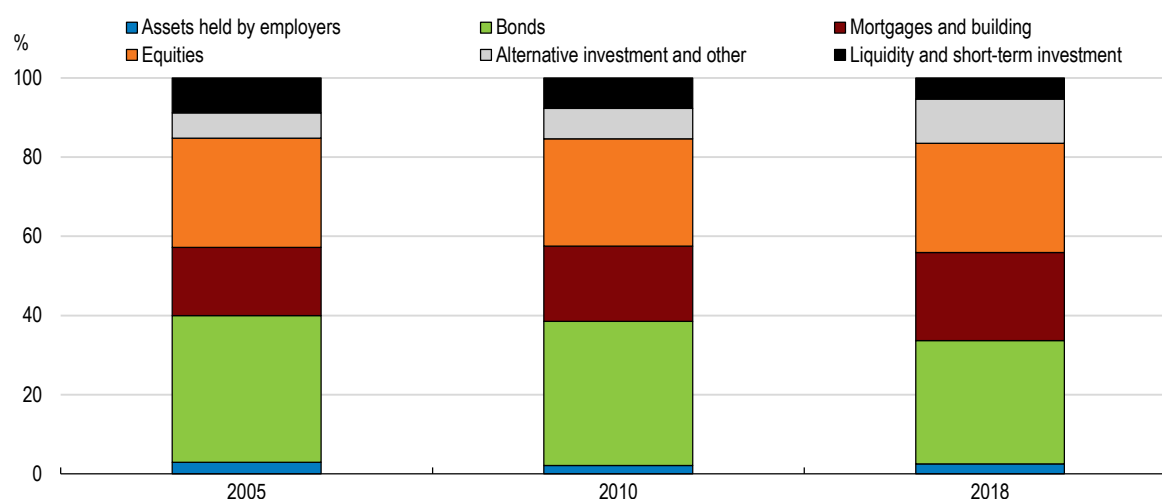
The Commission used a discount rate of 2.1% (average of funds' technical interest rate assumptions) to measure risks to the coverage ratio and found that nearly 30% of funds have high or medium-high related risks (Occupational Pension Supervisory Commission, 2019). The discount rate should be prudent and consistent with market conditions and expectations (OECD, 2016a). The supervisor should put in place a framework that regulates technical interest rate assumptions to avoid wide variation. In Finland and the Netherlands for example, all funds use the same discount rate, decided by the authorities.

Monitoring is currently carried out by individual experts, cantons and national supervisors. Their role should be strengthened, as proposed by the Commission, to address the increasing complexity of funds and improve funds' transparency (Occupational Pension Supervisory Commission, 2019). A more efficient and less costly system would have strict national standards and no need for cantonal supervision. Stress tests could be performed using, for instance, different technical interest rates, scenarios of house price declines and increased longevity. The authorities should improve data collection with respect to timeliness, granularity and coverage to better track exposures, including to real estate (IMF, 2019).

In addition, some public pension funds are treated differently, and nearly half of these have a coverage ratio below 80%. Those funds benefit from a government guarantee and have limited incentives to correct their situation, representing a fiscal risk. The most recent reform strengthened the relevant regulation by requiring these funds to improve their coverage ratio to at least 80% by 2050. Further reforms are clearly required. Ideally, they would be fully capitalised and treated as a standard pension fund.

Only half of all funds used cohort life tables in 2017 (Occupational Pension Supervisory Commission, 2019). Cohort life tables take into account changes over time in age-specific mortality rates, while period life tables do not. For instance, life expectancy for someone born in 2017 is almost 10 years higher with the former approach. Generalising cohort life tables would improve assessment of mortality rates. Additionally, average population mortality rates are higher than those applied for second-pillar beneficiaries, thus further underestimating future payments in the second pillar (Lüske, 2015). Imposing mortality table improvements, as in many OECD countries, would benefit all funds (OECD, 2014c).

Figure 12. The composition of pension fund assets changed after the global crisis



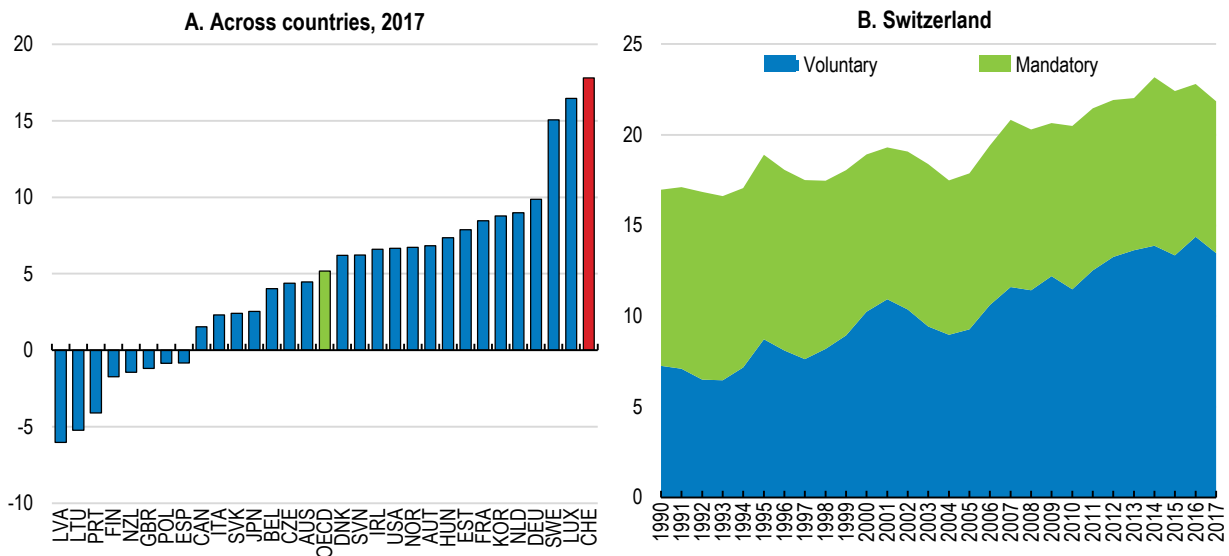
Source: Federal Statistical Office, *Pension Funds Statistics*.

Balancing mandatory and voluntary pension contributions

The overall level of saving, including saving outside the pension system, will determine the adequacy of retirement incomes. Switzerland's household saving ratio is the highest in the OECD (Figure 13, Panel A). At least in aggregate terms, retirees appear to have ample savings since the saving rate does not include second-pillar contributions (as per national account conventions). Taking these into account shows a rising saving ratio over time (Panel B). Many Swiss save voluntarily for pension purposes (Box 5). Swisscanto (2018) estimates that the overall replacement rate from the first two pillars was about 80% over 2008-14 for a worker earning an average salary, above the 60% government objective. However, pension benefits from both pillars have declined by 11% on average in the past four years (Occupational Pension Supervisory Commission, 2019). Given the risks of a lower future replacement rate from pension benefits under the mandatory system, voluntary savings could become essential to maintain adequacy of retirement income. This is especially important in a country with one of the lowest home ownership rates since home ownership is a common way of reducing needed retirement income (Mudrazija and Butrica, 2017).

Figure 13. The household saving ratio is high

In per cent of disposable income



Note: Panel A is the net household saving ratio on a national accounts basis. Panel B is a broader measure.

Source: OECD, *OECD Economic Outlook* database; Federal Social Insurance Office, *Social Insurance Statistics 2018*.

Box 5. Voluntary pension saving in Switzerland

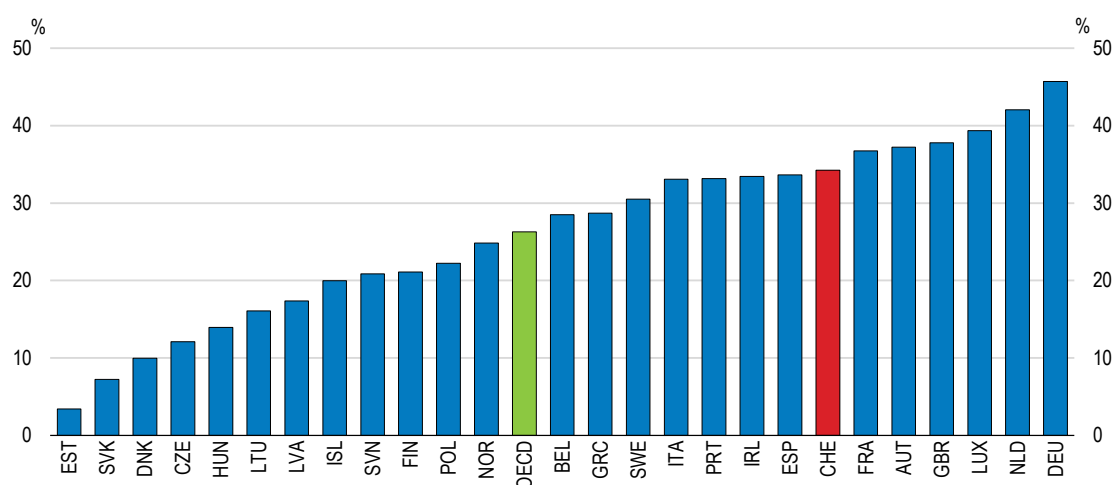
Two vehicles exist in Switzerland to encourage voluntary pension saving:

- The second pillar offers incentives for workers to make additional “extra-mandatory” contributions to their occupational pension assets. According to the Federal Social Insurance Office, about 40% of second-pillar assets are from the minimum contributions set by law. Contributions lower employers’ operating costs and reduce employees’ taxable income. There is no distinction for a pension fund between assets from the extra- and mandatory parts. One of the savings schemes (“1e”) provides individuals with greater investment choice but is restricted to high-income earners.
- A third pillar also offers tax incentives to contribute to pension savings managed by banks and insurance companies. The scheme (“3a”) provides incentives with a maximum contribution of CHF 6 826 per year for those having a second pillar plan or up to 20% of income (maximum CHF 34 128) per year for others (mainly self-employed). Contributions can be deducted from personal income tax. Total assets grew from 5% of GDP in 1995 to 15% in 2017.

Women have lower pension benefits because of lower lifetime incomes due to lower hours worked and a gender wage gap, as well as career interruptions if they have children. In 2017, women represented 38% of second-pillar pension beneficiaries and received around one-quarter of the average pension benefit (according to the Federal Statistical Office). The pension gap with men is high in international comparison (Figure 14). The impact of part-time employment and the gender earnings gap – 15% for the median full-time employee – is strong in the second pillar due to compound interest. Greater communication of pension entitlements would raise awareness about the consequence of part-time work and career breaks on retirement income, facilitating more informed decision-making.

Figure 14. The gender gap in pensions is relatively high

In per cent, 65+ year-olds, 2014 or latest available



Note: The gender gap in pensions is defined as: $(1 - (\text{women's average pension} / \text{men's average pension})) * 100$. Pensions include public pensions, private pensions, survivor benefits and disability benefits. The gender gap in pensions is calculated for people aged 65 and older. The OECD average is an unweighted average of countries shown in the figure.

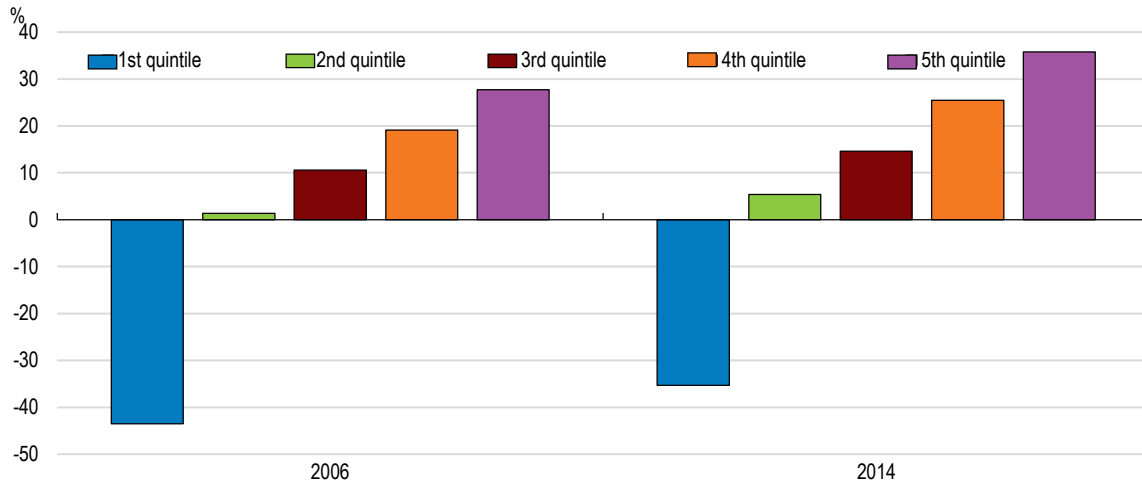
Source: OECD (2017), *The Pursuit of Gender Equality: An Uphill Battle*, OECD Publishing, Paris

Tackling causes of women's lower incomes would boost their retirement incomes. For example, a lack of affordable childcare limits full-time female employment (Thévenon, 2013). A 2003 government programme aimed to boost supply. Although the situation has improved, childcare expenses remain high in Switzerland (OECD, 2017b). Data on costs and government spending are inadequate. Comprehensive statistics on childcare are needed notably to compare costs across cantons and find ways to lower the apparent high cost. Parliament is discussing raising childcare tax deductions in the federal personal income tax system from CHF 10 000 to CHF 25 000. In 2018 the federal government announced spending of CHF 100 million over five years to boost sub-national government subsidies to families and childcare supply. This could be complemented by measures recommended in the 2004 OECD review of work and childcare policies, including: expanding supply of childcare facilities; making school hours more compatible with work; and introducing a time-limited entitlement to part-time employment for parents (OECD, 2004).

The saving rate among working-age low-income households is negative and it is close to zero for the second quintile (Figure 15). There is a risk that these households find themselves with inadequate income in old age. Currently, the old-age income poverty rate is high at 19.5%, well above the 13.1% OECD average. However, income poverty is relative and Swiss average income is high. Thus the extent of material deprivation is low, at 1.8% for the older population, much lower than for the younger population. Furthermore, household wealth can substitute for income, especially when pension wealth is withdrawn as a lump sum. Indeed, recent research suggests that the older population is not at a greater risk of poverty if income and (liquid) assets are considered jointly (Federal Statistical Office, 2018). Still, about 7.5% of retirees report facing financial difficulties, especially women.

Figure 15. The household saving ratio has increased across the income distribution

In per cent of disposable income, average by income quintile, for households with reference person aged below 65



Note: The data are not compatible with national account definitions. The reference person in a household corresponds to the person with the highest earnings.

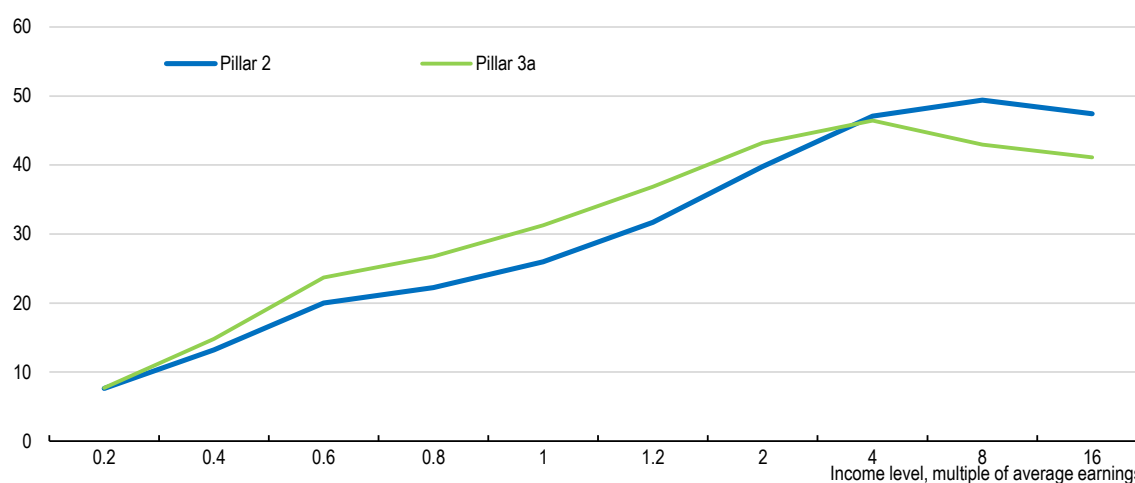
Source: Federal Statistical Office; OECD calculations.

Supplementary benefits to the old-age pension help retirees who are unable to cover basic needs. A 2019 reform tightened the assets threshold for eligibility and raised the allowable rent expenses, which had not changed since 2001. Regular reviews of benefit adequacy, including eligibility thresholds and changes in living costs, would help ensure the right balance between cost effectiveness, targeting and adequacy of the benefits as longevity rises. Policies that support employment of women and disadvantaged groups would lower their risk of becoming poor.

The increase of the top income quintile's saving rate – by 8 percentage points over 2006-14 – drives the rise in aggregate voluntary savings as this quintile accounts for about two-thirds of aggregate saving (Figure 15). Tax incentives play an important role: for an individual earning five times the average wage, marginal effective tax rates on private pensions savings are the most negative in the OECD, at -90% (OECD, 2018b). The tax advantage grows with income (Figure 16). The latest estimate of tax expenditures resulting from the tax treatment of private pension plans (only for 2007) was 0.75% of GDP but the cost will be higher now (OECD, 2018c). Given that high earners already have high saving rates, the authorities should review tax incentives. Maximum tax deductions from second-pillar contributions should be lowered; currently the maximum insured salary is CHF 853 200 (equivalent to a total salary of CHF 878 085). In addition, net tax expenditure estimates (of forgone personal income tax revenue) should be published regularly to increase the transparency of these incentives.

Figure 16. Tax advantages from pension contributions benefit higher-earners

Present value of taxes saved over a lifetime, as a percentage of the present value of contributions



Note: Assumptions: 5% contribution rate for the third pillar (3a), mandatory rates by age for the second pillar; full career starting at age 20; annuity fixed in nominal terms at age 65; inflation 2%, productivity growth 1.25%, real return 3%, real discount rate 3%; the individual lives in Zurich.

Source: OECD calculations.

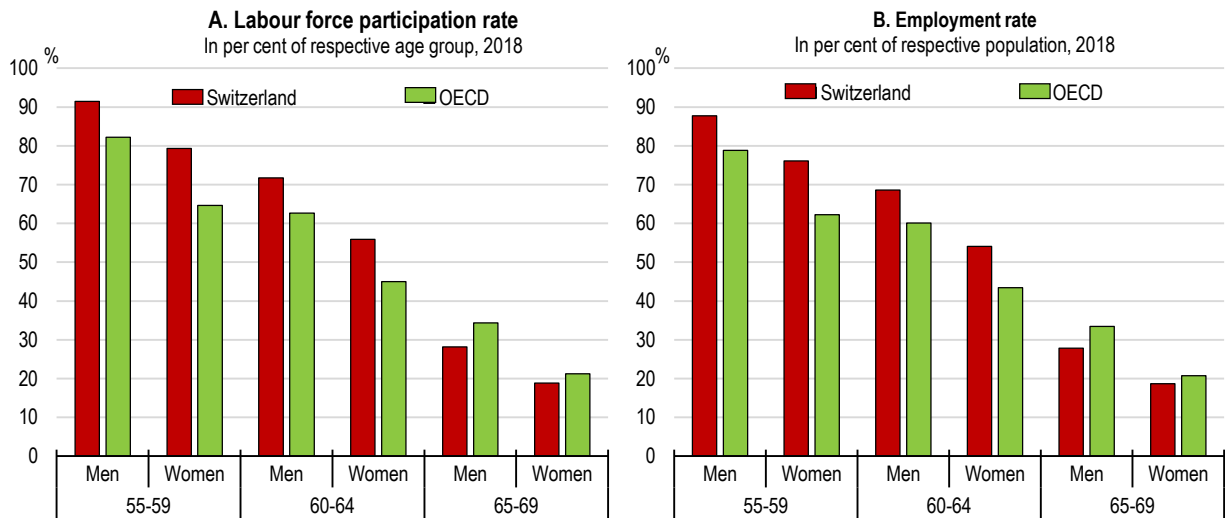
Lengthening working lives

Healthy ageing has made chronological retirement ages outdated, creating opportunities to depart from the standard “three stage life” of study, work and retirement and pursue different work objectives (Gratton and Scott, 2016). Working for longer can also maintain cognitive function and provide social stimulation, lowering the risk of dementia (Dufouil et al., 2014). Lengthening working lives will help manage the economic costs of ageing by adding directly to growth, attenuating skill shortages in some occupations, limiting pension-related public spending and raising tax revenue. Removing barriers and disincentives to working longer is therefore crucial for raising the effective retirement age, including by shifting the tax burden away from taxation of labour income.

Employment rates are high until the retirement age

Under age 65, labour force participation and employment rates are amongst the highest in the OECD but participation declines steeply thereafter, falling below the OECD average (Figure 17). In the past 20 years, the estimated effective retirement age increased in other countries by about three years but was unchanged for Swiss men at 66 years (Figure 18). The retirement age for Swiss women has increased by two years, but less than in other countries. To some extent, this is because effective retirement ages were already high. However, Swiss life expectancy is close to the top of the OECD. One driver for this stickiness has been the relatively high replacement rate (Bütler, 2009; Leisibach et al., 2018). Looking ahead, uncertainty about future returns, the potential fall in future pension benefits discussed above and concerns about financing a longer retirement may incentivise some workers to delay retirement.

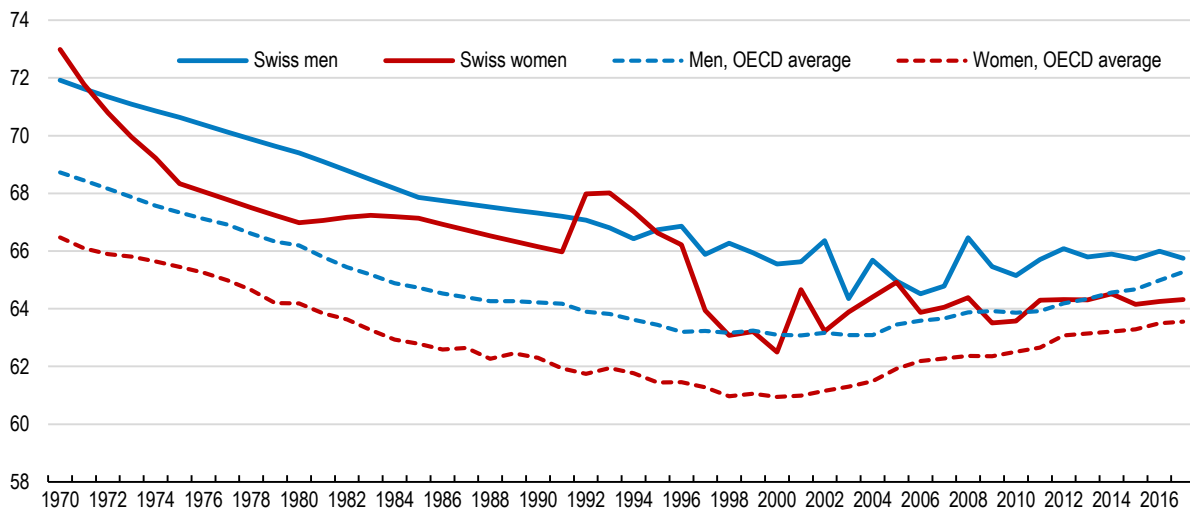
Figure 17. Labour participation is high until age 65



Source: OECD, *Labour Force Statistics* database.

Figure 18. The effective retirement age has flatlined in Switzerland

Based on age of exit from the labour force



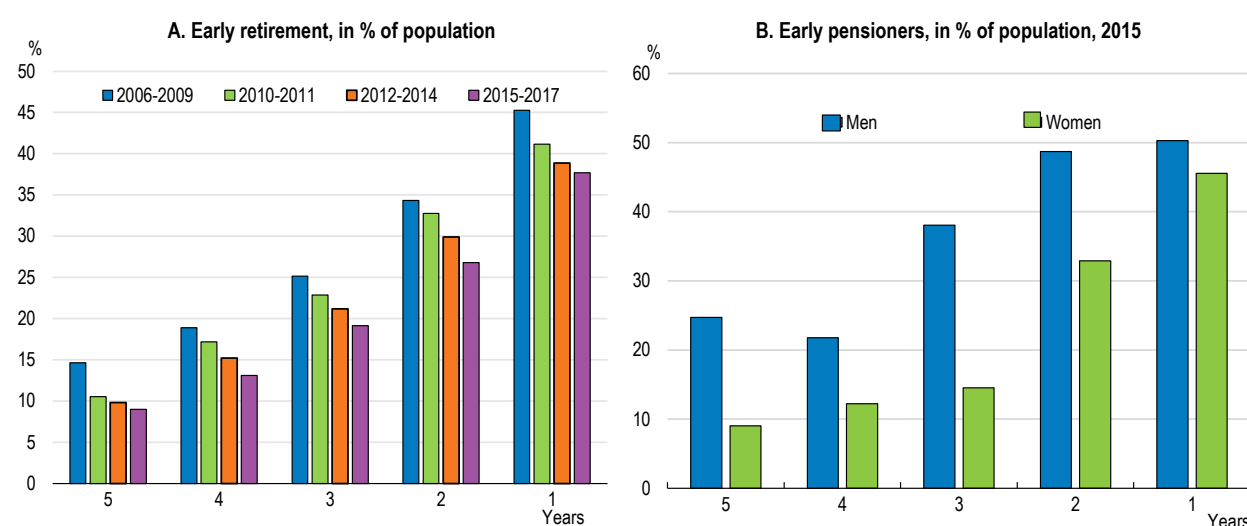
Note: The average age of labour market exit is used as a proxy for the average effective retirement age. It is calculated as a weighted average of (net) withdrawals from the labour market at different ages over a five-year period for workers initially aged 40 and over. It includes extrapolation of data for some countries. These estimates may differ from national estimates.

Source: OECD calculations based on national labour force surveys, the European Union Labour Force Survey and, for earlier years in some countries, national censuses.

Around 38% of all workers retire at least one year before the legal age (Figure 19, Panel A). This is especially the case for men (40% of male workers), for employees (43% of all employees) and in finance and insurance (65% of workers in the sector). The occurrence has decreased in the past decade but remains high. In 2018 43% of Swiss not in the labour force and aged between 55 and 64 were retired, representing nearly 14% of the respective population (SECO, 2019). One important driver is the pension system's settings (Panel B). Three-quarters of early pensioners benefit from a second-pillar pension, even before officially retiring. Early retirement incidence has increased by 16 percentage points since the early 2000s, especially for higher-educated workers as they benefit from a high replacement rate (Dorn and Sousa-Pouza, 2005). The current high pension conversion rate (see above) contributes to replacement rates being sufficient to retire early. The expected fall in the conversion rate also currently increases incentives to retrieve second pillar benefits sooner.

Figure 19. Early retirement is receding but remains common

By years before statutory retirement age



Note: The statistics include only the population that worked until age 50. Panel A uses labour force data. In Panel B, the figures report those who receive a benefit from at least one of the three pillars.

Source: Federal Statistical Office.

Facilitating early retirement appears socially inequitable and increases exposure to longevity risk. Sectoral agreements (like in the construction sector) and disability benefits address health inequalities in a more targeted way. Austria, Belgium, Germany and Finland tightened rules so that the early retirement age increased more than normal retirement age (OECD, 2017e). The earliest age to enter retirement in the second pillar (currently 58 years) could be revised up in line with the first pillar retirement age (62 for women, 63 for men).

The pension system does not encourage employment beyond age 65. In the second pillar, the law stipulates that contributions are not mandatory beyond age 65. Only some pension funds offer the option to postpone receiving pension benefits and postponement is not allowed beyond 70. More possibilities to continue contributing would help those who wish to augment their pension entitlements. In the first pillar, after age 65 workers continue paying contributions for part of the salary above CHF 1 400 per month (a fifth of the average wage), which reduces work incentives for most employees. In addition, an average earner postponing retirement by three years currently contributes around CHF 400 per month during those years to gain about CHF 400 per month later (equivalent to around USD 400 per month). The proposed pension reform (discussed above) envisages decreasing the extra revenue substantially. However, the

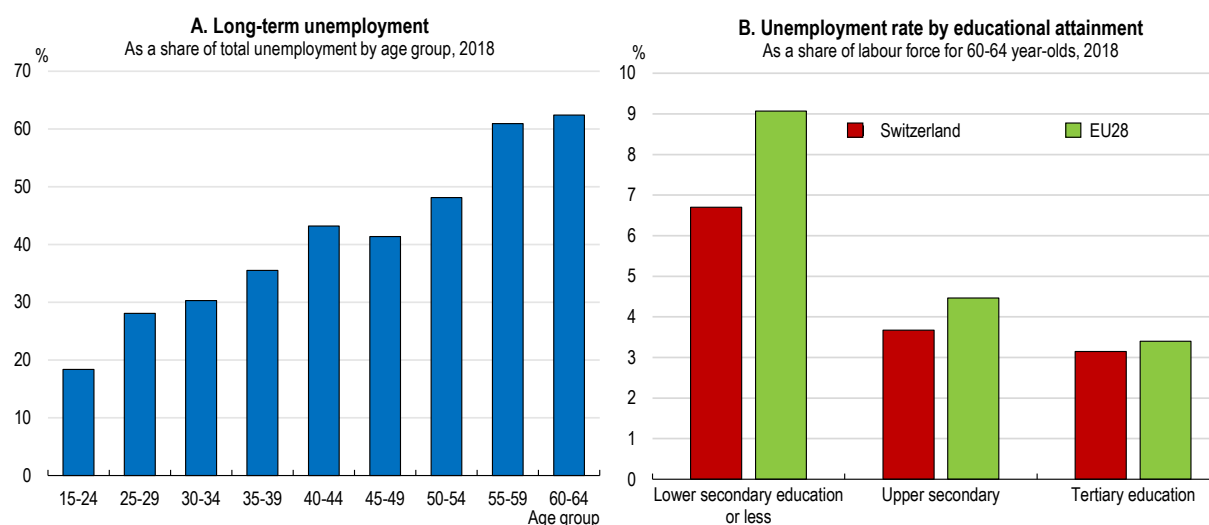
reform also plans to provide the possibility to compensate for gaps in pension rights through contributions after age 65, which would improve incentives.

Senior workers tend to be more expensive for employers. Wages are strongly linked to seniority in Switzerland and pay can exceed productivity (OECD, 2014b). For example, for the same occupation and industry, a 65-year-old worker with 20 years of tenure at a firm receives (on average) up to 15% more than someone with 1 year of tenure (according to the government's wage calculator). The public sector could lead by example. In 2007 Finland finalised a new pay system for civil servants through a collective labour agreement that better links salary with job demands and individual performance (OECD, 2018d). The annual national conference on old-age workers, which gathers social partners and other stakeholders, could discuss ways to introduce greater flexibility into the system and increase older workers' employability, including by removing seniority wages. This would create a stronger link between wage and productivity developments. Greater provision of training to older workers could facilitate this change insofar as it helps them keep up their productivity.

In addition, minimum contributions to the second pillar rise with age, with employers paying at least half. Employee costs can increase substantially at age thresholds (ages 35, 45 and 55); the contribution rate for an average earner jumps 2.5 times between age 34 and 55. The current structure benefits younger workers who may have less leeway to invest in their future retirement. However, Switzerland is the only OECD country with such a mandatory system. Adjusting employer contributions to a flat rate so that only employee contributions increase with age would reduce this disincentive to hire older workers but maintain a progressive rate. If the overall rate of mandatory contributions remains low, a flat rate should not impact younger workers' employment. An alternative proposed by social partners envisages a flatter structure with only two contribution rates (with half paid by employers) (Box 4).

Job loss can be particularly damaging at an older age. While lower than elsewhere in Europe, unemployment rates are higher for older workers with less education and older jobseekers also face a higher incidence of long-term unemployment (Figure 20). For the 55-59 age group the incidence is higher than the EU average. The share of unemployed reaching the end of their benefits without re-employment also increases with age: at 23% on average, it reaches 27% and 31% for the 45-54 and 55-64 age groups, respectively (SECO, 2019). Swiss regional employment offices report that the main difficulties for re-employment of those aged 50 and over are: employers' preferences; employees' lack of confidence and skills to improve applications and résumés; narrow specialisation; lack of lifelong training; reservation wages; health status; and weak computer skills (Egger, Dreher & Partner AG, 2019). Recourse to social assistance amongst those aged 55-64 has increased to 2.9% in 2017 from 2.2% in 2011, but it remains lower than for the whole population (3.3% in 2017).

In May 2019, the government launched a reform package that includes additional spending on activation policies for older workers (Table 4). However, average spending on activation programmes per unemployed will remain well below leading OECD countries (see below). In Switzerland, investment in labour market programmes for the unemployed differs by age and by canton providing opportunities to promote best practices. Average duration of such programmes ranged from 31 to 67 days for those aged above 50, and from 30 to 115 days for those aged below 50 (Egger, Dreher & Partner AG, 2019). Given the profile of unemployment, intervention should also be earlier, at age 50 or 55. For example, in Denmark, unemployed over 50 are offered an activation programme within three months of unemployment compared to six months normally (OECD, 2018e).

Figure 20. Finding work is more difficult for older jobseekers, especially the less educated

Note: In Panel A, long-term unemployment is unemployed persons for at least one year.

Source: Eurostat, Labour Force Statistics.

Table 4. New measures to strengthen the local labour force

Measure	Target group	Annual cost (CHF)
Strengthen pre-apprenticeship training (currently available to refugees) and extend it to immigrants who have not completed secondary school	Recognised refugees, provisionally admitted persons, adolescents and young adult immigrants who have not completed secondary education	15 million / 13 000 per person
Pilot programme providing work induction allowances to employers hiring refugees and those admitted on a temporary basis	Refugees and provisionally admitted persons whose placement remains difficult	3.8 million / 12 000 per person
Free situation analysis and career guidance for workers aged 40 and over will be piloted in 2020-21 and extended to all cantons over 2021-24	Workers aged 40 and over	6.6 million for pilot 7.6 million thereafter
Consistent recognition of existing skills and prior learning for professional certification programmes to enable adults to acquire a vocational qualification more efficiently.	Adults aged 25 and over	0.6 million
Additional funding to cantons to enable regional job centres to better support jobseekers who are difficult to place	Jobseekers who are difficult to place, particularly seniors who do not have unemployment insurance benefits	62.5 million
Access to training for jobseekers aged over 60 whose unemployment insurance has expired	Jobseekers over 60 who have not found a new job after their unemployment benefits expired (around 2 600 people)	21 million
"Transitional" benefit for unemployed persons aged 60 or over, subject to conditions including assets excluding the main residence below CHF 100 000 for singles or CHF 200 000 for couples	Unemployed workers who exhausted unemployment benefits at the age of 60 or over	30 million in 2021 / 230 million in 2030

Note: Monetary amounts shown relate to the Confederation and are in constant prices. The transitional benefit will be discussed in Parliament in early 2020.

Source: Swiss Confederation (2019), *Fiche d'information : mesures pour renforcer l'encouragement du potentiel de la main-d'œuvre en Suisse* [Factsheet: Measures to strengthen the promotion of the potential of the workforce in Switzerland]; *Message concernant la loi fédérale sur les prestations transitoires pour les chômeurs âgés (version provisoire)* [Message regarding transitional benefits for elderly unemployed (preliminary version)].

Welfare benefits should not be pathways to early retirement. The 2019 reform package will create a new benefit scheme for jobseekers above age 60, subject to an assets test and other conditions. The scheme will be costly and will likely reduce incentives to undertake training and to search for work below age 60; it should be reconsidered. Alternatively, conditions should expand to requirements to participate in training or community service, or continue looking for a job. The extended period of unemployment benefits for older people (a bonus of six months both at 55 and four years before the legal retirement age) is also not recommended, as explained in OECD (2019e). Denmark removed a similar scheme in 2011. Extended unemployment and transitory benefits will allow someone aged 58 to wait for official retirement with government support and reduce incentives to undertake training at younger ages. In Finland, the availability of unemployment benefits from age 61 until the statutory retirement age has increased inflows to unemployment substantially because employers tend to target dismissals to eligible workers and because those workers voluntarily choose to use the “unemployment tunnel” (OECD, 2018f).

The invalidity scheme is also a pathway for retirement. Past reforms successfully activated people with disabilities, including older workers (OECD, 2014b). The number of recipients decreased by 1.3% per year on average over 2007-17. However, a parallel system of extraordinary allowances reserved for Swiss nationals who are close to qualifying for the normal allowance increased by 3.2% annually over that period. The authorities should ensure that everyone faces identical eligibility criteria.

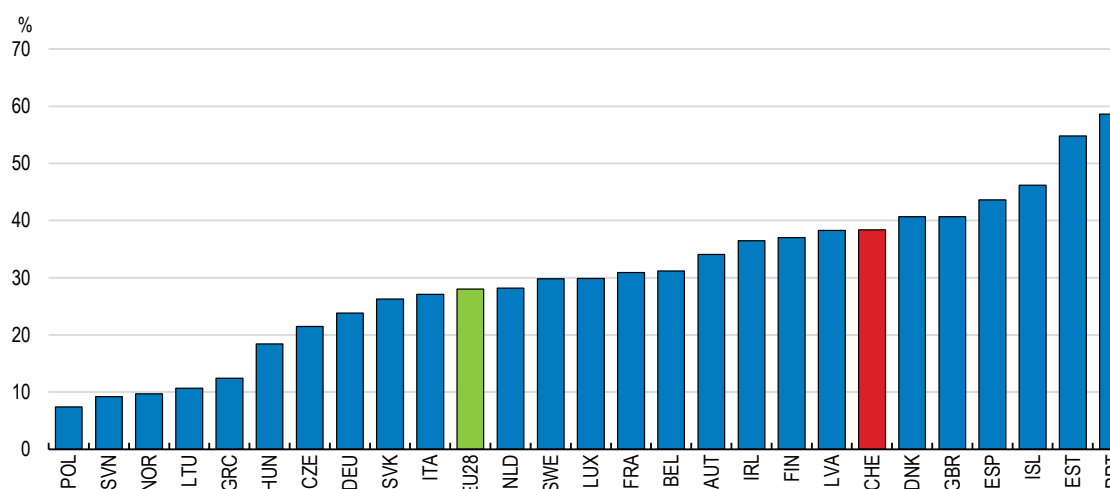
In the context of digitalisation, new tools, tasks and jobs will emerge over time requiring different skill sets, which call for upskilling and reskilling over the life course and well-adapted adult learning systems (OECD, 2019c). Because technological advances can reduce the physical demands of jobs and make jobs more flexible, older workers stand to benefit. Swiss regional unemployment offices also highlight the importance of lifelong training to lower the risk of unemployment for older workers and to help offices match their training offer with employers’ needs (Egger, Dreher & Partner AG, 2019). However, adults with low skills have usually lower employment opportunities at older ages, because their skills are more at risk of being outdated and they tend to participate less in ongoing training (OECD, 2017b). Eurostat data show that in 2018 about 44% of workers with a tertiary education participated in training, far above other European countries. But the participation rate for workers without upper secondary education was only 11%, below the Nordic countries and Iceland.

In 2018 Switzerland launched a *Basic Skills in the Workplace* programme, targeting less-educated workers and including IT skills, which reached about 1 500 participants in the first year. If it is effective, it should be expanded. The May 2019 reform package includes free career guidance and skills assessment after age 40 for all adults, which should help promote the take-up of training for those in need. Subsidies or vouchers could encourage targeted groups to invest in training (OECD, 2017b). Better recognition of existing skills through validation and certification would lower barriers to formal training in Switzerland (OECD, 2014b). In 2019, the federal government announced that it will provide cantons with guidelines and CHF 3.2 million to promote professional certification which should improve skills recognition and further formal training. Monitoring and sharing experiences across cantons are essential for success.

The incidence of involuntary retirement is relatively high in Switzerland (Figure 21). In addition, 6% of job advertisements have age caps (Buchs and Gnehm, 2018). Applications are also sometimes filtered out by age. Employers may have stereotypes that are prejudicial to hiring older workers (OECD, 2014b). Retaining older workers depends on the balance of experience, knowledge transfer and skill shortages against concerns about lower productivity and adaptability. Negative employer perceptions can lead to mandatory retirement stipulated in contracts or forced retirements. For example, civil servants need an extension to their contract at the legal retirement age to continue working. While the Constitution rejects all forms of discrimination, there is no law preventing age discrimination. It should be prohibited, as in all other OECD countries (OECD, 2018g). To ensure effectiveness, this should be complemented by enforcement measures and campaigns to change social norms (OECD, 2014b). In Sweden the Equality Ombudsman is charged with monitoring compliance with the Discrimination Act. In the Netherlands, vacancy announcements are screened.

Figure 21. Involuntary retirement is relatively high

Share of pensioners aged between 50 and 69 who would have preferred to stay longer in employment, 2012



Source: Eurostat.

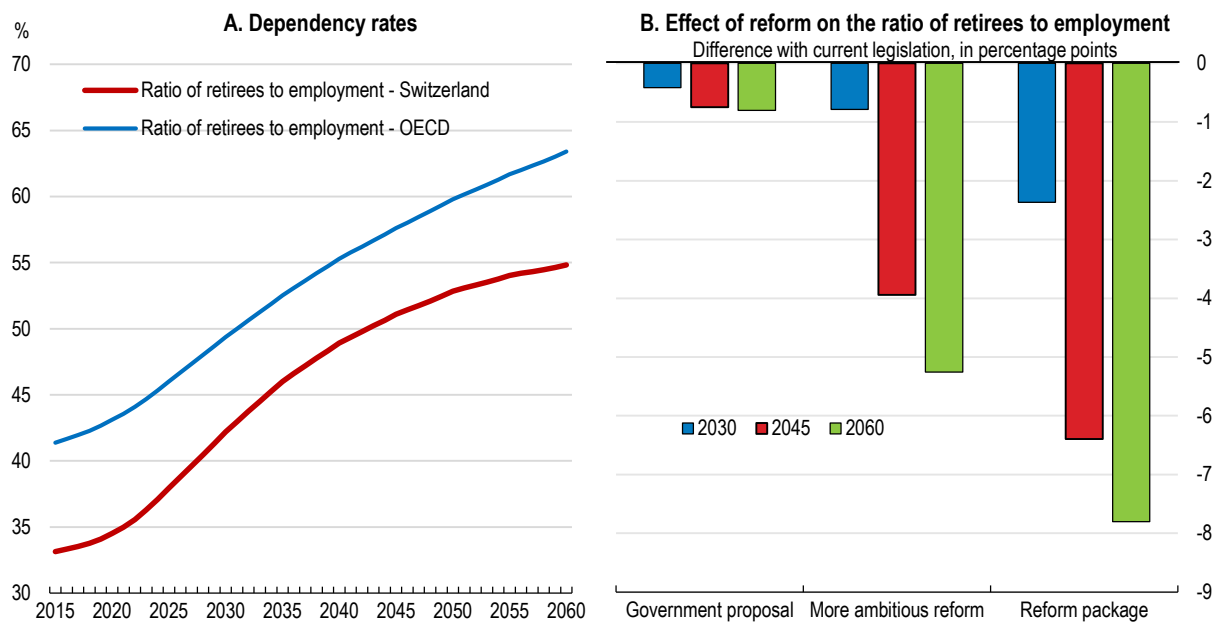
Shortages are already evident for some occupations and will worsen as ageing bites and immigration slows, unless changes in workplace culture and practices encourage older workers to remain in the workforce longer. In 2019 the authorities organised the fifth annual conference on old-age workers. It raised awareness of the risk of shortages but more direct campaigns could force firms to confront and better prepare for an ageing workforce. New forms of work could help align older workers' preferences with their abilities. Less physical and more part-time work and consultancy could facilitate phased retirement. Adopting new technologies could facilitate teleworking – in 2018 only 10% of the employed teleworked in Switzerland compared to more than 30% in Nordic countries – and reduce physical work. Preventive health and safety programmes also improve employability. Switzerland could use its annual conference to establish a framework similar to *Strategy55+* in Spain. This strategy, established in 2011 after consultation with social partners, proposes preventive measures supported by training, information, research and occupational risk assessment (OECD, 2018h).

Switzerland has room to ease the transition to retirement through greater workplace flexibility. Reducing hours could enable some workers to remain in the workforce, if they desired: in 2012, 9% of older workers reduced working hours before retirement compared to 17% in the Netherlands (according to Eurostat data). Some Swiss early retirees continue working: they usually receive full retirement income from the second pillar and continue contributing to the first pillar. A previous survey reported 30% of them doing so, highlighting the potential of phased retirement (Dorn and Sousa-Poza, 2005). Workers continuing beyond 65 typically reduce their hours: average hours are 84% of a full-time position between age 55 and 64, which declines to 45% for the 65-69 age group (SECO, 2019). Providing partial pension benefits while working beyond the statutory retirement age would raise employment rates beyond age 65: it is currently only possible in some pension funds and not at all in the first pillar. In Austria for example, retirees can continue working and their pensions are recalculated each year (OECD, 2017e). The proposed reform to the first pillar is welcome in that regard (Box 3).

Implementing a package of reforms now could lift the effective retirement age and limit the economic costs of ageing. The ratio of retirees to employed workers will increase steeply in the next decades (Figure 22, Panel A). According to OECD simulations, the government proposal to increase the female retirement age to 65 by 2026 will have a negligible impact on the ratio of retirees to employed workers (Panel B). A more ambitious reform that increased the retirement age to 67 by the early-2030s and in line with half of the increase in life expectancy thereafter could reduce the ratio by 5 percentage points in 2060. A reform

package also comprising increased spending on labour market activation policies and labour market reforms to increase the retirement age by six months could raise the older-worker employment rate by about 8 percentage points by 2060 (to 57%, which would still be below countries like Iceland and Japan in the OECD's long-term scenarios). It would also boost GDP by 10% in 2060, offsetting the direct effects of population ageing (Figure 2, Panel A).

Figure 22. Reforms could alleviate economic effects of the rising dependency rate

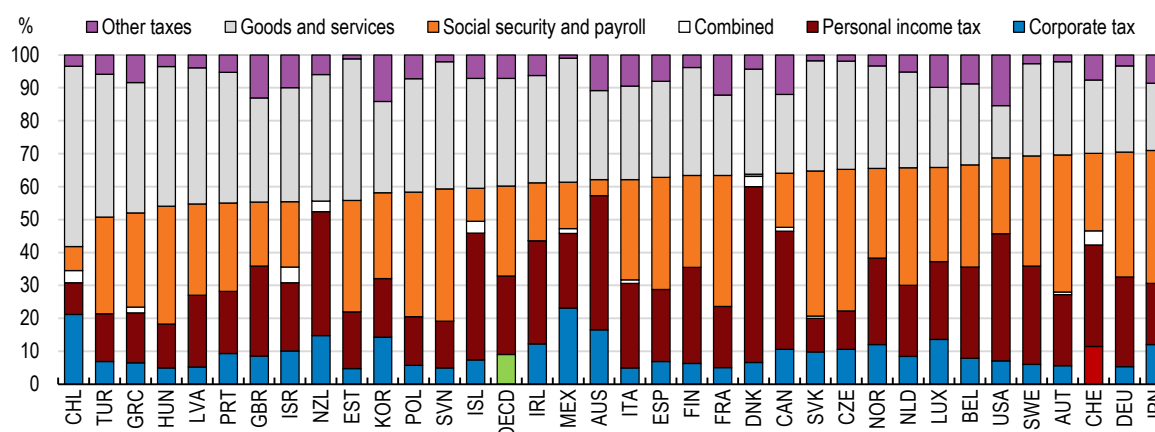


Note: The age-based dependency rate is the ratio of the population above the legal retirement age to the population aged between 20 and the retirement age. Panel A describes the situation based on current legislation. In Panel B, the “government proposal” sets the retirement age at 65 for both sexes by 2026. The “more ambitious reform” also increases the retirement age by three months every year to 66 in 2030 and 67 in 2034, and by half of the expected gain in life expectancy thereafter (one month every two years thereafter to reach 68 in 2058). The “reform package” adds an increase in active labour market policies spending by two-thirds (to the average of Denmark, Hungary, Sweden, Germany and Luxembourg) and an increase in the effective retirement age to proxy for prohibiting age discrimination and removing the additional duration unemployment benefits for older workers.

Source: Federal Statistical Office; simulations based on the OECD Economics Department Long-term Model.

Revenues rely on labour taxation at all levels of government

Switzerland relies more heavily on direct taxation, particularly personal income taxation, than most OECD countries (Figure 23). But taxation of labour income acts as a disincentive to work (Akgun, Cournède and Fournier, 2017; Arnold et al., 2011). Cantons and municipalities, which will bear the brunt of the ageing-related spending pressures (Brändle, Colombier and Philipona, 2016), rely on personal income taxation for 60% and 66% of their tax revenues, respectively. Ageing may also pressure revenues, creating a need for higher tax rates. The economic literature on the effects of ageing on revenues is fairly limited and the outcomes depend heavily on modelling assumptions (Woodland, 2016). Ageing will likely weigh on tax revenues from labour income. However, the effects of ageing on revenue from taxing capital income and consumption are difficult to predict (Nerlich and Schroth, 2018). In Switzerland older households tend to have higher consumption spending, which may support revenue from consumption-based taxes.

Figure 23. The tax mix is tilted towards direct taxation

Note: Countries are sorted according to the share of direct taxation including social security contributions. Data are for 2017.

Source: OECD, *Revenue Statistics* database.

Previous OECD Economic Surveys of Switzerland have recommended reducing distortions in the Swiss tax system by shifting the tax base away from labour-related taxation and towards more indirect taxation as well as improving the design of individual taxes (OECD, 2012). Such reforms would better equip government finances for the challenges ahead, and also boost growth. Simulations calibrated for Switzerland highlight this clearly: funding higher projected pension spending through labour taxation could reduce GDP per capita by 20% in the long run whereas raising VAT and the retirement age would halve this effect (Box 6). Given the difficulties in changing taxation in Switzerland, with the possibility (or requirement for some taxes) of a referendum, and the considerable uncertainties around future revenues, revenue projections and discussion should be included in the government's regular long-term fiscal sustainability reports to help communicate the need for reform. A reform would also require changes to the fiscal equalisation formulae that distribute revenue between and within levels of government.

Box 6. Simulated benefits of comprehensive reforms

Keuschnigg (2018) conducts simulations using an overlapping generations model calibrated for Switzerland. He explores the effects of ageing on pensions, taxes and social contributions and contrasts the economic effects of a "passive scenario", where labour taxation increases, against more comprehensive reforms (Table 5). A reform that raised the VAT rate by four percentage points and delayed retirement by three years could reduce the need for labour taxation, thereby halving the decline in GDP per capita. More extensive reforms that raised employment could remove the need for any increase in labour taxation.

Table 5. Simulated effects of different tax and pension policy reforms

Long-run difference from initial steady state				
	Passive scenario (1)	With VAT financing and delayed retirement (2)	With VAT financing, delayed retirement and pension reforms (3)	With all reforms, increased monitoring of unemployed and training (4)
Labour taxation (% pts)	7.1	1.9	0.5	0.1
Implicit PAYG tax (for employers and employees) (% pts)	5.9	0.9	-1.5	-1.8
Effective tax on hours worked (%pts)	9.7	2.0	-1.0	-1.2
VAT (% pts)	0.0	4.0	4.0	4.0
Hours worked (%)	-1.6	-1.2	-0.8	-0.8
GDP per capita (%)	-19.9	-9.9	-7.5	-5.7

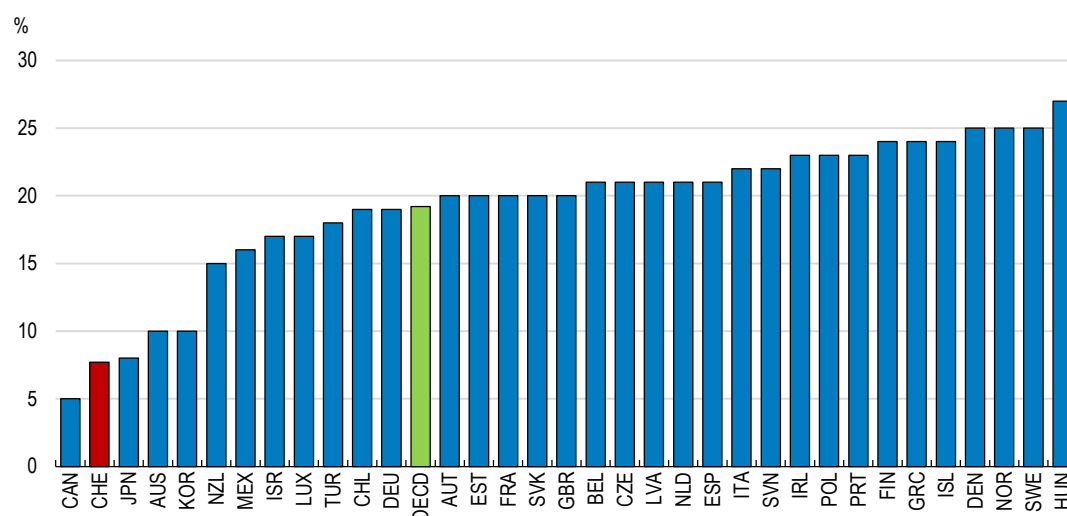
Note: Column 2 includes an increase of three years in the retirement age. Column 3 adds pension reforms that eliminate the ceiling in the first pillar and stop accumulation of pension entitlements when unemployed. Column 4 adds tighter monitoring of the unemployed and public investment in promoting training

Source: C. Keuschnigg (2018), "Aging, Taxes and Pensions in Switzerland", in R. Holzmann and J. Piggott (eds), *The Taxation of Pensions*, MIT Press, Cambridge.

There is considerable scope to expand VAT. Switzerland's standard VAT rate of 7.7% is currently the second-lowest in the OECD and well below the 20% OECD average (Figure 24). The government has been discussing raising the rate for many years, and proposes to raise it by 0.7 percentage points as part of planned pension reforms. However, change has proved difficult partly because the rate is in the Constitution and changes must pass a referendum. In 2018 the VAT rate fell because a previous increase expired. VAT is an efficient tax base because it does not affect saving incentives, has smaller work disincentives than labour income taxation and exports are zero-rated (with no VAT payable but VAT paid on inputs can be recovered). Cross-country analysis suggests that the current rate is likely more than 10 percentage points below the level at which high rates would reduce VAT revenues (Akgun, Bartolini and Cournède, 2017). Leakage due to fraud and tax evasion appears low: in 2016 revenue collected amounted to almost 70% of potential revenues (proxied using consumption and the standard rate), one of the highest ratios in the OECD (OECD, 2018i).

Broadening the VAT base would boost revenues, reduce administration costs and improve efficiency. Reduced rates (2.5% and 3.7%) and exemptions apply to a range of goods and services. Evidence from other OECD countries shows that reduced rates for goods like magazines and cultural services disproportionately benefit high-income households (OECD/KIPF, 2014). VAT exemptions are also inefficient and can have unintended consequences; for example, exemptions for pesticides and fertilisers likely encourage over-consumption. A 2007 study showed that the standard rate could be 1.1 percentage points lower with a broader base (Swiss Federal Audit Office, 2007). Distributional concerns could be addressed through reductions in income taxes for lower-income households, offsetting social security contribution credits or larger and better targeted subsidies for mandatory health insurance premia, as recommended in OECD (2012).

Figure 24. Switzerland's value-added tax rate is the second-lowest in the OECD



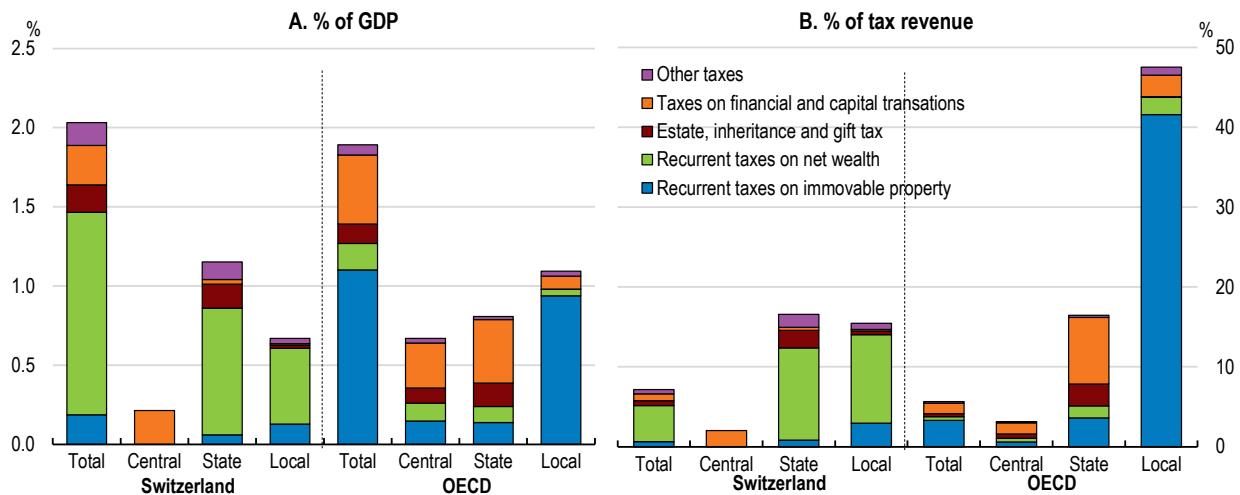
Note: Data are for 2018.

Source: OECD, *Revenue Statistics* database.

Increasing revenues from recurrent tax on immovable property could make room for lower personal income taxation. Although property tax revenues represent around 2% of GDP, which is close to the OECD average, the composition differs, with greater reliance on recurrent taxes on net wealth rather than on immovable property (Figure 25). The latter is particularly common for local governments in other countries. While net wealth taxes can help reduce inequality, they are less efficient than a combination of broad-based capital income taxes and inheritance and gift tax (OECD, 2018j). In particular, wealth taxes create disincentives to accumulate wealth and incentives for tax optimising behaviour and may lower output (Cournède, Fournier and Hoeller, 2018). Evidence from Switzerland suggests households are highly sensitive to even a small (0.1%) increase in the tax rate but will employ tax avoidance strategies rather than moving to a different jurisdiction (Brühlhart et al., 2016).

Recurrent taxes on immovable property can help offset the pressures that ageing will place on revenues in municipalities with faster demographic change (Figure 4). These taxes are also difficult to avoid and because the tax base is less mobile than income or capital, they can also limit tax competition. Cantons should consider assigning these property taxes fully to municipalities. Although such taxes can be unpopular, these reforms would give municipal governments more flexibility to meet future spending challenges. Increases in taxation of immovable property can be designed to limit the effect on low-income households, particularly the elderly, by deferring tax payment or using special credits (Blöchliger, 2015). Given the evidence that inheritance taxation is not distortionary and improves equality, cantons could shift some wealth taxation to inheritance taxation (Akgun, Cournède and Fournier, 2017).

Figure 25. The property tax mix differs considerably from the average OECD country



Note: Data are for 2017 for Switzerland and 2016 for the OECD average. The OECD average is unweighted.
Source: OECD, *Revenue Statistics* database.

Greater use of environmentally-related taxation could generate additional revenues and incentives to green the economy. These taxes are currently almost entirely on energy use and motor vehicles. They raised the equivalent of 1.6% of GDP in 2016 compared to around 2% in the median OECD country. Taxation could help reduce the environmental cost of transport, which accounts for 40 per cent of greenhouse gas emissions from energy use. Swiss new cars have the highest CO₂ emissions in all EU-European Free Trade Association countries. The federal tax on vehicle purchases is currently uniform except for electric vehicles. Linking the rate to the level of pollutants (including CO₂ and NO_x) would strengthen price incentives. Israel currently applies a vehicle tax linked to five pollutants (OECD, 2016b). Nine cantons currently link their annual vehicle taxes to CO₂ emissions. A redesigned federal structure could help more cantons to link these annual taxes to cleaner cars. Other local taxes and charges could further boost sub-national government revenues.

Road pricing takes different forms. There is currently a low motorway toll on highways and freeways and cantons may apply to charge road tolls for specific use, such as infrastructure. The heavy goods vehicle tax appears to have helped shift traffic from road to rail but there is scope to increase it further (OECD, 2017f). Congestion charging, as in other cities like London and Milan, can reduce traffic and air pollution. Mobility pricing was piloted over 2011-15. The authorities are currently undertaking an impact analysis using the canton of Zug as an example. Expanding the coverage of the distance-based transport tax beyond heavy vehicles and introducing congestion charging would price road use more effectively (ITF, 2018, OECD, 2017f). This could also offset the diminishing effectiveness of fuel pricing in capturing negative externalities from congestion and road use as electric vehicles become more popular (van Dender, 2019). Decreasing tax benefits associated with a company car would diminish incentives for employees to take part of their salary as a car and reduce forgone revenues. The 2017 *Environmental Performance Review of Switzerland* pointed to the environmental benefits of broadening the tax on volatile organic compounds to include low emitters, removing exemptions to the CO₂ tax and imposing higher fees for waste disposal (OECD, 2017f).

Coping with rising demand for health care and long-term care

Population ageing will increase demand for health and long-term care. Older Swiss are in better health than their counterparts in most other OECD countries, thanks to higher incomes, healthier lifestyles and quality health care. Life expectancy at birth is the second-highest in the OECD and measures of quality are above EU averages (OECD/EU, 2018). However, this comes at a higher cost than in countries with similarly good (or better) outcomes (Figure 26, Panel A). Moreover, health care spending has grown by 1.4% of GDP since 2009 whereas it has been contained in countries with similar institutional characteristics – like Germany and the Netherlands – and in the United States, the only OECD country with higher expenditure. Households largely bear the cost: out-of-pocket payments are the highest in the OECD (Panel B). Households must also purchase health insurance from private providers, which finances around 40% of spending (Box 7).

Box 7. Key features of the Swiss health system

The Swiss health care system is highly decentralised with the 26 cantons shouldering major responsibilities for securing service provision, supervising providers and ensuring affordability through various subsidies (Table 6). Some cantons have delegated responsibilities such as long-term care to municipalities. The number of actors in the system makes co-ordination particularly important. The Swiss Conference of Cantonal Ministers of Public Health co-ordinates between cantons. The National Dialogue on Health Policy co-ordinates policy between cantons and the Confederation.

Table 6. Key roles in the health and long-term care system

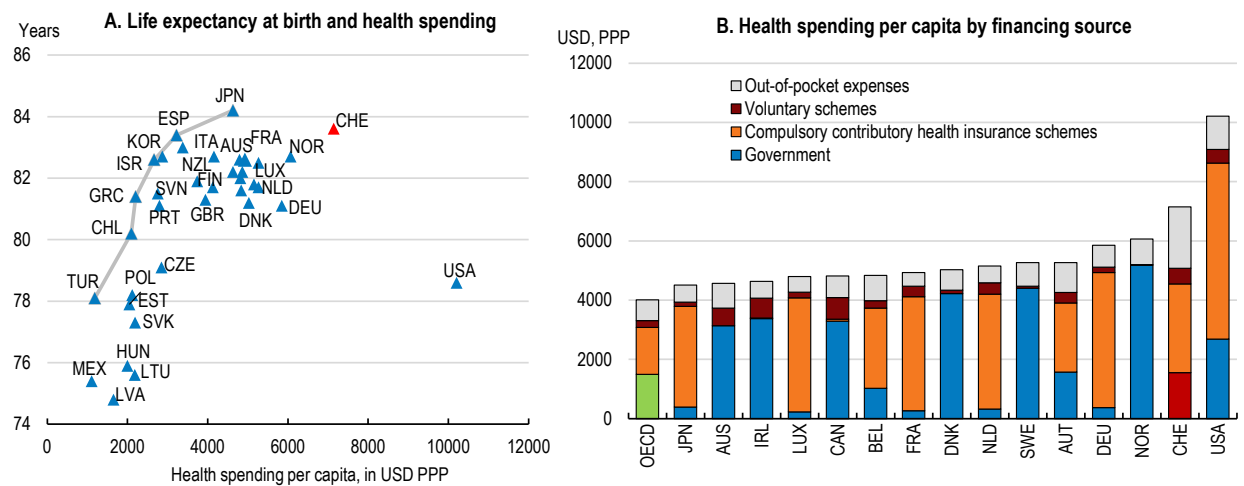
	Financing	Service provision and other responsibilities
Confederation	Legislative responsibility on financing of mandatory health insurance (LAMal) Subsidises low-income households' mandatory health insurance (with cantons) Pays a helplessness allowance	Legislative responsibility for quality of long-term care, pharmaceuticals and medical devices, public health, research and training Health worker immigration
Cantons	Large share of inpatient care financing Subsidise low-income households' mandatory health insurance Pay residual costs of health-related long-term care Pay supplementary benefits to the old-age pension May subsidise long-term support services	Securing provision, sometimes directly (e.g. most hospitals, construction and running costs of long-term care) Co-ordinate prevention and health promotion activities Issue and implement legislation Train health workforce Set tariffs if providers and insurers do not agree
Municipalities	Varies depending on canton	Depending on the canton, may run nursing homes or contract such services
Insurers / associations of insurers	Negotiate tariffs with providers (if applicable)	
Individuals	Contribute to the cost of insured benefits they receive usually via deductibles and retention fees. For long-term care costs patients' contributions are capped at 20% of health insurers' contribution. Pay long-term support service costs including board and accommodation in long-term care	Provide informal care services for others

The most important piece of legislation is the Federal Health Insurance Law (“Loi Fédérale sur L’Assurance-Maladie”, or LAMal). From 1996, it introduced universal health coverage through mandatory health insurance with insurance premia subsidised for social assistance recipients, children and some low-income households and expanded the scope of benefits covered. It also aimed to contain rising costs. Individuals choose amongst competing health insurers, which are not allowed to make profits from their basic health insurance business. Insurance premia are community-based and determined by age (three categories), gender and canton with some risk equalisation across insurers to compensate for differences in their members’ risk profiles. Insurers can reduce premia by offering higher deductibles, up to a limit. There has been substantial growth in managed care insurance plans that restrict access to a specified network of providers.

Source: I. Sturdy (2017), *The Swiss Health Care System*, International Health System Profiles, The Commonwealth Fund; S. Boes, S. Mantwill and T.K. Wicki (2018), *The Health Systems and Policy Monitor: Switzerland*, European Observatory on Health Systems and Policies; OECD/WHO (2011), *OECD Reviews of Health Systems: Switzerland 2011*.

The government’s *Health2020 Strategy*, launched in 2013, aims to address challenges associated with ageing and rising costs and to make the system more people-centred. However, the multitude of stakeholders, including 26 cantons, complicates reform (Table 6). Long-term care is even more complex because some services fall outside of the health care system and are financed by users. Financing and provision will face challenges as demand expands (Federal Council, 2016).

Figure 26. The Swiss health care system is high quality but costly



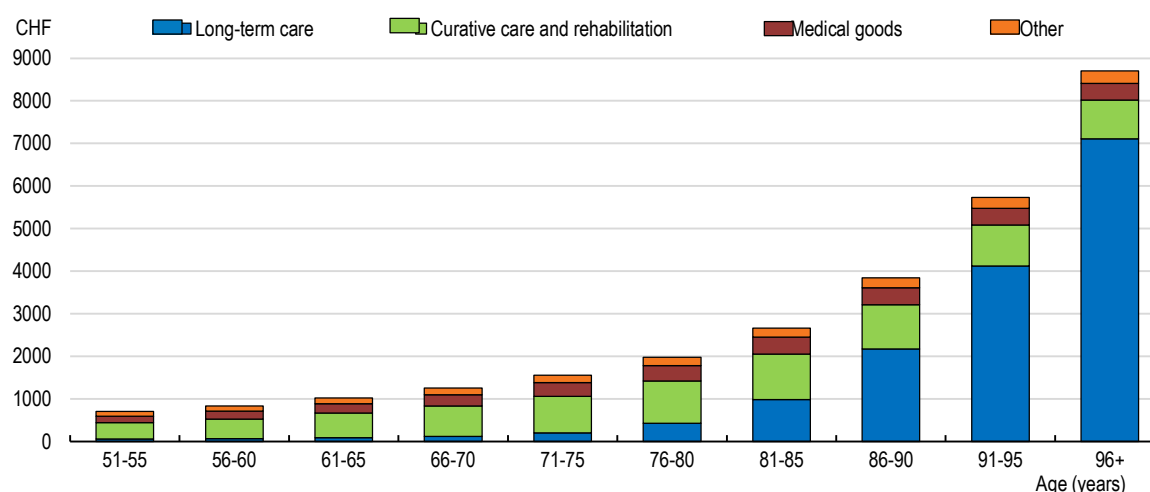
Note: Data are for 2017. In Panel A the line shows the countries with the highest life expectancy at different levels of spending. In Panel B only countries with expenditure above the OECD (unweighted) average are shown.
Source: OECD, *Health Statistics* database.

Ageing will push up costs and inequality

The average cost of health care rises steeply at older ages (Figure 27). In 2016 around one-fifth of spending was accounted for by the 4% of the population aged over 80, reflecting high costs of long-term care, including palliative care. However, non-demographic factors drive per capita spending growth (Lorenzoni et al., 2019). These include rising incomes, the spillover of real wage growth from other sectors of the economy with faster productivity growth and technological progress that adds to demand. A shift-share analysis for Switzerland confirms that demographic change explains less than one fifth of the growth in real health care spending per capita over 2011-16. Nonetheless, the growing number of elderly will drive up overall spending in coming years. Combined with varying needs, this trend will expand demand for long-term care, as discussed below.

Figure 27. Curative care and long-term care needs drive higher costs at older ages

Annual health care costs per capita, 2016



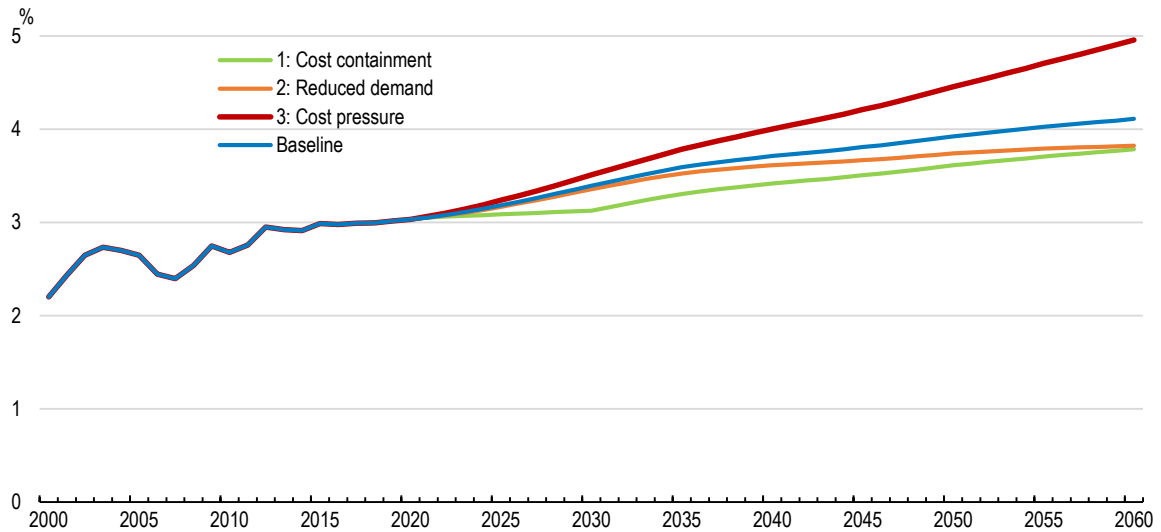
Note: "Other" comprises spending on ancillary services, prevention and administration.

Source: Federal Statistical Office.

Simplified projections for public health expenditure that take into account the elderly population share and non-demographic trends suggest that it will increase by 0.4 percentage points of GDP by 2030 and 1.1% by 2060 (Figure 28). These projections are lower than more detailed national projections which project spending to grow by 0.7 percentage points of GDP by 2030 (Brändle and Colombier, 2017). Stronger reforms to enhance the cost-efficiency of care in line with past efforts or reduce demand would further curb public spending and reduce pressure on households (Scenarios 1 and 2). By contrast, weaker productivity growth in health care relative to the overall economy would raise the burden of health care spending (Scenario 3). These scenarios highlight the importance of policies to contain the demand and cost of care by putting Switzerland on a healthy ageing path.

Figure 28. Public health spending will rise and cost containment is key

Public health and long-term care spending as a percentage of GDP

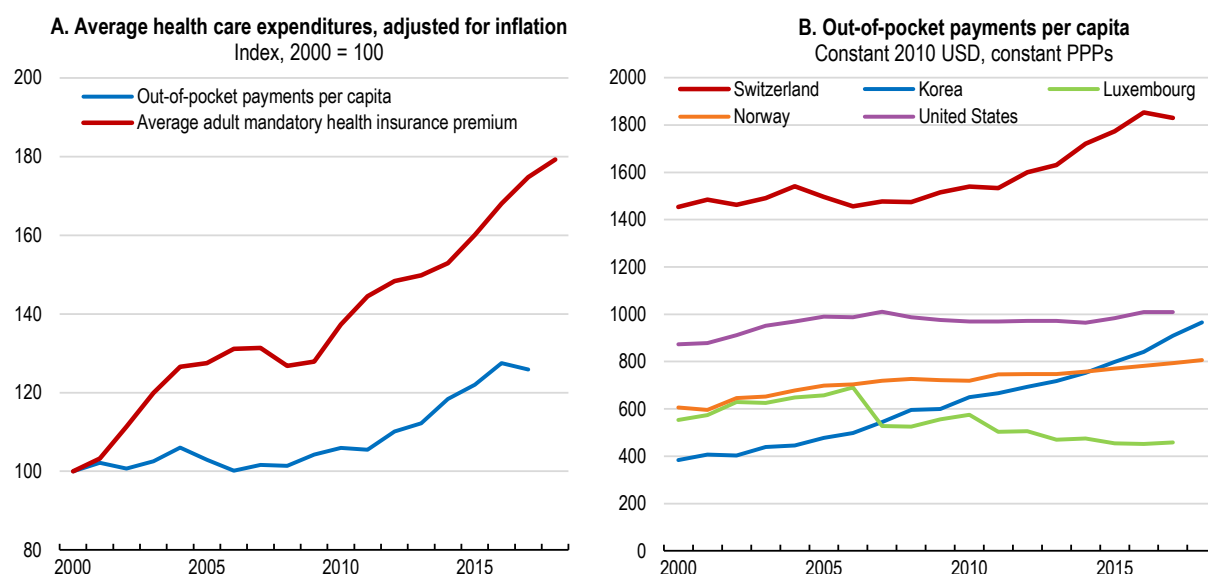


Note: Scenarios for health care spending use a combination of the old-age population share, income growth and a time trend to capture technological progress. In Scenario 1, real spending per capita growth is contained to 0.8% per year for 10 years (compared to 1.5% average structural growth achieved in some high-spending countries over 2010-13 (Lorenzoni et al., 2018a)). In Scenario 2, the elasticity of spending to income growth is lower. In Scenario 3, costs increase in line with the Baumol scenario of Brändle and Colombier (2017).

Source: Simulations based on the OECD Economics Department Long-term Model.

Cost containment is becoming more critical because rising costs are increasing financial pressure on households. Average mandatory health insurance premia and out-of-pocket payments have long outpaced inflation (Figure 29, Panel A). Mandatory health insurance premia rose to 8.4% of household consumption in 2017. Out-of-pocket payments reached 6.8% of household consumption in 2016, and until 2017 had risen faster than in other countries where these payments are also high (Panel B). High costs affect access: 22% of Swiss respondents reported having a cost-related problem to access medical care in the previous year, compared to 17% of French and 7% of German respondents (Schneider et al., 2017). Among those on low incomes, the share was 30%. Similar shares of Swiss skipped dental care or check-ups because of cost; dental care is not covered by mandatory health insurance. However, national survey data suggest that for those who needed care, the rates were much lower with 3.3% of respondents being deprived of necessary medical or dental care for financial reasons. Nonetheless, skipping check-ups and treatment can in turn worsen health and widen inequality later in life, especially if work is affected (OECD, 2017d). Later detection of illness also adds to cost pressures.

Figure 29. Insurance premia and out-of-pocket payments have risen substantially

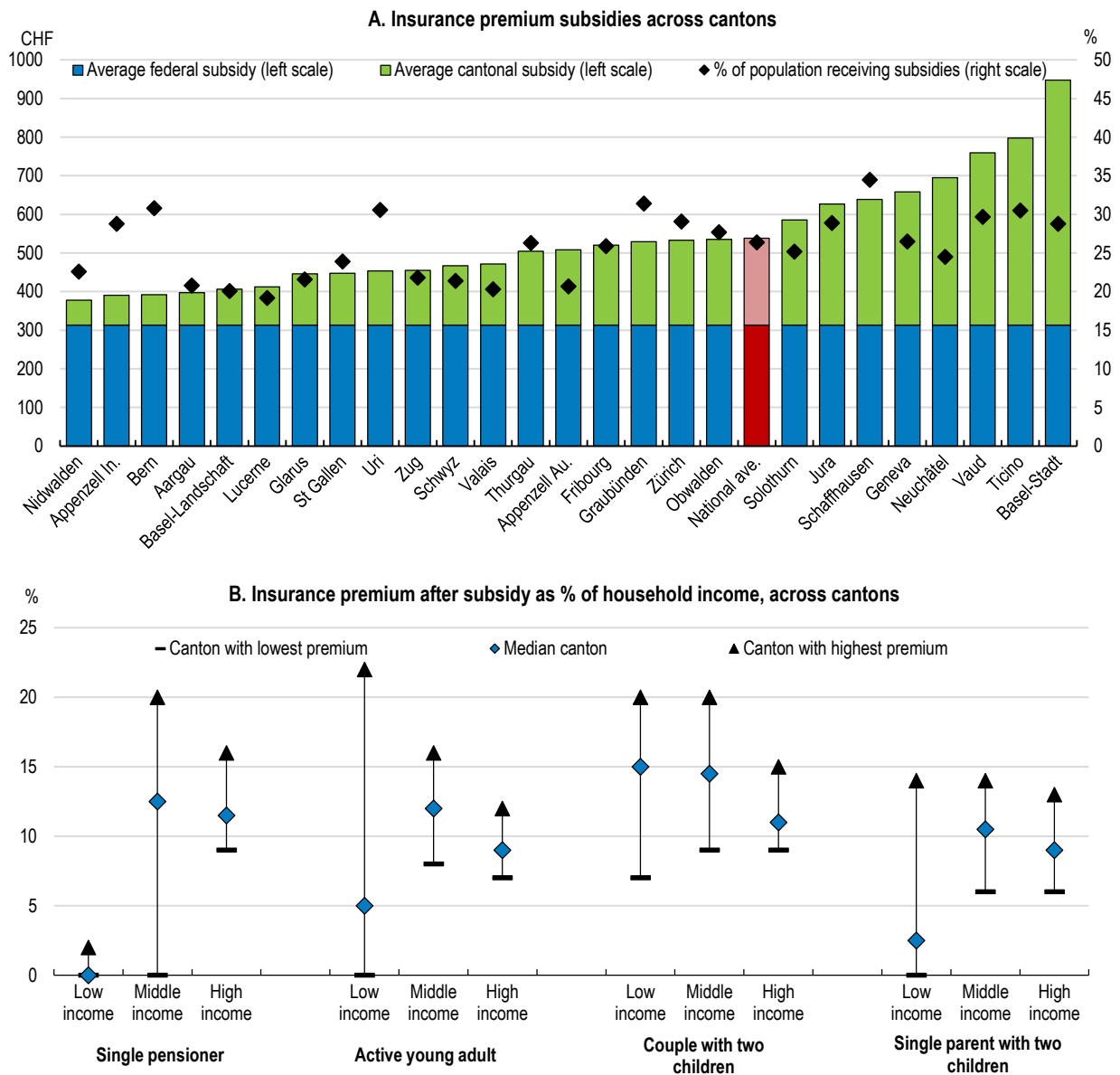


Note: In Panel A health insurance costs are deflated by the consumer price index. The average mandatory health insurance premium is the average amount paid by adults aged 26 years or more.

Source: Federal Statistical Office; OECD, *Health Statistics* database; Federal Office of Public Health, *Statistique de l'assurance-maladie obligatoire 2017* [Mandatory health insurance statistics 2017].

Mandatory health insurance premia worsen inequality because they are a flat rate and therefore impose a larger burden on low- and middle-income households, even after subsidies (Ecoplan, 2018). The cost of insurance premia outpaced subsidies over 2011-17. The Household Budget Survey indicates that an average household spent 6.2% of its income on mandatory insurance. However, simulations by Ecoplan (2018) suggest that the share is much higher for a household on modest income without social assistance. By law, cantons subsidise social assistance recipients, children and young adults in education but have considerable freedom in deciding the subsidy level as well as eligibility criteria, leading to stark differences in average subsidies (Figure 30, Panel A). Low-income pensioners are protected in all cantons but insurance can cost a middle-income pensioner up to one-fifth of their income (Panel B). Crivelli and Salari (2014) also show that the system is regressive within cantons, to varying degrees depending on the canton. Since 2011 the burden on those with modest incomes appears to have risen (Ecoplan, 2018). Some cantons have reduced their subsidies in response to their own financial strains. However, in early 2019 the Federal Court prevented Lucerne from lowering its subsidies further because it made health care unaffordable.

Figure 30. Cantonal policies lead to large differences in insurance costs



Note: In Panel B low, middle and high income correspond to the 25th, 50th and 75th household gross salary percentiles. "Middle income" is CHF 50 567 for a young adult, CHF 33 050 for a single pensioner, CHF 65 465 for a single parent with two children and CHF 100 016 for a couple with two children. In 2019Q1 the franc was at parity with the US dollar. See EcoPlan (2018) for full details, including three other sample household types.

Source: Federal Office of Public Health, *Statistique de l'assurance-maladie obligatoire 2017* [Mandatory health insurance statistics 2017]; Assurance-maladie : Monitoring de la réduction des primes [Health insurance: monitoring the reduction of premiums].

Recognising the burden of rising health care costs, the government plans many cost containment measures, discussed in the following section. Individuals' premia would be reduced by improving the market for health insurance. Managed care insurance plans, which restrict patients' choice of service provider, expanded from 7% of the market in 2000 to 64% in 2017. This system has already reduced over-use of health care and generated substantial cost savings (Kauer, 2016). A risk equalisation mechanism transfers money between insurance companies to adjust for selection effects but it does not take into account many risk factors (OECD, 2015b). Including more factors would foster genuine and fair competition. More generally, insurance premia could be reduced by narrowing the benefit basket using stricter cost-effectiveness criteria. For example, most OECD countries do not cover alternative medicines like homeopathy. This can, however, be difficult to implement. To reduce the regressivity of the system, cantons should work with the federal government towards a national framework that links subsidies to taxable income and adequately protects the poor. A simpler system would also be cheaper to administer (OECD/WHO, 2011).

Cost containment is a priority in the health care sector

Past OECD reviews of Switzerland's health sector have emphasised the considerable scope for increasing efficiency and cost-effectiveness without sacrificing quality, by improving cost effectiveness of treatments, reducing fragmentation and duplication, and through prevention (OECD/WHO, 2011; OECD, 2015b). Recent cross-country empirical work suggests that fee-for-service models and user choice – characteristics of the Swiss system – are associated with higher spending (Lorenzoni et al., 2018b; de la Maisonneuve et al., 2016; Fall et al., 2014). Hospital prices are almost twice the OECD average (92% higher) (Lorenzoni and Koechlin, 2017). Improving pricing and incentives is crucial. Recent reforms partly tackle these issues. For instance, from 2019 insurance coverage for some standard procedures is limited to outpatient treatment (for example, tonsillectomies are only insured as day surgery). In 2017 triennial price comparisons of pharmaceuticals prices resumed, incorporating cost-benefit comparison with other products along with (existing) international price comparisons. This led to price cuts.

In response to the findings of a commissioned expert group, the government plans two further packages of cost-containment reforms. The first package aims to reduce hospital costs, strengthen price incentives in outpatient care and lower prices of specialists and pharmaceuticals. Because insurers must reimburse procedures at any cantonal-approved hospital, plans to give insurers a right of appeal against cantonal decisions may mitigate the problem that cantons do not always take costs into account when approving hospitals (OECD, 2015b). The government also plans to establish an independent body to set specialist tariffs. A reference price system for reimbursing generic drugs is proposed (previously recommended by the OECD). These reforms should be pursued. An additional proposal aims to harmonise the financing of inpatient and outpatient care costs. Under the current system inpatient care costs are shared between cantonal governments and insurers but cantonal governments do not contribute to hospital outpatient costs. The proposal would reduce incentives for cost-shifting.

A second package of reforms is likely to include cost targets for growth in mandatory health care expenditure. The aim is to provide incentives for improving efficiency through greater responsibility for costs for key players including insurers and service providers. Budget caps and cost targets have been associated with more effective expenditure control in some countries, including Germany and the Netherlands, and some circumstances (Brändle et al., 2018; de la Maisonneuve et al., 2016; Pisu, 2014). However, cross-country evidence is mixed (de la Maisonneuve et al., 2016). This, with the potential for queuing and cost shifting, highlights the importance of design. Involving stakeholders in the design of the system is likely to be important in Switzerland (Brändle et al., 2018).

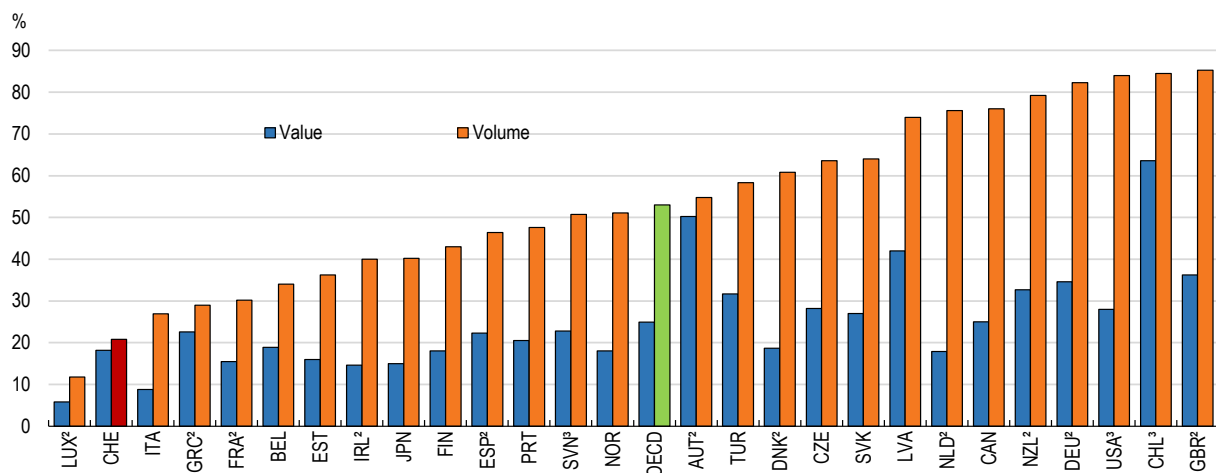
Proposed reforms to curative care and pharmaceuticals spending will strengthen price signals in the system. Curative care has been a driver of rising spending over 2011-16. There is still scope for more reform. Switzerland has more hospital beds per thousand inhabitants than most OECD countries – 4.6 compared to the OECD median of 3.8. In two cantons the ratio is twice the national median. There have

also been considerable differences across cantons in whether the same procedure is treated as inpatient or outpatient care (Obsan, 2019). This suggests further shifts toward outpatient care are feasible. Encouraging patients to seek treatment outside of their canton would strengthen competition and flexibility in the system. Promoting the consolidation of hospitals and increasing co-operation between cantons could bring about economies of scale and scope. Likewise, greater benchmarking of hospital procedures, as previously recommended (OECD, 2015b), would narrow the large differences within the system and cut costs.

The low use of generics and biosimilars points to considerable scope for savings in pharmaceuticals spending without compromising patient welfare (Figure 31). Pharmaceuticals spending per capita is the second-highest in the OECD (after the United States). Santésuisse/Interpharma (2018) finds that generic drug prices were double those in comparable countries in 2017. It estimates that allowing insurers to reimburse a fixed price based on active ingredients could have saved CHF 400 million in 2017 (3.6% of total spending on pharmaceuticals and therapeutic goods). A recent impact assessment estimated that savings of CHF 190-480 million (depending on the model) could be realised (Polynomics/Interface/University of Basel, 2018). The reference price system should be finalised. Doctors should be encouraged to prescribe medication using international non-proprietary names, as in the Netherlands.

Figure 31. The use of generics is still low

Share of the total pharmaceuticals market, 2017 or latest¹



1. Including medical non-durables.
 2. Reimbursed pharmaceutical market.
 3. Community pharmacy market.
- Source: OECD, *Health Statistics* database.

Health care data can improve co-ordination in care as well as efficiency but Switzerland lags other countries in its usage (Oderkirk, 2017). Electronic patient dossiers are currently being rolled out after delays. These could reduce duplication of tests and improve treatment, which is more important as the number of patients with multiple chronic diseases or dementia rises (OECD/EU, 2013). Cantons are responsible for implementation, subject to meeting national protocols for interoperability. The federal government should strengthen financial incentives to join larger existing networks (“communities”) to reduce duplication of IT infrastructure. A recent data breach highlighted the need for greater oversight of data storage.

Participation in the new system is compulsory for hospitals and nursing homes. But it is voluntary for most health professionals and patients and pilot studies have highlighted the risk that the outpatient care providers do not participate (De Pietro and Francetic, 2018). This risks undermining the usefulness of the system. Financial incentives should be used to encourage health care providers to join, as in other OECD countries (Oderkirk, 2017). Likewise, penalties should be used to guarantee data quality. If this is ineffective, electronic dossiers may need to be mandatory. The government should promote the system to health professionals and patients and ensure their trust, particularly by ensuring that data are secure. Making better use of the available data for monitoring and evaluation would bring Switzerland more in line with best practice (Oderkirk, 2017).

Preventive care forms part of a strategy to ensure healthy ageing, to contain costs and prevent ageing unequally (OECD, 2017d). The government's 2018 strategy to prevent non-communicable diseases aims to better link prevention into other health care, improve co-operation and increase funding. Diseases like Alzheimer's disease and other forms of dementia entail huge human and financial costs (OECD, 2018k). Dementia is projected to affect 9% of those over 60 in 2060, one of the highest rates in Europe (OECD/EU, 2018). There is growing evidence that risk factors are similar to those for other non-communicable diseases – including obesity, lack of physical activity, hypertension, smoking – and that prevention can be effective (OECD, 2018k).

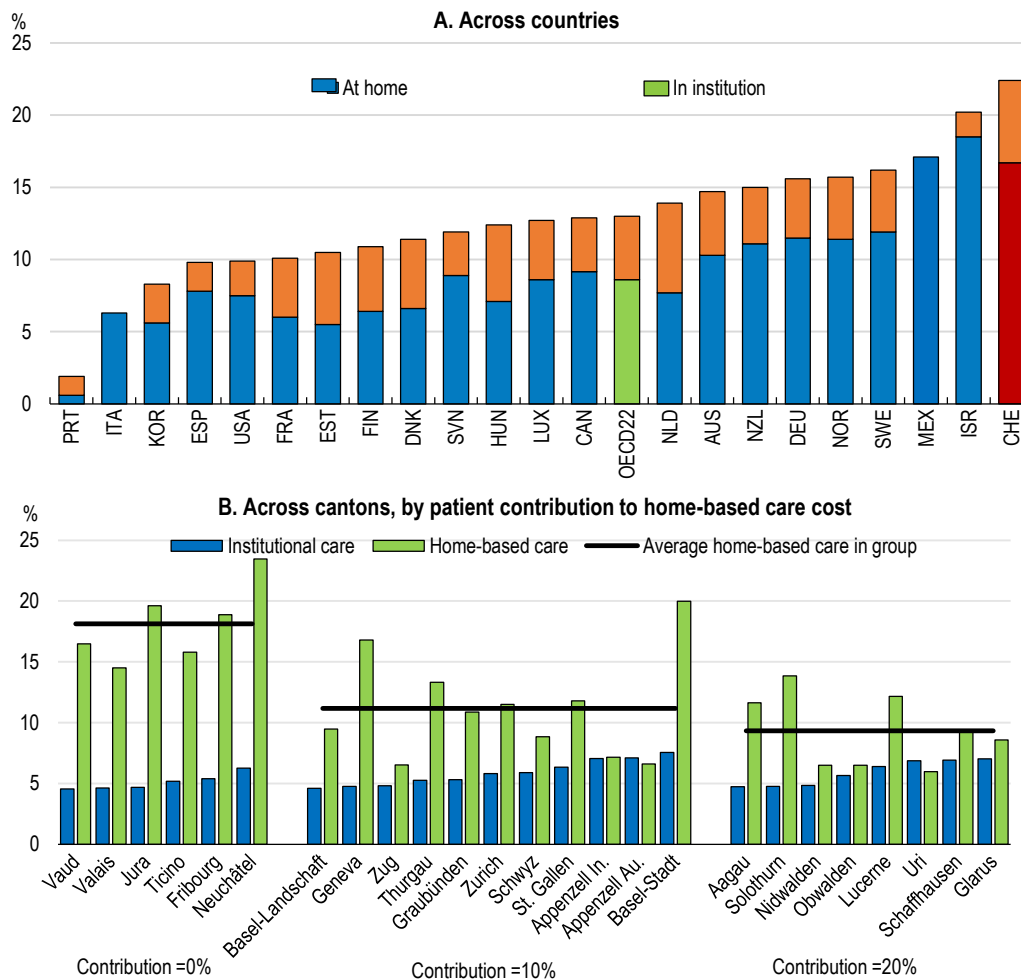
The health prevention budget is small and its effectiveness is hampered by decentralisation, even though some good local programmes exist (OECD, 2015b). Given the potential savings, spending should be expanded and targeted, including on those at higher risk of adverse labour market outcomes (OECD, 2017d; Devaux and Sassi, 2015). Securing the supply of general practitioners is also important given upcoming retirements. Narrowing remuneration gaps with other specialties and easing working time constraints in general practice could help (OECD, 2017g). Raising the tobacco excise could help reduce the relatively high smoking rate.

Fragmentation in the long-term care system leads to inequalities and inefficiencies

Formal long-term care at home and in nursing homes is well developed, with 22% of Swiss aged 65 years or more receiving formal long-term care in 2017. This was the highest amongst OECD countries with comparable data (Figure 32, Panel A). Three-quarters of these patients received home-based care, usually through "Spitex", an umbrella association of care and support providers. Over the past two decades, there has been a shift from institutional care, which was previously comparatively high in Switzerland, toward home-based care. A 2011 reform changed the financing of care prescribed by a doctor. Insurance coverage, however, remained unchanged. Furthermore, the reform increased access to supplementary benefits for nursing home patients and provided a "helplessness allowance" to those with "mild" needs (previously only available for more severe needs).

Figure 32. Long-term care is mostly home-based but varies across cantons

Recipients as a percentage of the population aged 65 years or over, 2017



Note: Data on institutional long-term care are not available for Italy and Mexico. Institutional care in Denmark is for 2014. Panel B follows the methodology outlined in L. Dutoit, S. Füglistler-Dousse and S. Pellegrini (2016), *Soins de longue durée dans les cantons: un même défi, différentes solutions: Evolutions 2006–2013*, Swiss Health Observatory, Table 9.2. The contribution is based on the legislated cost to the health insurer rather than the total cost (cantons pay a residual). Bern is not shown because the patient’s contribution varies by age and income. In Glarus the contribution varies across municipalities and is below 20% in some municipalities. Source: OECD, *Health Statistics* database.

The need for greater co-ordination is well recognised (Federal Council, 2016). The financing of long-term care is more fragmented than that of other kinds of health care because support services extend beyond health (Box 8). Financing comes primarily from sub-national governments, mandatory health insurance and households (Table 7). Means-tested supplementary benefits to the old-age pension finance a significant share of institutional care. The federal and sub-national governments also subsidise providers such as Spitex and community organisations. Financial support is provided via a “helplessness allowance” based on three levels of care and means-tested supplementary benefits to the old-age pension to finance accommodation and board at a nursing home. Not-for-profit and profit-oriented organisations are also active in providing care. Proponents of extending the abovementioned uniform funding reform (of inpatient and outpatient care) to long-term care argue that this would help make the system more integrated and reduce cost growth (CDS, 2019).

Table 7. Financing of long-term care is fragmented

Per cent of total long-term care expenditure, 2017

	Institutional care	Home-based care
Cantons	16.3	10.0
Municipalities	7.9	7.2
Mandatory health insurance	14.2	35.5
Social insurance (old age pension and invalidity pension)	4.0	21.8
Supplementary benefits, supplementary invalidity pensions to the old-age pension and other social aid	21.0	1.3
Households	35.5	19.9
Other, including private insurance	1.0	4.2
Memo item: Annual spending, millions of Swiss francs	13,376	2,566

Note: These data do not take into account the insurance premium subsidy paid to households by the federal and cantonal governments.

Source: Federal Statistical Office.

Box 8. Types of long-term care and institutions

Long-term care comprises a range of medical, personal care and assistance services provided to alleviate pain and manage the deterioration in health status for people with some long-term dependency.

In Switzerland the health insurance law distinguishes between nursing-type care and other support. Palliative care, long-term nursing care, and personal care services (eating, washing, dressing) that are prescribed by a doctor and provided by a nurse are covered by mandatory health insurance. Other long-term care such as assistance with tasks like cooking, cleaning and taking medication (“instruments of daily living”) are not covered by health insurance but may be subsidised by the canton. These definitions broadly correspond to “health” and “social” long-term care in the system of health accounts.

Long-term care institutions are nursing and residential care facilities that provide accommodation and long-term care as a package. These include specially designed institutions, assisted-living facilities where people may live in private apartments, or hospital-like settings. The predominant service component must be long-term care. Data limitations constrain comparability across countries somewhat. Data for long-term care institutions in Switzerland only include nursing homes.

Source: OECD (2018), *OECD Health Statistics 2018: Definitions, Sources and Methods*; national sources.

The level of financial support for home-based care varies across cantons. For care services covered by the health insurance law, such as assistance with dressing and eating, insurers pay a fixed contribution, depending on care, set in the law. The final cost to the patient is capped at 20% of the insurer’s contribution, and cantons or municipalities pay the residual. In cantons with lower patient contributions take-up of home-based care is higher (Figure 32, Panel B). It is hard to disentangle the causal relationship as history and local preferences also play a role, with institutional-based care more common in German-speaking regions (Dutoit, Füglistler-Dousse and Pellegrini, 2016; Cosandey and Kienast, 2016). There has been some convergence in care: over 2014-17 the use of institutions fell most in cantons where it was highest. Other types of care, such as assistance preparing food or cleaning, are out-of-pocket expenses in the first instance.

Under the current system home-based care can quickly become unaffordable. This is partly because long-term care patients with low to moderate needs would require care that is not insured. For a hypothetical pensioner in Zurich with moderate needs (defined in Cravo Oliveira Hashiguchi, Ortega Regalado and Llana-Nozal, 2020), benefits would cover around 60% of home-based care costs, which is similar to France but less generous than many other systems. Coverage appears lower in Basel. In this example, high out-of-pocket costs relative to disposable income imply that without access to informal care or selling financial assets, home-based care would be unaffordable for most pensioners in these two case studies. This creates incentives to move into a nursing home where financial support is greater.

Unaffordable home-based care can push low-needs patients into nursing homes. In 2014, half of all nursing home patients received supplementary benefits (Cosandey and Kienast, 2016). But 30% of patients needed less than an hour of care a day. The share ranged from 9% in Geneva to 39% in Zurich and 49% in Glarus (*ibid*). Given that people often prefer to stay at home for as long as possible and the higher cost of institutional care, this points to scope to jointly improve patient welfare and cost-effectiveness.

Broadening financial assistance to include some support services could help delay entry to nursing homes and improve early detection of health problems, making the system more efficient and people-centred. Experience from Sweden, Denmark, Germany and Luxembourg suggests that including some support services in the basic care package avoids more expensive care (Colombo et al., 2011). In 2011 total spending on long-term care not covered by health insurance amounted to around 15% of total long-term care costs, or 0.25% of GDP (Federal Council, 2016). One option is to provide vouchers for social care services, as in Nordic countries. The towns of Lucerne and Bern have piloted such projects. This could allow local governments to negotiate better rates with providers (OECD/WHO, 2011). Another option is to adopt a standardised scale of care needs, replacing the different assessment systems for institutional and home-based care. Cash benefits could be matched to the level of support and a co-ordination point could help navigate the system. This would give patients some choice and could improve the functioning of the market. One lesson from the Netherlands is that careful design is crucial for containing total costs. Means testing and co-payments are important in containing cost growth, as highlighted by Japan's experience (OECD, 2019f).

Other countries' experiences provide insights into how to deliver better quality care more efficiently. Tasks of care professionals are currently demarcated depending on whether the care is insured. Reassessing these would also improve flexibility. One feature of the Netherlands' Buurtzorg model – now being piloted in Zurich – is that nurses perform a wider range of tasks (Box 9). Experimentation to search for local solutions should be encouraged by the federal government, as in Sweden. A framework for sharing these lessons should then be established. Widespread adoption of electronic patient dossiers and linking these across cantons and providers, as in Portugal, could help improve care and efficiency.

Box 9. Examples of innovations to provide more integrated long-term care

The **Netherlands'** Buurtzorg model of decentralised home care has grown rapidly. It relies on self-governing teams of nurses to look after all aspects of care for a pool of patients. The teams work with patients, their families and primary care providers and aim to enhance patients' independence. Nurses are supported by coaches. Administration is minimised and centralised. Patients, their families and staff all report high levels of satisfaction. The model was found to be more cost-effective than other providers for home care (adjusting for the case mix) but around average when curative care was included.

Sweden has sought innovative ways to improve collaboration between hospital, primary health care and social services. National grants were awarded to 19 local demonstration projects. In one approach mobile teams provide proactive early interventions at home. In Lidköping county, hospitalisation rates decreased by 90% after a common political board was implemented across counties and municipalities to deliver co-ordinated care for older people.

Portugal implemented a National Network of Integrated Continuous Care in 2007. It is decentralised but co-ordinated using an integrated information system that is accessible by hospital discharge management teams, primary health care centres, and co-ordination teams at national and sub-national level. Strengths include that the online system allows updating of need assessment, monitoring of patients and benchmarking of results at national, sub-national and unit levels. Funding is jointly provided by the ministries of health and social affairs.

Source: OECD/EU (2013), *A Good Life in Old Age? Monitoring and Improving Quality in Long-term Care*, OECD Health Policy Studies; B. Gray, S.O. Sarnak and J. Burgers (2015), "Home Care by Self-Governing Nursing Teams: The Netherlands' Buurtzorg Model", Case Study, The Commonwealth Fund

Planning is still centred on nursing homes, which implies a substantial increase in coming years. Currently governments apply a rule of thumb that around one-fifth of over 65-year-olds will need institutional care. However, this approach will drastically overstate the need for beds if other forms of assistance are found (Credit Suisse, 2018). The current division of financing responsibilities between cantons and municipalities in home-based and institutional care hinders access to inpatient services at institutions but this could be alleviated through better contract design (Cosandey and Kienast, 2016). Encouraging cantons and municipalities to share access to institutions within, for example, a regional market could also improve flexibility, efficiency and patient access to services. Some cantons, such as Basel-Landschaft, offer financial incentives for municipalities to construct assisted-living facilities rather than nursing homes. Geneva provides supplementary benefits for assisted living, which reduces demand for nursing homes. Assisted-living facilities could be more cost-effective than home-based care in some cases because professional caregivers are onsite (Polynomics, 2018). Enriching statistics, by including assisted living facilities for example, would improve planning.

Adapting housing options to an ageing population could also help delay entry to nursing homes for those with low needs. In the Netherlands, those aged 80 or over with physical limitations are significantly less likely to need to move to a nursing home when they live in more accessible housing (Diepstraten, Douven and Woutser, 2019). A survey of Swiss cities identified housing as a particular concern (Ecoplan, 2014). Support for minor adaptations of homes could be piloted with their cost effectiveness evaluated. The city of Opfikon helped finance construction of apartments in a co-operative that were adapted for older residents (Ecoplan, 2014). The Union of Swiss Cities is promoting sharing of local experiences. In Finland residents aged 50 to 80 years in the Kotisatama housing community share tasks like cooking the evening meal (Forum Virium Helsinki, 2016). In France, the Pari Solidaire programme arranges for young adults to live with an older person, simultaneously tackling housing costs and loneliness and safety issues (Kesselring et al., 2014).

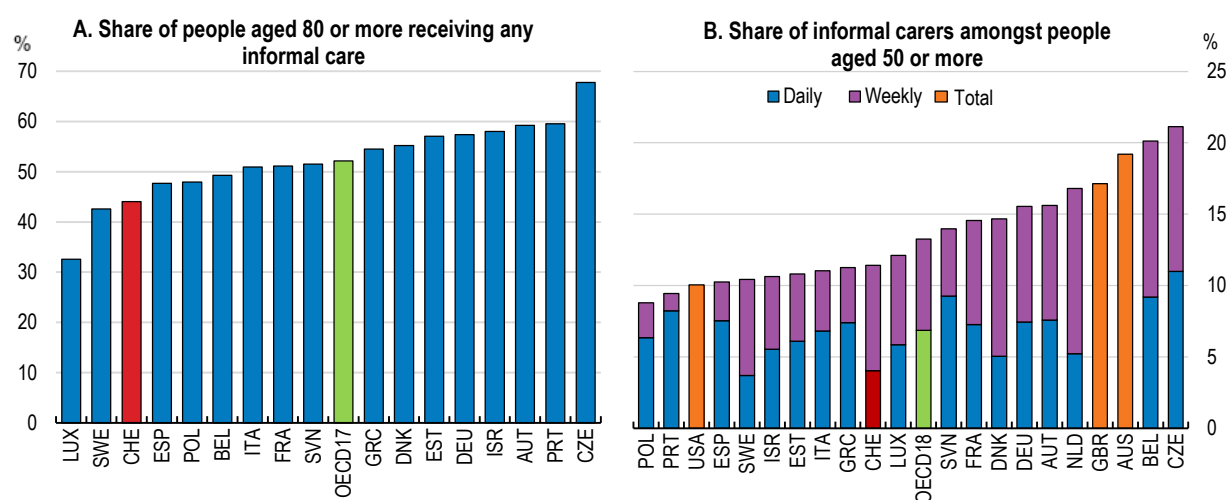
Greater transparency in pricing and performance could raise cost effectiveness and quality in home-based and institutional care. This will become more pressing as demand increases. Efficient provision of home-based care is inhibited by a range of factors, including that some cantons act as providers and purchasers of services, pricing is opaque and there is no link between the patients' co-payment and the actual cost for insured care (Cosandey and Kienast, 2016). The consumer price watchdog found that the pricing of accommodation and board in institutions varies widely within and across cantons in ways that do not reflect costs but likely cross-subsidies (Surveillance des Prix, 2018). Financial pressures on cantons and municipalities are also building because the hourly rate payable by health insurers has not changed since 2011. In addition, the price paid by cantons and municipalities for home-based care often reflects cost structures rather than services provided (Cosandey and Kienast, 2016).

Governance would be improved by a single accounting standard nationally and better supervision by cantons, as called for by the consumer price watchdog (Surveillance des Prix, 2018). To better allocate costs, the hourly rate paid by health insurers and patients should be updated regularly following the advice of an independent panel such as that envisaged for specialist fees. Improving performance-related data could also enhance the functioning of the system and facilitate benchmarking. Such data are currently lacking. Other decentralised countries such as the United States and Canada use data from standardised assessment instruments to measure user needs and generate indicators of care (OECD, 2017d). Administrative databases, registry data and ad-hoc surveys can also be used. Switzerland has lagged other OECD countries in making such information available, but from 2019 some quality indicators will be collected by the federal government. These should be developed further.

Expanding the supply of long-term care will require overcoming shortages in care workers. The Swiss Health Observatory projects that 47 000 additional long-term care workers will be needed by 2030 (Merçay, Burla and Widmer, 2016). Retention of existing workers will also be important: factors such as emotional and physical strain, lack of autonomy and feeling underpaid have been associated with lower job satisfaction (Schwendimann et al., 2016). The federal government has introduced a mandatory requirement for long-term care institutions to offer training places within the vocational education system or pay a penalty. It is also encouraging workers to retrain in long-term care. Japan has successfully attracted young people and women returning to work after a break by offering financial incentives to train as long-term care workers (ILO/OECD, 2019). Governments should also experiment with financial incentives for training in care professions and policies to bolster job satisfaction. Technological advances in monitoring technologies, assistive technologies, remote care, self-management and data collection could also help improve the quality of care and reduce its labour-intensity (ILO/OECD, 2019; OECD, 2014a). Nonetheless, the labour force will likely continue to rely on foreign workers; their immigration should be facilitated.

Expanding the supply of care will also rely on greater recourse to informal care. Switzerland currently relies less on informal care than other countries (Figure 33). National policies are less generous than in some other OECD countries: legislated leave entitlements are unpaid, although there are bonuses in the pension system for time spent caring for others. Two-thirds of companies provide paid leave and a few cantons provide financial support for informal care. The government plans to provide carers with a small amount of paid leave, bringing Switzerland more in line with other OECD countries. This may help during transitions or times of elevated need. To better support regular care, the government is extending the bonuses in pension entitlements to carers of those with mild needs. Whether these benefits will expand the supply of informal care as needs grow remains to be seen.

Figure 33. Informal care is less common than elsewhere and typically low intensity



Note: Data are for 2015 or nearest year. Care recipients relate to the previous year. Carers are those who gave care at least weekly.
Source: Wave 6 of the Survey of Health, Ageing and Retirement in Europe (SHARE) 2015; OECD (2017), *Health at a Glance 2017*.

If greater use is made of informal carers, respite care (temporary care to relieve carers) will need to expand. Lucerne has begun offering a full day care service which begins by helping the patient get ready (OECD, 2018j). Respite is particularly important for carers of patients with dementia and access should be generalised. For example, Germany offers a legal entitlement to a minimum amount of respite.

Looking further ahead, with the population of Swiss aged over 80 expected to double, strains on the current financing system will undoubtedly build. For example, rising health costs together with declining replacement rates of pensions may mean more pensioners qualify for supplementary benefits. A 2016 government report considered a range of options for financing long-term care, including: maintaining the status quo, with additional funding from general revenues; expanding mandatory health insurance to include support services; and creating mandatory long-term care insurance (as in Germany, Korea and the Netherlands) (Federal Council, 2016). It concluded that the challenges related to financing of long-term care will become increasingly critical by the year 2030 and consequently future financing must be discussed early. A future reform should tackle the fragmentation in financing that leads to cost inefficiency, duplication and uncoordinated patient care. Given the risk that reform takes longer than expected, and the demographic change already underway, the government should begin work on a proposed solution.

Box 10. Recommended policies for Switzerland's ageing society

Preparing the pension system for a soaring number of retirees

- Fix the retirement age at 65 for both sexes as planned, then raise it gradually to 67 and thereafter link it to life expectancy.
- Link the first-pillar pension at retirement with wages, and during retirement, index pensions to inflation.
- In the medium term, shift towards a system of individual entitlements in the old-age pension (first pillar) and review the need for survivor pensions.
- Improve access to information on pension entitlements in the first and second pillar by providing the information via a single website.
- Lower the parameter used to calculate annuities ("minimum conversion rate") and make it a more flexible technical parameter set by ordinance.
- Lower the age to participate in occupational pensions (the second pillar) and lower the earnings threshold to participate.
- Implement a framework to regulate technical interest rate assumptions to reduce variation and increase accuracy.
- Limit the possibilities to withdraw pension wealth as a lump sum at and before retirement.
- Lower the maximum benefit from tax incentives in the second pillar.
- Lengthening working lives
- Use the existing annual conference on older workers to find ways to introduce greater flexibility into the wage-setting system and reduce seniority wages.
- Expand spending on training for jobseekers, including those on social benefits.
- Use subsidies to encourage continuing education and training for groups who are most at risk from the effects of digitalisation.
- Reconsider planned cash benefits for jobseekers aged over 60 or attach conditions such as training or job search.
- Prohibit age discrimination and establish enforcement mechanisms.
- Flatten the age-related progressivity in pension contribution rates.
- Reduce personal income taxation (at all levels of government) by lowering tax rates at low incomes and removing the disincentive for second-earners, financed by greater use of value-added tax, recurrent tax on immovable property and environmental taxes.

Lengthening working lives

- Use the existing annual conference on older workers to find ways to introduce greater flexibility into the wage-setting system and reduce seniority wages.
- Expand spending on training for jobseekers, including those on social benefits.
- Use subsidies to encourage continuing education and training for groups who are most at risk from the effects of digitalisation.
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- Reduce personal income taxation (at all levels of government) by lowering tax rates at low incomes and removing the disincentive for second-earners, financed by greater use of value-added tax, recurrent tax on immovable property and environmental taxes.

Coping with rising demand for health care and long-term care

- Proceed with cost containment programmes, particularly for curative care and pharmaceuticals.
- Introduce financial incentives and penalties to encourage the take-up of electronic patient health dossiers by health professionals and the input of quality data.
- Expand the data available for monitoring and benchmarking services with responsibilities given to the national statistical office or Swiss Health Observatory.
- Use innovative tools such as vouchers or individual budgets based on a level of care needs, with co-ordinators helping to navigate the system, to develop the system in a cost-effective way.
- Experiment with innovative local ways of providing cost-effective and integrated long-term care and share best practices.
- Increase accountability and transparency in long-term care by establishing national pricing schedules for non-insured services, publishing more information on pricing and quality and stepping up oversight.
- Offer incentives to plan health and long-term care infrastructure over larger areas and give patients access to institutional care beyond their local area.
- More systematically link subsidies for mandatory health insurance to income.

References

- Acemoglu, D. and P. Restrepo (2018), “Demographics and Automation”, *NBER Working Paper*, No. 24421.
- Akgun, O., D. Bartolini and B. Cournède (2017), “[The capacity of governments to raise taxes](#)”, *OECD Economics Department Working Papers*, No. 1407, OECD Publishing, Paris.
- Akgun, O., B. Cournède and J. Fournier (2017), “[The effects of the tax mix on inequality and growth](#)”, *OECD Economics Department Working Papers*, No. 1447, OECD Publishing, Paris.
- Arnold, J. et al. (2011), “[Tax policy for economic recovery and growth](#)”, *The Economic Journal*, Vol. 121/550, pp. F59-F80.
- Bauman, R. and J. Koller (2018), *La Prévoyance Professionnelle dans le Cadre de Taux d’Intérêt Bas: Droits aux Prestations, Solidarités et Orientation Future [The Occupational Pension System in a Low Interest Rate Environment: Benefit Entitlements, Solidarity and Future Direction]*, c-alm.
- Bonoli, G. (2017), *ESPN Thematic Report on Access to Social Protection of People Working as Self-Employed or on Non-Standard Contracts - Switzerland*, European Social Policy Network.
- Brändle, T. et al. (2018), “Budgetary Targets for Growth in Healthcare Expenditure: Selected Experiences and Findings for Switzerland”, *Federal Finance Administration Working Paper*, No. 22, Berne.
- Brändle, T. and C. Colombier (2017), *Health Care Expenditure Projections up to 2045*, Federal Finance Administration, Bern.
- Brändle, T., C. Colombier and A. Philipona (2016), *2016 Report on the Long-term Sustainability of Public Finances in Switzerland*, Federal Finance Administration, Bern.
- Brühlhart, M. et al. (2016), *Taxing Wealth: Evidence from Switzerland*, National Bureau of Economic Research, Cambridge, MA.
- Buchs, H. and A. Gnehm (2018), *Rapport sur les Limites d’Âge dans les Offres d’Emploi de 2010 à 2017 [Age Limits in Job Advertisements over 2010-17]*, University of Zurich.
- Bütler, M. (2009), “Switzerland: High Replacement Rates and Generous Subsistence as a Barrier to Work in Old Age”, *The Geneva Papers on Risk and Insurance: Issues and Practice*, Vol. 34/4, pp. 561-577.
- Bütler, M. and A. Ramsden (2017), “How taxes impact the choice between an annuity and the lump sum at retirement”, *University of St. Gallen Economics Working Paper Series*, No. 1701.
- CDS (2019), [Financement Uniforme des Prestations Ambulatoires et Stationnaires - Intégrer les Soins ! \[Uniform financing of outpatient and inpatient benefits – integrate care!\]](#), Conférence suisse des directrices et directeurs cantonaux de la santé, January.
- Colombo, F. et al. (2011), [Help Wanted?: Providing and Paying for Long-Term Care](#), OECD Health Policy Studies, OECD Publishing, Paris.
- Cosandey, J. and K. Kienast (2016), *Neue Massstäbe für die Alterspflege [New Age Care Standards]*, Avenir Suisse, Zurich.
- Cournède, B., J. Fournier and P. Hoeller (2018), “[Public finance structure and inclusive growth](#)”, *OECD Economic Policy Papers*, No. 25, OECD Publishing, Paris.
- Cravo Oliveira Hashiguchi, T., J. C. Ortega Regalado and A. Llana-Nozal (2020), “Measuring effective public social protection for long-term care in old age”, *OECD Health Working Papers*, forthcoming.
- Credit Suisse (2018), *Heime: Leere Betten im Wachstumsmarkt [Homes: Empty Beds in the Growth Market]*.
- Crivelli, L. and P. Salari (2014), “The inequity of the Swiss health care system financing from a federal state perspective”, *International Journal of Equity in Health*, Vol. 13.

- Daniele, F., T. Honiden and A. Lembcke (2019), “Ageing and productivity growth in OECD regions: combatting the economic impact of ageing through productivity growth?”, *OECD Regional Development Working Papers*, No. 2019/08, OECD Publishing, Paris.
- de la Maisonneuve, C. et al. (2016), “[The drivers of public health spending: Integrating policies and institutions](#)”, *OECD Economics Department Working Papers*, No. 1283, OECD Publishing, Paris.
- De Pietro, C. and I. Francetic (2018), “E-health in Switzerland: The laborious adoption of the federal law on electronic health records (EHR) and health information exchange (HIE) networks”, *Health Policy*, Vol. 122/2, pp. 69-74.
- Devaux, M. and F. Sassi (2015), “[The Labour Market Impacts of Obesity, Smoking, Alcohol Use and Related Chronic Diseases](#)”, *OECD Health Working Papers*, No. 86, OECD Publishing, Paris.
- Dorn, D. and A. Sousa-Poza (2005), “The determinants of early retirement in Switzerland”, *Swiss Journal of Economics and Statistics*, Vol. 141/2.
- Diepstraten, M., R. Douven and B. Woutsere (2019), “Can your house keep you out of a nursing home?”, *CPB Discussion Paper*, Central Planbureau.
- Dufouil, C., et al. (2014), “Older age at retirement is associated with decreased risk of dementia”, *European Journal of Epidemiology*, Vol. 29/5.
- Dutoit, L., S. Füglistler-Dousse and S. Pellegrini (2016), *Soins de Longue Durée dans les Cantons: Un même Défi, Différentes Solutions: Evolutions 2006–2013 [Long-term Care in the Cantons: The Same Challenge, Different Solutions: Evolutions 2006-2013]*, Swiss Health Observatory.
- Ecoplan (2018), *Wirksamkeit der Prämienverbilligung – Monitoring 2017 [Effectiveness of Premium Reductions - Monitoring 2017]*, Federal Office of Public Health, Bern.
- Ecoplan (2014), *Politique de la Vieillesse dans les Villes Suisses [Ageing Policies in Swiss Cities]*, Union des Villes Suisse.
- Egger, Dreher & Partner AG (2019), *État de la Situation des Mesures du Marché du Travail Destinées aux Demandeurs d'emploi de Plus de 50 Ans dans les Cantons [Situation Regarding Labour Market Programmes for Unemployed Aged above 50 in Cantons]*, Report to State Secretariat for Economic Affairs, April.
- Fall, F. et al. (2014), “[Vulnerability of social institutions](#)”, *OECD Economic Policy Papers*, No. 11, OECD Publishing, Paris.
- Federal Council (2016), *Etat des Lieux et Perspectives dans le Secteur des Soins de Longue Durée [State of Play and Perspectives in the Long-term Care Sector]*, Swiss Confederation, Bern.
- Federal Social Insurance Office (2019), *Le Besoin Financier de l'AVS après l'Acceptation de la RFFA [Financing Needs of AVS after TRAF Approval]*, Federal Social Insurance Office, Bern.
- Federal Social Insurance Office (2018), *Statistiques des Assurances Sociales 2018 [2018 Social Insurance Statistics]*, Federal Social Insurance Office, Bern.
- Federal Statistical Office (2018), *Does the Inclusion of Assets Resolve Apparent Contradictions between Income Poverty and Other Indicators on the Standard of Living?*, United Nations, Expert meeting on measuring poverty and inequality 29-30 November 2018, Vienna, Austria.
- Forum Virium Helsinki (2016), *Kotisatama: Housing Community for Elderly People*, (accessed on 19 April 2019).
- Gratton, L. and A. Scott (2016), *The 100-year Life*, Bloomsbury Information, London.
- Guillemette, Y. and D. Turner (2018), “[The long view: Scenarios for the world economy to 2060](#)”, *OECD Economic Policy Papers*, No. 22, OECD Publishing, Paris.
- Helvetia (2018), *Le Taux de Conversion [The Conversion Rate]*, Helvetia Prévoyance professionnelle.
- ILO/OECD (2019), *New Job Opportunities in an Ageing Society*.
- IMF (2019), *Switzerland: Financial Sector Assessment Program*, Country Report No. 19/183,

Washington D.C.

- ITF (2018), [Policy Priorities for Decarbonising Urban Passenger Transport](#), OECD/ITF, Paris.
- Kauer, L. (2016), “Long-term effects of managed care”, *Health Economics*, Vol. 26/10, pp. 1210-1223.
- Keuschnigg, C. (2018), “Aging, Taxes and Pensions in Switzerland”, in R. Holzmann and J. Piggott (eds), *The Taxation of Pensions*, MIT Press, Cambridge.
- Kesselring, A. et al. (2014), *Social Innovation for Active and Healthy Ageing – A Case Study Collection*, King Baudouin Foundation, Brussels.
- Lee, R. (2016), “Macroeconomics, Aging, and Growth”, in *Handbook of the Economics of Population Aging*, Vol. 1, Elsevier.
- Leisibach, P., C. Schaltegger and L. Schmid (2018), *Arbeitsanreize in der Sozialen Sicherheit [Work Incentives in Social Security]*, State Secretariat for Economic Affairs, Bern.
- Lorenzoni, L., et al. (2019), “[Health spending projections to 2030: New results based on a revised OECD methodology](#)”, *OECD Health Working Papers*, No. 110, OECD Publishing, Paris.
- Lorenzoni, L., et al. (2018a), “Cyclical vs structural effects on health care expenditure trends in OECD countries”, *OECD Economics Department Working Papers*, No. 1507, OECD Publishing, Paris.
- Lorenzoni, L. et al. (2018b), “[Which policies increase value for money in health care?](#)”, *OECD Health Working Papers*, No. 104, OECD Publishing, Paris.
- Lorenzoni, L. and F. Koechlin (2017), [International Comparisons of Health Prices and Volumes: New Findings](#), Health Division.
- Lüske, M. (2015), [Social Security Design and Individual Retirement Decisions](#), Doctoral thesis.
- Merçay, C., L. Burla and M. Widmer (2016), *Personnel de Santé en Suisse [Health Personnel in Switzerland]*, Swiss Health Observatory.
- Mercer (2018), *Melbourne Mercer Global Pension Index*, Australian Centre for Financial Studies.
- Mudrazija, S. and B. Butrica (2017), “Homeownership, social Insurance, and old-age security in the United States and Europe”, *Center for Retirement Research Working Papers*, No. 15.
- Nerlich, C. and J. Schroth (2018), “[The economic impact of population ageing and pension reforms](#)”, *ECB Economic Bulletin*, No. 2.
- Occupational Pension Supervisory Commission (2019), *Rapport sur la Situation Financière des Institutions de Prévoyance 2018 [Report on the Financial Situation of Pension Funds 2018]*, Occupational Pension Supervisory Commission, Bern.
- Obsan (2019), *Le Développement de l’Ambulatoire dans une Perspective Cantonale [The Development of Ambulatory Care in a Cantonal Perspective]*, Swiss Health Observatory.
- Oderkirk, J. (2017), “[Readiness of electronic health record systems to contribute to national health information and research](#)”, *OECD Health Working Papers*, No. 99, OECD Publishing, Paris.
- OECD (2019a), [Measuring the Digital Transformation: A Roadmap for the Future](#), OECD Publishing, Paris.
- OECD (2019b), [Fiscal Challenges and Inclusive Growth in Ageing Societies](#), Background paper to the G20.
- OECD (2019c), [Getting Skills Right: Future-Ready Adult Learning Systems](#), Getting Skills Right, OECD Publishing, Paris.
- OECD (2019d), [OECD Employment Outlook 2019: The Future of Work](#), OECD Publishing, Paris.
- OECD (2019e), [Working Better with Age, Ageing and Employment Policies](#), OECD Publishing, Paris.
- OECD (2019f), [OECD Economic Surveys: Japan 2019](#), OECD Publishing, Paris.
- OECD (2018a), [OECD Pensions Outlook 2018](#), OECD Publishing, Paris.

- OECD (2018b), [Taxation of Household Savings](#), OECD Tax Policy Studies, No. 25, OECD Publishing, Paris.
- OECD (2018c), [Financial Incentives and Retirement Savings](#), OECD Publishing, Paris.
- OECD (2018d), [Working Better with Age: Japan, Ageing and Employment Policies](#), OECD Publishing, Paris.
- OECD (2018e), [Key Policies to Promote Longer Working Lives in Denmark](#), OECD Publishing, Paris.
- OECD (2018f), [OECD Economic Surveys: Finland 2018](#), OECD Publishing, Paris.
- OECD (2018g), [Ageing and Employment Policies: United States 2018: Working Better with Age and Fighting Unequal Ageing](#), Ageing and Employment Policies, OECD Publishing, Paris.
- OECD (2018h), [Key Policies to Promote Longer Working Lives in Spain](#), OECD Publishing, Paris.
- OECD (2018i), [Consumption Tax Trends 2018: VAT/GST and Excise Rates, Trends and Policy Issues](#), OECD Publishing, Paris.
- OECD (2018j), [The Role and Design of Net Wealth Taxes in the OECD](#), OECD Tax Policy Studies, No. 26, OECD Publishing, Paris.
- OECD (2018k), [Care Needed: Improving the Lives of People with Dementia](#), OECD Health Policy Studies, OECD Publishing, Paris.
- OECD (2017a), [Health at a Glance 2017: OECD Indicators](#), OECD Publishing, Paris.
- OECD (2017b), [OECD Economic Surveys: Switzerland 2017](#), OECD Publishing, Paris.
- OECD (2017c), [Investing in Climate, Investing in Growth](#), OECD Publishing, Paris.
- OECD (2017d), [Preventing Ageing Unequally](#), OECD Publishing, Paris.
- OECD (2017e), [Pensions at a Glance 2017: OECD and G20 Indicators](#), OECD Publishing, Paris.
- OECD (2017f), [OECD Environmental Performance Reviews: Switzerland 2017](#), OECD Environmental Performance Reviews, OECD Publishing, Paris.
- OECD (2017g), [Health Policy in Switzerland](#).
- OECD (2016a), [OECD Core Principles of Private Pension Regulation](#).
- OECD (2016b), [Israel's green tax on cars: lessons in environmental policy reform](#), *OECD Environment Policy Papers*, No. 5, OECD Publishing, Paris.
- OECD (2015a), [Regulation of Insurance Company and Pension Fund Investment](#), OECD Report to G20 Finance Ministers and Central Bank Governors.
- OECD (2015b), [Raising public spending efficiency](#), in *OECD Economic Surveys: Switzerland 2015*, OECD Publishing, Paris.
- OECD (2014a), [The Silver Economy as a Pathway for Growth: Insights from the OECD-GCOA Expert Consultation](#).
- OECD (2014b), [Vieillessement et politiques de l'emploi : Suisse 2014: Mieux travailler avec l'âge](#) [Ageing and Employment Policies: Switzerland 2014: Working Better with Age], Vieillessement et politiques de l'emploi, Éditions OCDE, Paris.
- OECD (2014c), [Mortality Assumptions and Longevity Risk: Implications for Pension Funds and Annuity Providers](#), OECD Publishing, Paris.
- OECD (2012), [Making the tax system less distortive](#), in *OECD Economic Surveys: Switzerland 2015*, OECD Publishing, Paris.
- OECD (2004), [Babies and Bosses - Reconciling Work and Family Life \(Volume 3\): New Zealand, Portugal and Switzerland](#), OECD Publishing, Paris.
- OECD (2000), [OECD Economic Surveys: Switzerland 2000](#), OECD Publishing, Paris.
- OECD/EU (2018), [Health at a Glance: Europe 2018: State of Health in the EU Cycle](#), OECD Publishing, Paris/European Union, Brussels.
- OECD/EU (2013), [A Good Life in Old Age?: Monitoring and Improving Quality in Long-term Care](#), OECD Health Policy Studies, OECD Publishing, Paris.

- OECD/KIPF (2014), [The Distributional Effects of Consumption Taxes in OECD Countries](#), OECD Tax Policy Studies, No. 22, OECD Publishing, Paris.
- OECD/WHO (2011), [OECD Reviews of Health Systems: Switzerland 2011](#), OECD Reviews of Health Systems, OECD Publishing, Paris.
- Ollivaud, P. (2019), "Insights into Switzerland's high household saving ratio", forthcoming.
- Pisu, M. (2014), "[Overcoming Vulnerabilities of Health Care Systems](#)", *OECD Economics Department Working Papers*, No. 1132, OECD Publishing, Paris.
- Polynomics (2018), *Abschätzung der Kostenwirkung des Wohn und Pflegemodells 2030 [Estimation of the Cost Impact of Housing and Care Models 2030]*.
- Polynomics/Interface/University of Basel (2018), *Regulierungsfolgenabschätzung zur Einführung eines Referenzpreissystem in der Schweiz [Reference Price System in Switzerland]*.
- Roten, N. (2019), [Vers un Libre Choix de la Caisse de Pension ? \[Towards a Free Choice of Pension Fund?\]](#), Avenir Suisse, (accessed on 15 April 2019).
- Santésuisse/Interpharma (2018), [Medikamenten-Auslandpreisvergleich 2017 \[International Drug Price Comparison 2017\]](#), (accessed on 1 April 2019).
- Schaltegger, C. (2018), [Gefährliche Flexibilisierung \[Dangerous Flexibilisation\]](#), Finanz and Wirtschaft, 20 September.
- Schneider, E. et al. (2017), *Mirror, Mirror 2017: International Comparison Reflects Flaws and Opportunities for Better U.S. Health Care*, The Commonwealth Fund.
- Schüpbach, J. et al. (2018), *Occupational Pensions: Lump Sum or Annuity?*, Credit Suisse.
- Schwendimann, R. et al. (2016), "Factors associated with high job satisfaction among care workers in Swiss nursing homes – a cross sectional survey study", *BMC Nursing*, Vol. 15/1.
- SECO (2019), *Indicateurs de la Situation des Travailleuses et Travailleurs Agés sur le Marché Suisse du Travail [Indicators of the Situation of Older workers in the Swiss Labour Market]*, Documents for the 2019 Annual Conference on Older Workers, State Secretariat for Economic Affairs, Bern.
- Surveillance des Prix (2018), *Newsletter*, No 6/18, Swiss Confederation, Bern.
- Swiss Federal Audit Office (2007), *Lower Value Added Tax Rates as a Tax Subsidy: Evaluation of the Reduced rate for Food and Related Sectors*, Swiss Federal Audit Office, Bern.
- Swisscanto (2018), *Étude sur les Caisses de Pension en Suisse en 2018 [Study on Pension Funds in Switzerland in 2018]*, Swisscanto Prevoyance SA.
- Thévenon, O. (2013), "[Drivers of female labour force participation in the OECD](#)", *OECD Social, Employment and Migration Working Papers*, No. 145, OECD Publishing, Paris.
- van Dender, K. (2019), "[Taxing vehicles, fuels, and road use: Opportunities for improving transport tax practice](#)", *OECD Taxation Working Papers*, No. 44, OECD Publishing, Paris.
- Vöhringer, F. (2017), *Assessing the Impacts of Climate Change for Switzerland: Final Report*, École Polytechnique Fédérale de Lausanne, Lausanne.
- Woodland, A. (2016), "Taxation, Pensions, and Demographic Change", in *Handbook of the Economics of Population Aging*, Elsevier.