

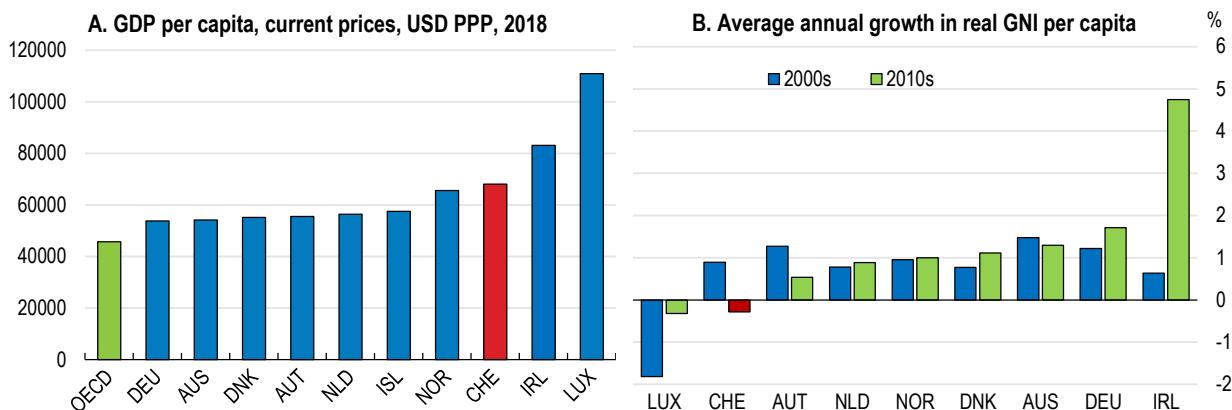
1 Key policy insights

Economic activity has softened but wellbeing is high overall

Switzerland's living standards remain high. Its population is healthier than in many countries and is well educated. This contributes to high employment rates and narrow wage differentials. As a small open economy, Switzerland has benefited from the flow of ideas, people and capital. It boasts world-class industries and attracts international talent. Zurich and Geneva routinely rank among the world's most liveable cities. The challenge is therefore to sustain these achievements.

High labour productivity together with high employment rates generate the third-highest GDP per capita in the OECD (Figure 1.1, Panel A). However, productivity growth has been low, making maintaining real incomes more difficult since the global financial crisis (Panel B). Digitalisation and new technologies hold the promise of raising productivity by spurring innovation, generating efficiencies and improving services (OECD, 2019a). Switzerland's near-universal high-speed broadband network and long tradition of continuing education mean that it is well placed to reap these benefits. But, as elsewhere, some groups risk being left behind.

Figure 1.1. GDP per capita is amongst the highest in the OECD



Note: Gross national income (GNI) measures the total domestic and foreign value added claimed by residents, comprising GDP plus net receipts of primary income from non-resident sources.

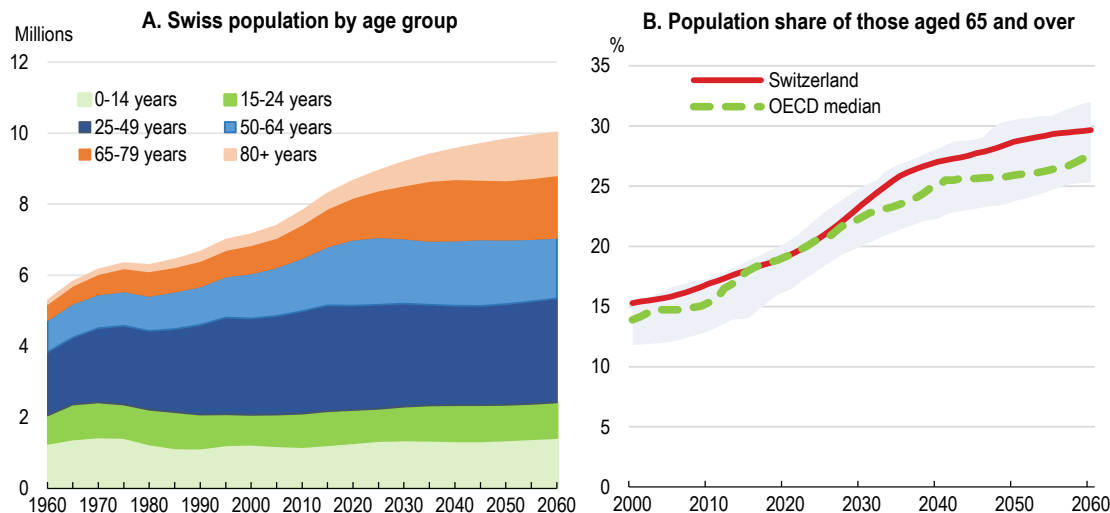
Source: OECD, *National Accounts* database; World Bank, *World Bank Development Indicators* database.

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Population ageing presents new opportunities for the economy and society, but challenges as well. By the 2050s, almost 30% of the Swiss population will be at least 65 years old, which is currently the statutory retirement age for men (Figure 1.2). Retirement provision and health care and its costs have become the most important concerns of Swiss (gfs.bern, 2018). With rising longevity, the number of people aged 80 or over will more than double by 2045. On current policies, the pension benefits from the mandatory system will become less comfortable, which requires behavioural and policy adjustments. Likewise, earlier action can help Switzerland meet its climate change targets at lower cost. It is aiming to achieve net zero carbon

emissions by 2050. Forward-looking policies can reap the benefits and address the challenges associated with these forces.

Figure 1.2. 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 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.

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Against this background, the main messages of this *Survey* are:

- Updating the pension system and lengthening working lives are crucial to ensure that workers across the income distribution receive adequate incomes during retirement in the future.
- Ensuring access to quality health and long-term care as the population ages will require lowering costs of provision and reducing the fragmentation in the system.
- Addressing the barriers to adoption of digital technologies and improving the availability of information will enable firms, individuals and governments to reap the benefits of digitalisation.

Box 1.1. Key federal government policies to prepare for the future

The government has medium-term strategies in a number of key areas, including digitalisation and ageing.

The *Digital Switzerland Strategy* aims to use the digital transformation to promote: innovation and prosperity; equal opportunities; transparency and security; and sustainable development.

The *Swiss eGovernment Strategy 2020-2023* aims to ensure implementation of joint objectives of the Confederation, cantons and municipalities for the digitisation of government services and processes. It is expected to be adopted in 2019.

The *Human Resource Strategy 2020-2023* aims to create the necessary foundations to keep pace with developments in the labour market including changing and increasingly interdisciplinary tasks and the need for agile procedures.

The *ICT Strategy 2020-2023* sets out the strategic goals and measures for the function and organisation of federal IT and use of ITC to facilitate further digitalisation in the business sector.

The *Strategy for Vocational Education and Training 2030* aims to anticipate future changes in the labour market and society to prepare vocational education for the future.

The *Health2020 Strategy*, which was approved in 2013, aims to address the growth in the number of older people and chronic diseases.

The *Energy Strategy 2050* aims to develop energy efficiency, promote renewable energy and transition away from nuclear power.

In addition, the government is currently preparing a long-term low greenhouse gas emission development strategy – *Climate Strategy 2050* – where it will lay out its mid-century climate targets.

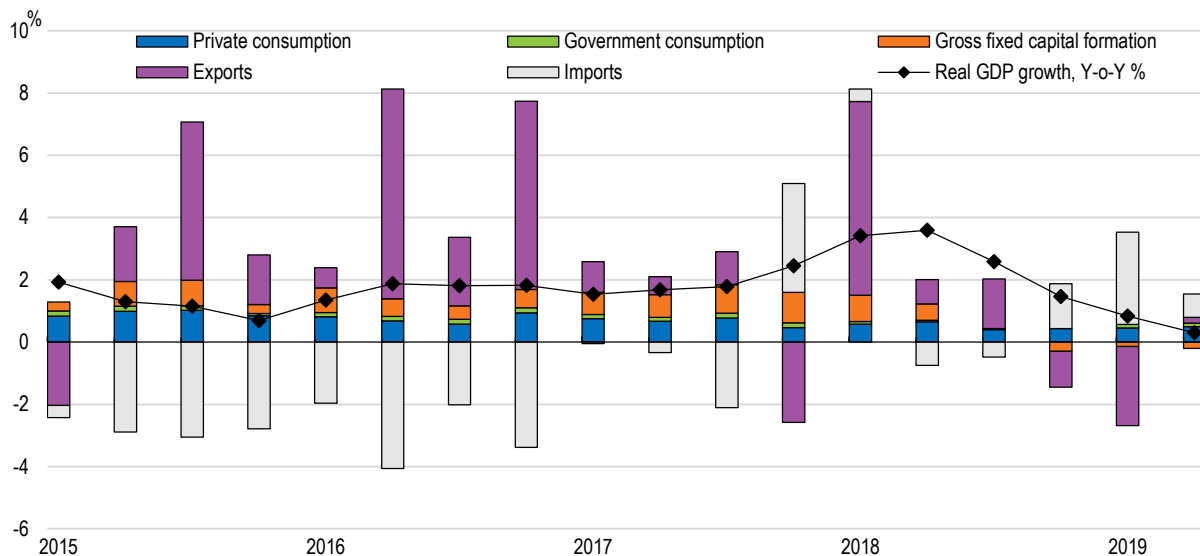
Source: National authorities.

Economic activity has slowed

After surpassing 3% year-on-year in early 2018, GDP growth slowed significantly (Figure 1.3). However, this partly reflects the unwinding of the transitory boost from international sporting events in 2018, which boosted Switzerland's income as it hosts major international sporting associations; the effect is estimated at ½ percentage point (SECO, 2018a). The slowing in global trade also played a role. Investment has also been soft, mirrored by weak imports. Survey-based indicators of business activity point to subdued conditions (Figure 1.4, Panel A). Consumer confidence has also eased from high levels in early 2018 but consumption is holding up.

Figure 1.3. Growth has slowed from a rapid pace

Contributions to year-on-year growth



Note: Inventories are not shown. Data are seasonally and working-day adjusted.

Source: OECD, *OECD Economic Outlook* database.

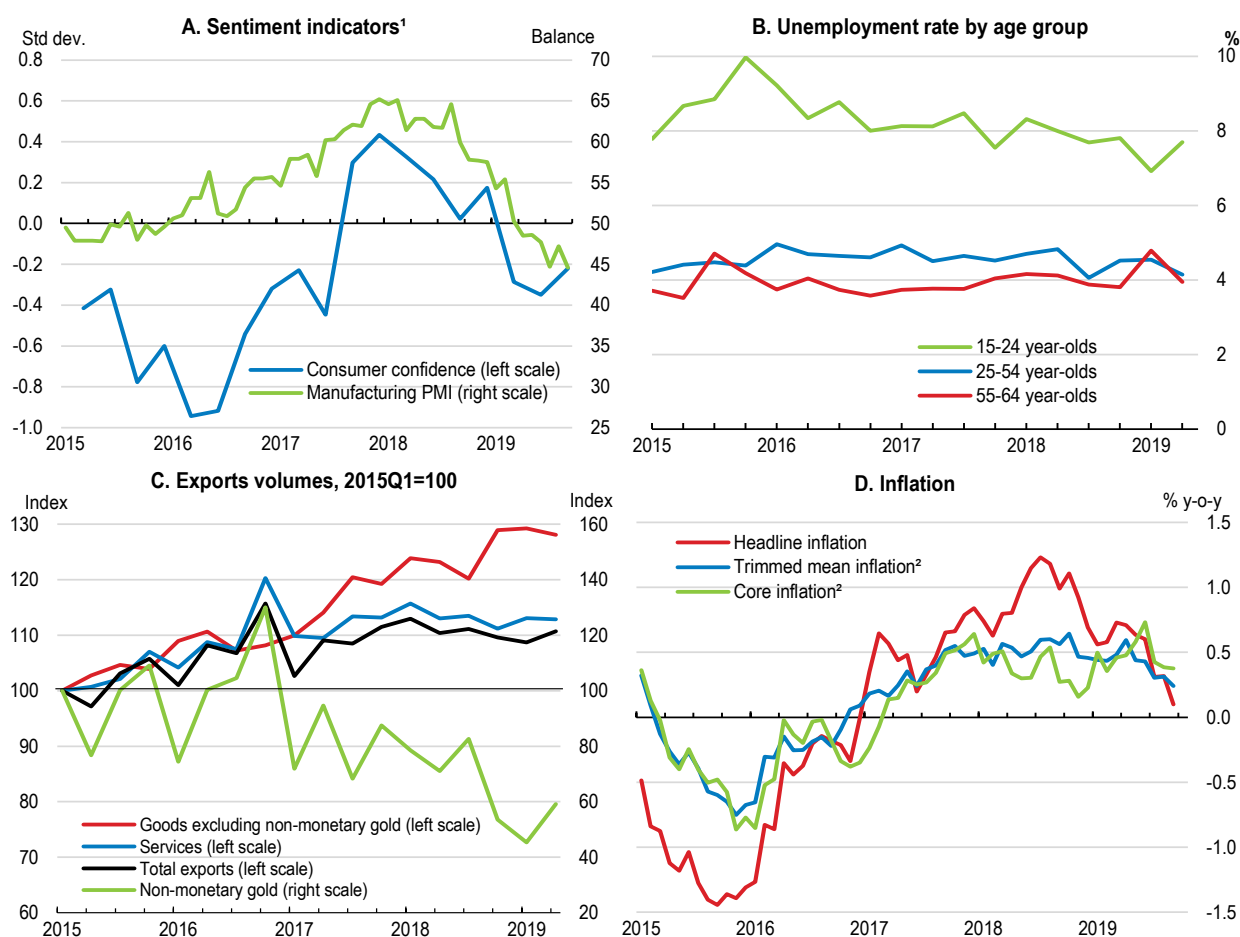
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The labour market continues to perform well overall. Youth unemployment has trended down and is well below the OECD average, at 8% versus 11% (Figure 1.4, Panel B). Unemployment amongst older workers is lower but around 60% of those unemployed have been out of work for over one year. By mid-2019, the

job vacancy rate had reached 1.6%, its highest level since 2008. Skills shortages have grown, especially in technical and scientific occupations. Despite shortages and productivity gains in 2018 real wages have been flat. This may reflect the need for firms to rebuild margins after years of real wages outpacing lacklustre productivity growth. The backward-looking nature of wage setting also hampers adjustment in periods of low inflation (KOF, 2019). But in the absence of cost pressures from wages or imports and against the backdrop of slower GDP growth, measures of underlying inflation are subdued (Panel D).

Overall export growth has been disappointing in recent years, due to modest growth in services exports and a large fall in the typically very volatile exports of non-monetary gold – the latter being mirrored in imports (Figure 1.4, Panel C). Export developments have been heterogeneous across goods sectors also. OECD research highlights that Switzerland became increasingly specialised in fast-growing sectors over 1995-2015 such as pharmaceuticals, which now accounts for 32% of exports excluding special transactions and non-monetary gold (Araújo, Chalaux and Haugh, 2018) (Figure 1.5). Pharmaceuticals and also merchanting activities are relatively insensitive to exchange rate conditions and contribute significantly to the trade surplus (OECD, 2017a; Grossmann, Lein and Schmit, 2016; Yeung et al., 2016). However, other industries representing a larger share of total employment are much more affected by the strength of the currency. Exports of machinery and metal goods, financial services, transport and tourism have stagnated.

Figure 1.4. Indicators suggest that underlying growth is likely to be close to trend



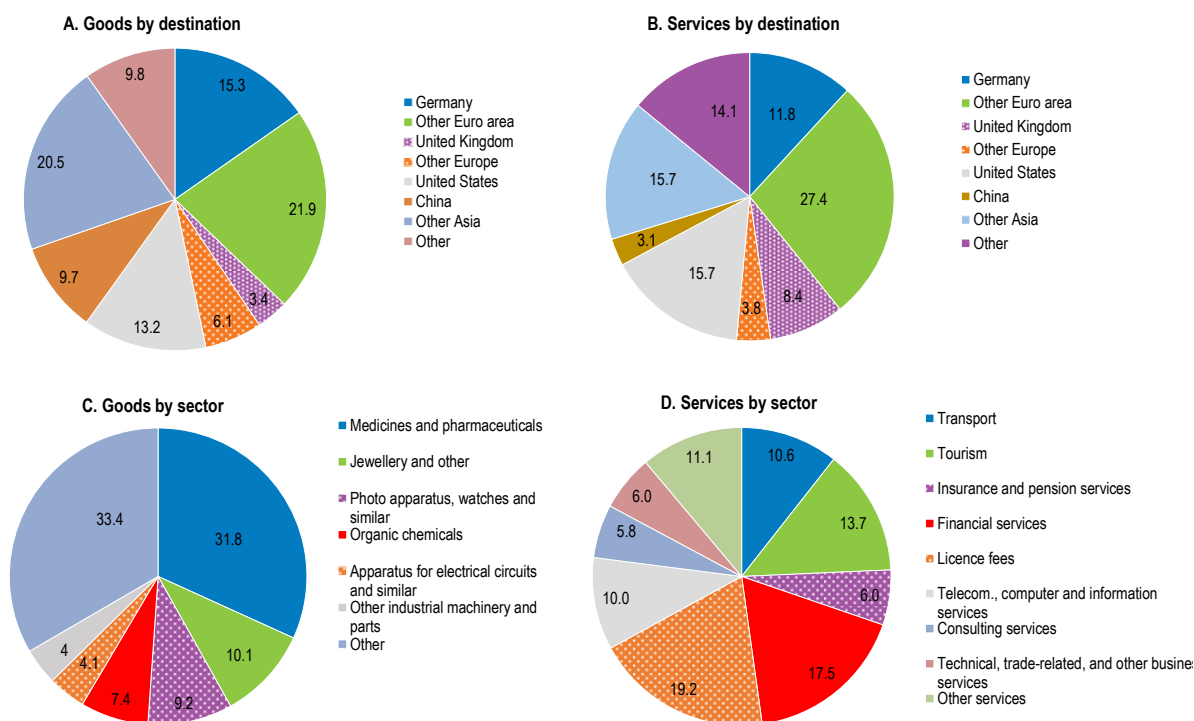
1. Consumer confidence is the standard deviation from average level since 1995.

2. Core inflation excludes food and energy. Trimmed mean inflation excludes items with the most extreme price changes each month, equivalent to 30% of the CPI basket.

Source: OECD, *Monthly Economic Indicators* database, *Labour Market* database; SECO; Refinitiv.

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Figure 1.5. Europe remains Switzerland's main export destination



Note: Data are for 2018. In Panel C goods exports exclude “special transactions” and non-monetary gold, which account for 22% of the value of gross exports.

Source: OECD, *International Trade Statistics* database; Swiss National Bank.

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Abstracting from the effect of international sporting events, growth is likely to be close to trend in 2019 and slow slightly in 2020 (Table 1.1). In 2020, uncertainty and depressed global trade are likely to continue dragging on investment and exports, and accordingly, GDP growth (Table 1.1). However, international sporting events will add to export income. Household consumption will gradually gain momentum as skill shortages feed into wage growth. The household saving rate will remain well above that in other countries. This high rate can be ascribed inter alia to the large share of Swiss still of working age. Individuals' uncertainty about their longevity and health needs in old age as well as a desire to compensate for low investment returns may also add to savings. High household saving will continue contributing to the high current account surplus (OECD, 2017a).

Table 1.1. Macroeconomic indicators and projections

Annual percentage change, volume, unless otherwise specified

	2015	2016	2017	2018	2019	2020
	Current prices (CHF billion)					
Gross domestic product (GDP)¹	654	1.7	1.9	2.8	0.8	1.4
Private consumption	349	1.4	1.3	1.0	1.1	1.4
Government consumption	78	1.3	1.2	0.3	1.1	1.1
Gross fixed capital formation	156	2.5	3.5	1.1	0.4	1.5
Housing	21	-1.2	0.6	-0.1	1.1	1.6
Final domestic demand	582	1.7	1.8	0.9	0.9	1.4
Stockbuilding ²	-5	-0.8	0.0	-0.1	-0.1	0.1
Total domestic demand	578	0.6	1.7	0.8	0.9	1.5
Exports of goods and services	407	6.3	0.0	2.9	-0.4	2.7
Imports of goods and services	330	5.7	-0.5	-0.3	-0.6	3.3
Net exports ²	76	1.1	0.3	2.0	0.1	0.0
Other indicators (growth rates, unless specified)						
GDP adjusted for major sporting events	..	1.4	2.2	2.3	..	..
Potential GDP	..	1.6	1.6	1.5	1.4	1.3
Output gap ³	..	-0.8	-0.5	0.7	0.1	0.2
Employment	..	1.5	0.7	0.8	1.1	0.6
Unemployment rate ⁴	..	4.9	4.8	4.7	4.5	4.5
GDP deflator	..	-0.6	-0.6	0.3	0.7	0.7
Consumer price index	..	-0.4	0.5	0.9	0.5	0.4
Core consumer prices	..	-0.3	0.3	0.5	0.5	0.5
Terms of trade	..	-2.0	-1.8	-0.5	-1.0	-0.1
Household saving ratio, net ⁵	..	17.8	17.3	17.3	17.6	17.6
Trade balance ⁶	..	11.6	10.7	12.3	11.7	11.5
Current account balance ⁶	..	9.5	6.5	10.5	10.4	10.1
General government fiscal balance ⁶	..	0.3	1.2	1.4	1.2	1.0
Underlying general government fiscal balance ³	..	0.6	1.4	1.1	1.1	0.9
Underlying government primary fiscal balance ³	..	0.8	1.5	1.2	1.1	0.9
General government gross debt (SNA definition) ⁶		42.0	42.9	41.8	40.7	40.0
General government net debt ⁶		0.0	-10.2	-11.3	-12.4	-13.1
Three-month money market rate, average	..	-0.7	-0.7	-0.7	-0.7	-0.8
Ten-year government bond yield, average	..	-0.4	-0.1	0.0	-0.6	-0.7

1. Based on seasonally and working-day adjusted data.

2. Contribution to changes in real GDP.

3. As a percentage of potential GDP.

4. As a percentage of the labour force.

5. As a percentage of household disposable income.

6. As a percentage of GDP.

Source: OECD, OECD *Economic Outlook* database, October 2019.

Further slowing in major trading partners like Germany would depress exports and investment. An escalation of global tensions could push up the safe-haven Swiss franc and also dampen exports. However, growth may turn out healthier if past cost moderation provides a stronger-than-foreseen boost to exports. Direct effects from a Brexit-related shock should be mitigated by the government's "Mind the Gap" strategy, which includes bilateral agreements with the United Kingdom on trade, transport, insurance, and migration. Likewise, recognition of equivalence decisions in the financial sector will mitigate the direct consequences. Nevertheless, spillover effects from a disorderly Brexit could be large (Table 1.2). Shocks to international financial markets or a house price correction could also prove disruptive. Nonetheless, the probability of a severe recession – with GDP per capita falling by 2% – resulting from cyclical factors in the near-term seems low currently as there are few signs of overheating (Box 1.2).

The future of Switzerland's economic relationship with the European Union is uncertain, clouding the medium-term outlook. Negotiations on an institutional framework agreement are ongoing but have not progressed recently. The prospect of prolonged negotiations could hurt business confidence and investment. Failing to reach agreement on an institutional framework covering the market access agreements and to either update these or conclude other agreements risks eroding Switzerland's level of integration in Europe. In addition, in 2020 a popular vote is planned on an initiative that calls for an end to the Agreement on Free Movement of People. This would not only affect foreign workers in Switzerland but also the so-called "guillotine clause" which links the other bilateral agreements of 1999 with the one on the free movement of people. As EU members are a major source of foreign workers and important trading partners, the economic costs could be large. Some studies suggest that it could cost Switzerland 5-7% of GDP by 2035 (BAK Basel, 2015; Ecoplan, 2015). Such estimates, however, are sensitive to the model used. Moreover, they do not account for other potential costs such as losing attractiveness as a business location.

Table 1.2. Low-probability events that could lead to major changes in the outlook

Shock	Possible impact
Disorderly exit of the United Kingdom from the European Union	As the United Kingdom is an important trading partner and Switzerland is closely linked to UK trading partners, potential knock-on effects through trade, financial sector distress, financial markets or uncertainty could be disruptive.
International corporate debt crisis	Amid record-high levels of corporate bonds outstanding globally, a downturn could lead to debt-servicing problems for highly leveraged companies and repricing of risk with reverberations through international financial markets. Safe-haven flows could push up the exchange rate, reducing Swiss exports, hurting confidence and raising deflation risks. Internationally active banks could also be exposed.
Breakdown of multilateralism	As a small open economy, Switzerland would be severely affected by a major increase in barriers to trade and capital flows.
Major house price correction	A large correction in housing prices coinciding with an economic downturn could expose vulnerabilities in the financial system, causing a crisis in the financial sector that fed back to the real economy.

Box 1.2. Assessing the risk of a severe recession

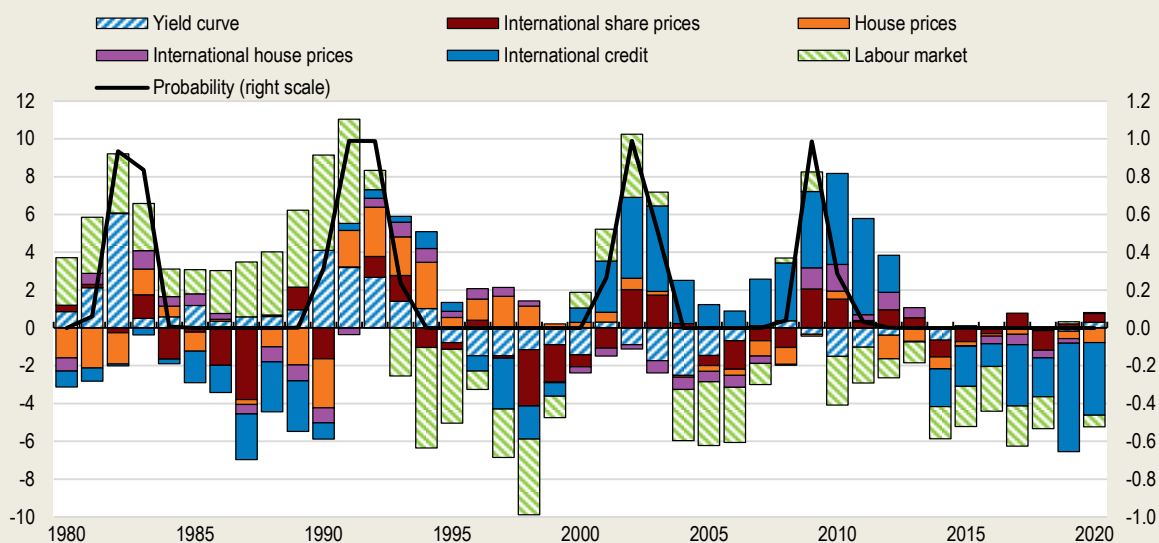
One way of assessing vulnerabilities is to model the probability of experiencing a severe recession – defined as a cumulative fall of 2% in real GDP per capita – following Turner, Chalaux and Morgavi (2018). Such models tend to suggest that downturn risks are heightened when the business and financial cycles simultaneously peak. A model of this type estimated for Switzerland includes the yield curve slope and the unemployment gap (as indicators of the business cycle) as well as growth in the house-price-to-rent ratio and international measures of house price and credit growth (as indicators of the financial cycle), which are all predictors of previous severe recessions in Switzerland (detailed in Annex 1.B).

The current predictions from these models suggest that the probability of a severe recession in 2020 is low (Figure 1.6). This signal stems from both business cycle and financial cycle variables. Although the yield curve slope has flattened, the unemployment gap is closed, not pointing to an overheating business cycle. In addition, growth in domestic house prices, international house prices and international credit remain relatively modest compared with previous severe recessions. However, two reasons for caution are that these models are still experimental and they cannot detect the potential for a shock that is unrelated to these variables.

Changing circumstances in trading partners are a key source of risk to Switzerland's open economy. The models for some key trading partners (Germany and the United Kingdom) suggest that risks are more elevated in those economies than Switzerland's. Thus these spillovers to Switzerland currently represent the main source of risk to the economy's near term prospects.

Figure 1.6. The risk of a severe recession appears to be low in the near term

Contributions to probability in the year-ahead projection made in autumn



Note: The bar chart shows a decomposition of the factors contributing to downturn risks in year-ahead forecasts published by the OECD in November/December. Explanatory variables that were not yet available to 2019Q3 were estimated using available data. The probability of a severe recession in 2020 is represented by the sum of stacked bars. The bars are computed as products of de-meaned explanatory variables and their estimated coefficients (left-hand scale) and so can take negative and positive values. The sum of the bars are then converted to a probability between 0 and 1 by the cumulative normal distribution represented by the black line (right-hand scale). The relationship between the summed bars and probability is therefore non-linear, but peaks in the summed bars clearly correspond with spikes in the downturn.

Source: OECD calculations based on D. Turner, T. Chalaux and H. Morgavi (2018), "Fan charts around GDP projections based on probit models of downturn risk", *OECD Economics Department Working Papers, No. 1521*.

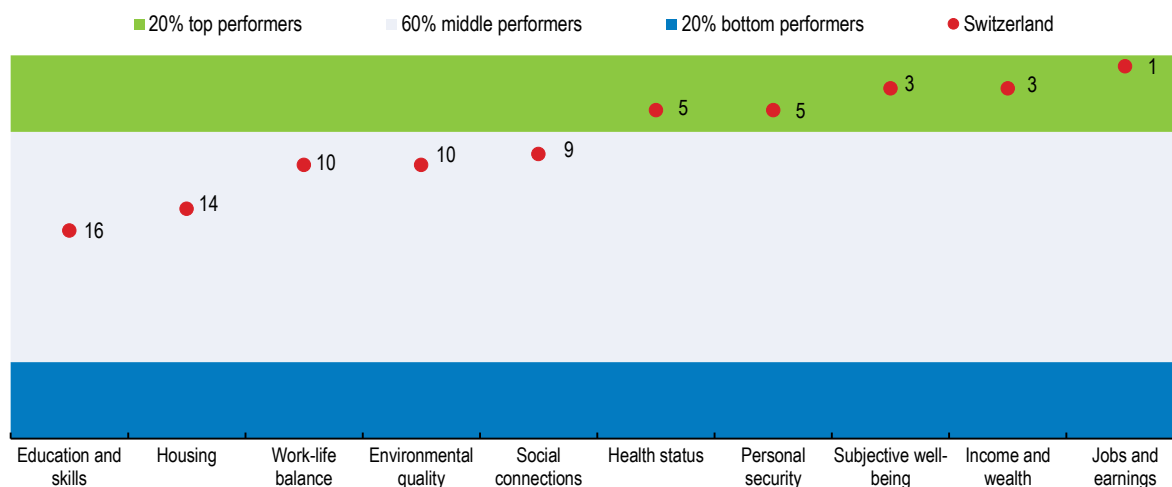
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Well-being is high on a range of measures

Living standards remain among the highest OECD-wide, measured by access to the labour market, incomes, subjective well-being, personal security and health (Figure 1.7). As in other countries, labour market outcomes are better for those with more education. And health outcomes are better amongst higher income groups (OECD/EU, 2018). Nevertheless, such gaps are generally narrower than in many other countries. However, Switzerland compares less well in terms of housing and education. Housing costs are high, absorbing over one-fifth of household gross disposable income. Almost 90% of Swiss aged 25-64 have completed upper secondary education but total years of education are around the OECD average. Switzerland's progress towards the Sustainable Development Goals is similar, with good performance in many areas but some large challenges (OECD, 2019b).

Figure 1.7. Living standards are amongst the highest in the OECD

Better Life Index, country rankings from 1 (best) to 36 (worst)



Note: Each well-being dimension is measured by one to four indicators from the OECD Better Life Index set. Normalised indicators are averaged with equal weights.

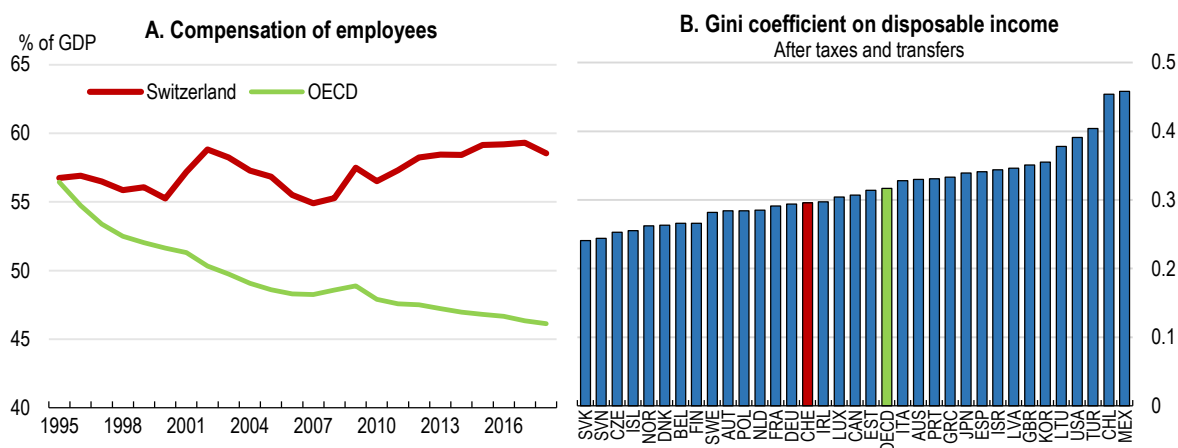
Source: OECD, *OECD Better Life Index*, www.oecdbetterlifeindex.org

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Switzerland has defied the trend of rising income inequality observed across the OECD in recent decades. Labour's share of GDP has remained close to 60% while the OECD average declined (Figure 1.8, Panel A). Employment rates are high irrespective of socio-economic status. Therefore, despite limited redistribution, income inequality after taxes and transfers is around the OECD average (Panel B). Still, the gender earnings gap for full-time employees remains sizeable, at 15%. This, with women's tendency to work part time, drives a sizeable gap in average incomes. And there is scope to improve intergenerational mobility, which is weaker than in the average OECD country (OECD, 2018a).

High employment rates and short spells of unemployment help reduce poverty. The relative income poverty rate for working-age Swiss is one of the lowest in the OECD. The 19.5% poverty rate amongst those aged over 65 far exceeds the 13.5% OECD average. Women are at greater risk of old-age poverty due to their longer lifespan and lower lifetime earnings. However, the extent of material deprivation is low, at 1.8% for the older population. One explanation is that many older Swiss have sizeable assets that are not included in income-based poverty rates; recent research suggests that the risk of poverty is no greater for older people after liquid assets are accounted for alongside income (FSO, 2018a). The public pension system is redistributive, which is also likely to play a role.

Figure 1.8. The high wage share contains inequality



Note: The Gini coefficient measures the extent to which the distribution of disposable income among households deviates from perfect equal distribution. A value of zero represents perfect equality and a value of 100 extreme inequality. Data refer to 2016 or 2017 for most countries; data for are for 2015 for Switzerland, Iceland, Japan, and Turkey. OECD is an unweighted average.

Source: OECD, *Economic Outlook* database, *Income Distribution* database.

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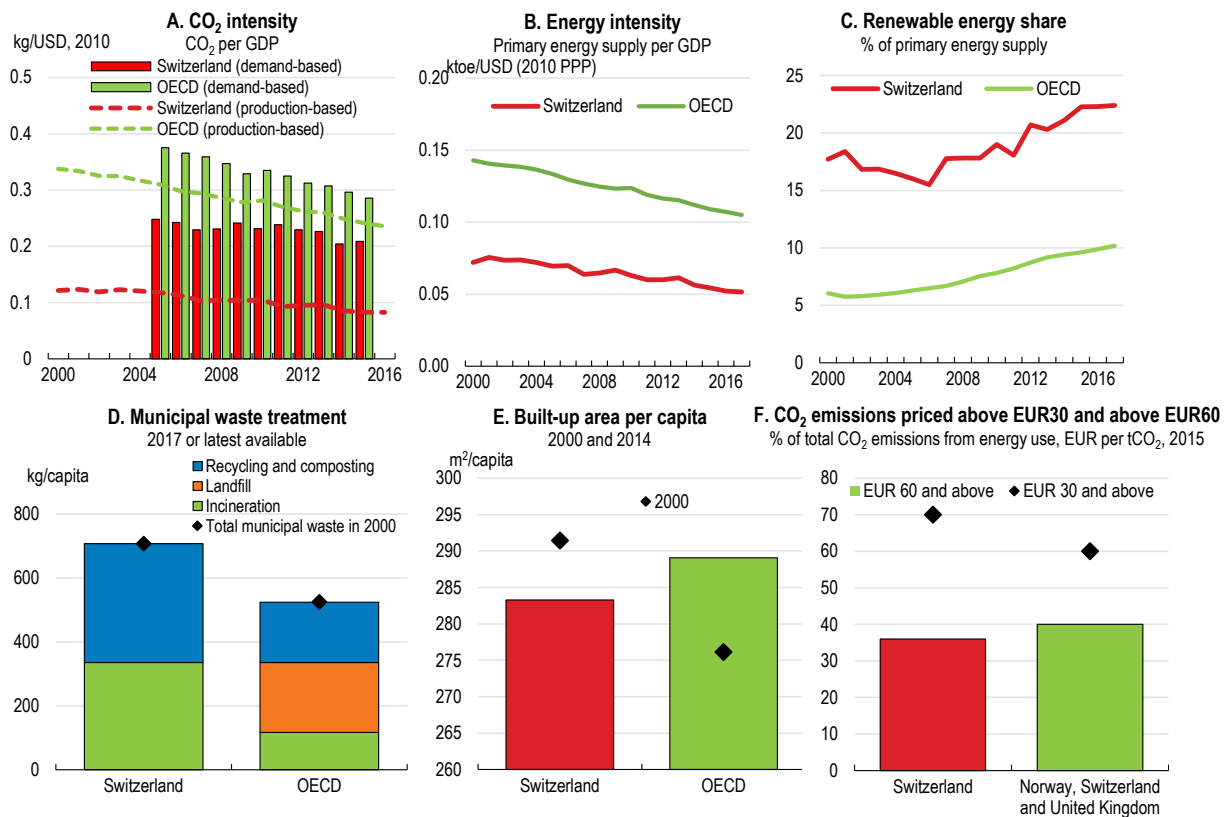
Environmental performance generally compares well

Switzerland's carbon intensity of GDP is one of the lowest in the OECD, reflecting lower energy intensity as well as almost carbon-free production of electricity, mostly nuclear and hydroelectric. However, progress in decoupling CO₂ emissions from GDP has slowed (Figure 1.9, Panels A-C). Switzerland has committed to reduce greenhouse gas emissions by 50% by 2030 compared to 1990, including by purchasing international credits that reduce emissions elsewhere. The targeted domestic reduction amounts to 30%. It would only be reached if draft revisions to the CO₂ Act are approved by Parliament and then not overturned by popular vote. Switzerland has also announced a goal of reaching net zero emissions by 2050 (including international credits). Recently the United Kingdom's Committee for Climate Change also proposed a 2050 net zero emissions target, and several other countries, including Sweden and France, have adopted or plan similar targets (Committee on Climate Change, 2019).

Switzerland sends no household waste to landfill and recycles most of it (Panel D). Despite waste disposal fees and other policy instruments, municipal waste per capita has continuously increased (OECD, 2017b). Consequently the volume of household waste remains large (Panel D). Relatedly, the carbon emission footprint of domestic consumption, including from imported goods, is much higher than the production-based measure even if it is below the OECD average (Panel A). However, Switzerland has absorbed population increases while limiting built-up surfaces (Panel E), which can help protect biodiversity and soil quality (Haščič and Mackie, 2018).

Among OECD countries, Switzerland gets closest in aligning its pricing of CO₂ emissions to international climate cost benchmarks (OECD, 2018b, 2018c, 2019c). The share of CO₂ emissions priced above EUR 60, a midpoint estimate of the carbon cost in 2020, has increased since 2015, notably in the housing sector. Nonetheless, as in many countries, industrial emissions are priced below the EUR 60 benchmark. Exemptions to the CO₂ tax reduce its effectiveness. From 2020, Switzerland's emissions trading scheme is set to be linked to that of the European Union, with the agreement only awaiting ratification.

Figure 1.9. Switzerland compares favourably on most green growth indicators



Source: OECD, *Green Growth Indicators* database.

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Extraordinary monetary policy has become ordinary

Monetary policy has been expansionary since the global financial crisis. Since 2015 the reference rate for monetary policy has hovered around -0.75% – the lowest in the OECD alongside Denmark (Figure 1.10, Panel A). At its June 2019 meeting, the Swiss National Bank (SNB) announced that it would start using a new “SNB policy rate” for communicating its interest rate decisions. The SNB seeks to keep secured short-term money market rates near its policy rate focusing on the “SARON”, an overnight rate. Prior to this, the SNB had announced a target range for the three-month Swiss franc Libor. At its September meeting, the SNB announced an adjustment of the basis for calculating the exemption threshold from negative interest rates and it will be updated monthly. The aim is to reduce the burden of negative interest rates on the banking sector while making the instrument more sustainable in the medium term.

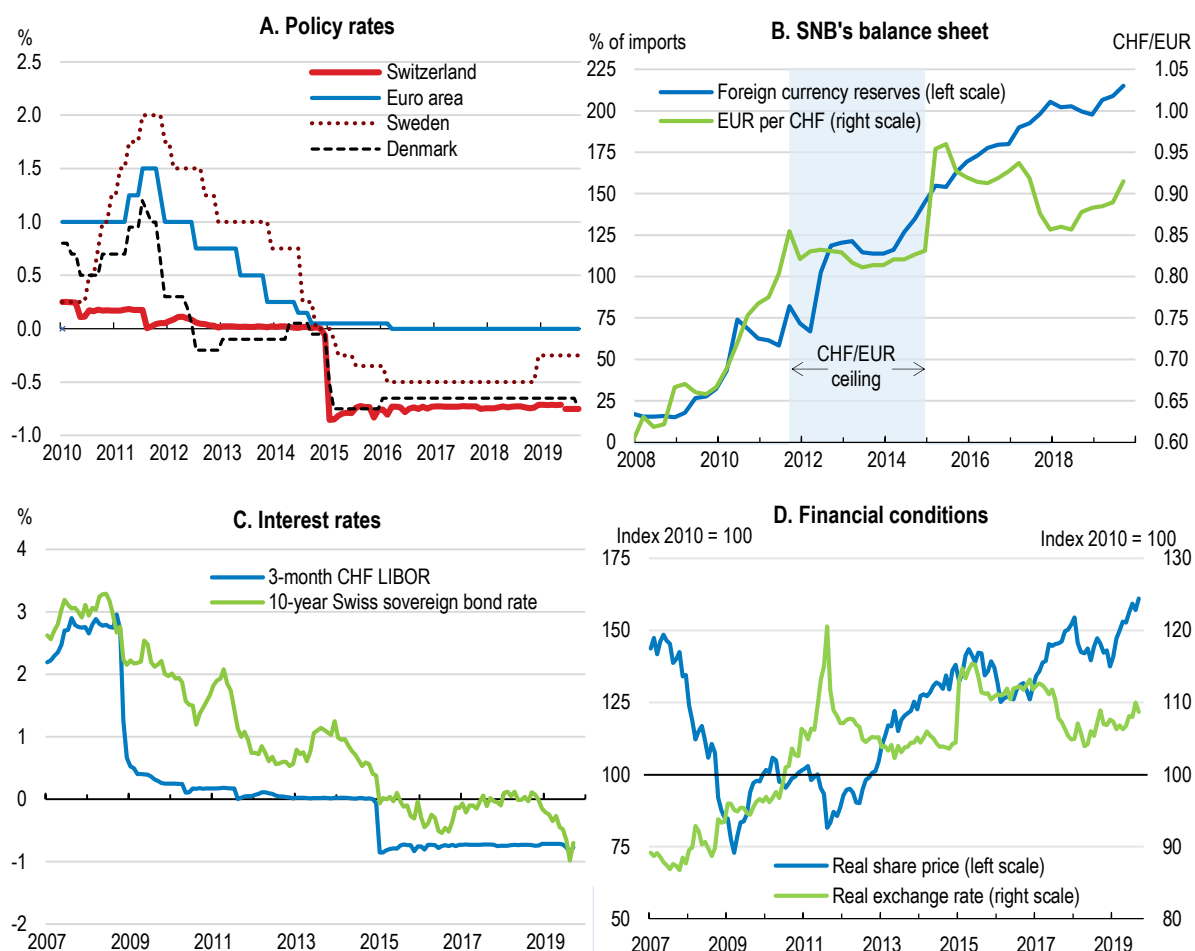
In the decade since the crisis, the SNB has purchased large amounts of foreign currency to prevent exchange rate appreciation from threatening price stability. Consequently, foreign currency reserves are estimated to have reached the equivalent of 111% of GDP or 211% of imports in September (Panel B). Assets are mostly held in foreign government bonds, although around 20% are invested in foreign equities according to prescribed rules for diversification. Investment policy principles and eligible asset classes and instruments are set out in the SNB’s Investment Policy Guidelines.

During 2019 financial conditions have generally improved with long-term interest rates declining and real equity prices rebounding although the real effective exchange rate has appreciated (Figure 1.10, Panels C and D). The combination of policy instruments has enabled the SNB to meet its target of keeping inflation

below 2% and prevent deflationary pressures from taking hold (Figure 1.4, Panel D). With estimates of the output gap around zero and measures of underlying inflation still modest, monetary policy is on hold.

The SNB has signalled that it will remain active in foreign exchange markets as necessary. If downside risks to the outlook materialise, the policy rate may become more negative. Some concerns about a zero lower bound on interest rates, such as cash hoarding, have so far proved unfounded: circulation of CHF 1000 notes (USD 1000) increased by 12% during 2015 but fell by 4.1% in the year to July 2019. Negative interest rates are primarily intended to maintain an interest rate differential vis-à-vis other economies in order to limit capital inflows. In theory, reducing cash use or creating mechanisms to transmit policy rates to cash may make interest rate cuts more potent in supporting demand (Agarwal and Kimball, 2019). But such policies are untested. And even in Sweden, where cash use is low, rate cuts lost potency (Eggertsson et al., 2019).

Figure 1.10. Monetary policy is very accommodative



Note: On 13 June 2019 a new monetary policy rate was introduced, the "SNB policy rate". Prior to this, the SNB set a target range for the three-month Swiss franc LIBOR with the latter used as the policy reference rate (shown in Panel A).

Source: OECD, *OECD Economic Outlook* database, *Main Economic Indicators* database; Refinitiv; Swiss National Bank.

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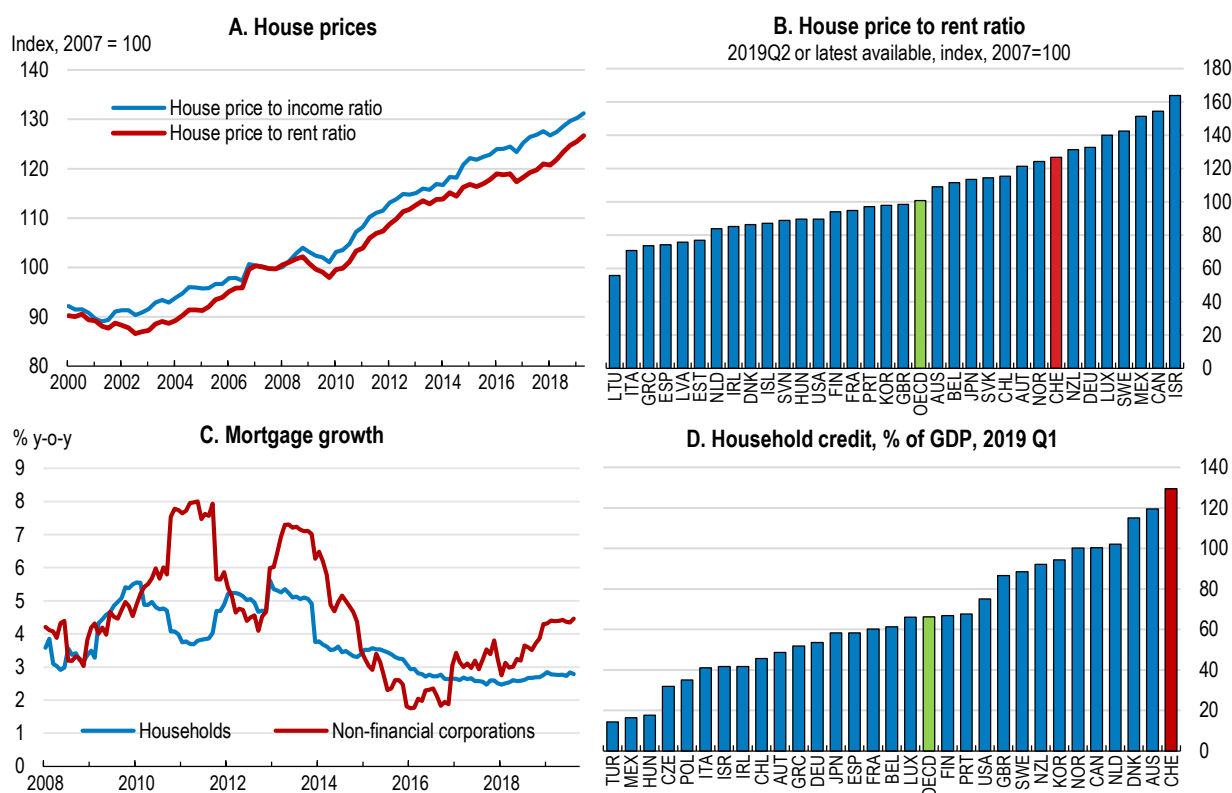
Increasing interest rates when possible would provide policy space and reduce financial stability risks somewhat. Once inflation rises towards 1%, the SNB should begin to remove stimulus. Clear communication could reduce the risk of exchange rate volatility. Nonetheless, the low-interest rate environment and large central bank balance sheet are likely to persist for many years, along with their associated risks.

Two interrelated risks from the low-interest rate environment are the downward pressure on banks' net interest margins and the build-up of housing market-related risks. Banks' margins and bank profitability narrowed further in 2018 (SNB, 2019). With more banks now charging negative interest rates on term deposits, this trend may slow, but interest on savings accounts is not negative. Low returns continue to incentivise risk-taking by banks and investors. This is clearest in the housing market where prices continue rising, outpacing rents and incomes (Figure 1.11, Panels A and B). Mortgage lending growth has picked up again, especially for businesses (Panel C). In the residential investment property segment, new loans with high loan-to-value ratios are commonly accompanied by high loan-to-income ratios, implying greater risk (SNB, 2019). Moreover, a growing share of mortgages are in areas with higher vacancy rates, raising exposures further (SNB, 2019). Households themselves are highly indebted (Panel D). Although aggregate household financial assets are high the distribution of net debt is unknown; given the low home ownership rate (40% in 2014, mostly with a mortgage), debt may be concentrated.

Risks have also expanded in the non-bank financial sector. Pension funds and life insurers are amongst investors adding to their real estate exposures to boost returns: holdings reached 22% of pension fund assets in 2018. Pension funds and life insurers have additional exposure to house prices through their own mortgage assets; their share of the mortgage market has risen to 1.5% and 4% respectively. Like in Japan, almost all life insurer liabilities are guaranteed return products, which adds to risks (BIS, 2018). The Committee on Global Financial Stability underlines that the solvency of life insurers and pension funds is particularly exposed when interest rates are very low for long. It expects most funds to adapt but some may not and their problems may reverberate through the financial sector. In Switzerland, official statistics for non-bank lenders are only available annually and with considerable lags, and completion of some surveys is voluntary (IMF, 2019a). Enhancing information sharing between various supervisors and improving data completeness and timeliness would help detect a deterioration in conditions sooner. Lending regulations should apply equally to bank and non-bank lenders.

Macroprudential policies and recurrent taxes on real estate can restrain housing market risks (IMF, 2019b; Cournède, Ziemann and Cavalleri, 2019). The Swiss Bankers Association – responsible for co-ordinating self-regulation – has adopted tighter self-regulation by reducing the maximum loan-to-value ratio for new investment property loans and requiring the loan-to-value ratio on investor mortgages to be reduced to two-thirds over 10 years (from 15). Such steps are welcome. More broadly, a proper framework setting lending limits should be enforced on a comply-or-explain basis, taking affordability into account, as recommended in the previous *Survey* (Table 1.3; OECD, 2017a). Additional macro-prudential instruments could be deployed to further reduce risks (IMF, 2019a). Limiting the tax deductibility of mortgage interest, as recommended in the 2015 *Economic Survey*, would also reduce incentives for high levels of indebtedness (OECD, 2015a). If a proposal to remove taxation of imputed rental income on owner-occupied housing proceeds, associated tax deductions should be removed and recurrent tax on real estate increased. The reform design and transition rules would need to take into account financial stability concerns and other tax settings.

Figure 1.11. Housing prices and credit continue rising



Note: In Panel C there are breaks in 2010 and 2013. The OECD average is unweighted.

Source: OECD, *Analytical House Price Indicators* database, *Resilience* database; Swiss National Bank.

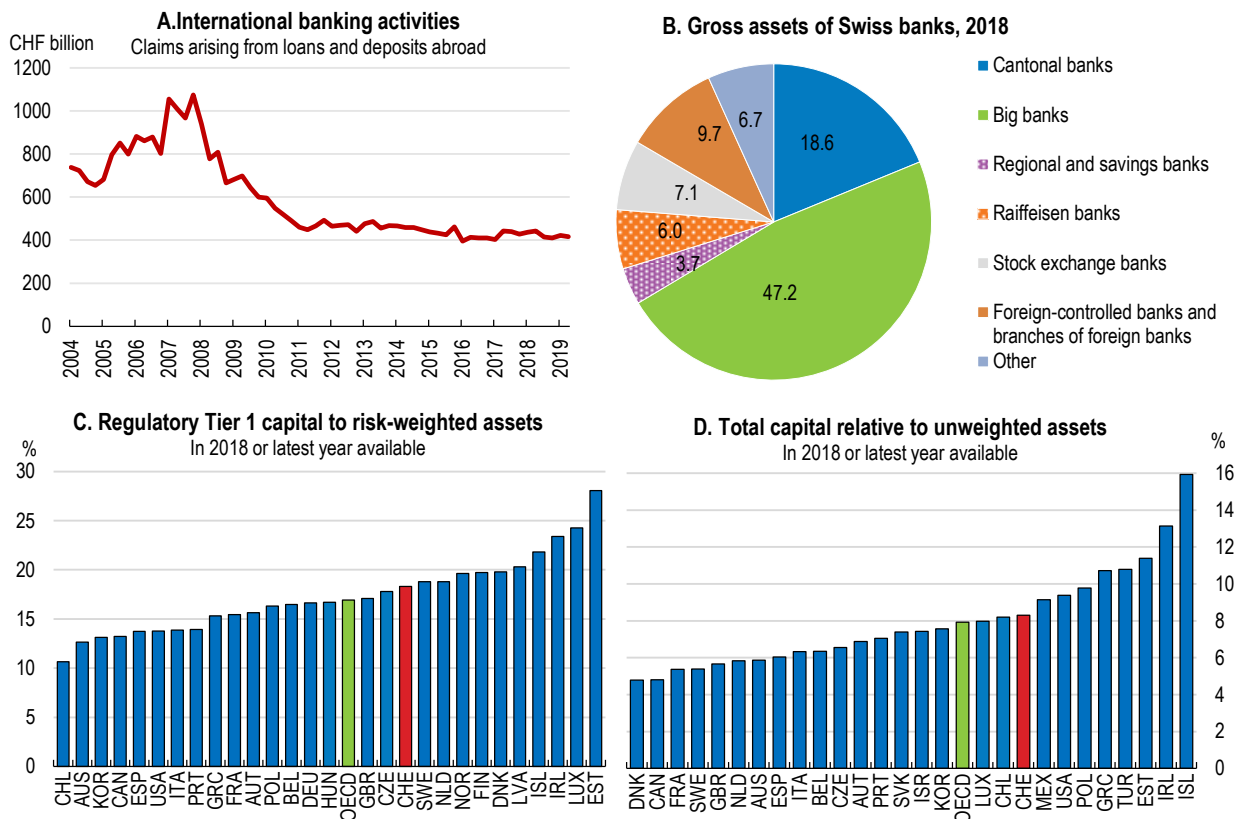
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Table 1.3. Past recommendations on monetary policy and financial stability

Recommendations in previous Surveys	Action taken since November 2017
Monitor closely mortgage lending to firms or households for rental properties, which may not be as responsive as the owner-occupied segment to recent regulatory measures.	The SNB closely monitors mortgage and real estate market developments and regularly reassesses the need to adjust the countercyclical capital buffer.
Eliminate remaining explicit cantonal government guarantees to their public banks.	No action taken.
Establish a formal framework for setting mortgage lending limits that takes affordability into account and is enforced on a comply-or-explain basis.	From 2020 the maximum loan-to-value ratio for new investment property loans will be lowered to 75% and the loan-to-value ratio on investor mortgages must be reduced to two-thirds over 10 years. New loans with a loan-to-value ratio above 75% will be subject to a risk-weight of 100% to the entire loan.
Consider periodic rotation of the outside auditors responsible for particular financial institutions, and widen the range of authorised external auditors.	No action taken. The financial market supervisor, FINMA, believes that periodic rotation of audit firms would not be beneficial given the limited number of large audit firms. FINMA does exercise its right to mandate independent experts ("audit agents") that are not in charge of the ordinary audit to investigate a special field.

The banking sector's activities have changed in the post-financial crisis regulatory and economic landscape. International banking activities have scaled back, consistent with developments elsewhere (Figure 1.12, Panel A). Five big banks, including two globally systemically important banks, dominate the sector (Panel B). The sector's aggregate capital ratios have increased and are in line with OECD averages (Panels C and D). Regulatory requirements on systemically important banks have strengthened considerably. However, the SNB has highlighted that the two largest banks must still complete the crisis resolution framework, including ensuring sufficient funding in resolution and strengthening the domestic entities on a standalone basis (SNB, 2019).

Figure 1.12. The banking sector is smaller after the crisis and better capitalised



Note: The OECD average is unweighted.

Source: Swiss National Bank; OECD, *Resilience* database.

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Stress tests suggest that most banks can absorb losses in the event of a housing market downturn and higher interest rates (SNB, 2019). Still, simulations of interest rate scenarios by the Swiss National Bank and the Committee for Global Financial Stability reveal that Swiss banks are exposed to a snapback in interest rates, particularly if accompanied by falling house prices (SNB, 2019; BIS, 2018). Residential property investors are also exposed to interest rate risk, with around one-third of new loans to investors to be repriced within 12 months (SNB, 2019). Preserving banking sector capital ratios and maintaining vigilance is crucial given the risks from high corporate debt and low interest rates globally as well as domestic housing market imbalances. However, public monitoring is hampered by the lack of timely data. Greater transparency through more timely data could help detect changing risks. Resolution planning should be extended, for instance to all banks that could become systemic under certain circumstances (IMF, 2019a). Explicit guarantees by cantons to their banks should be removed as previously recommended (OECD, 2017a). Endowing FINMA with greater resources and independence would allow it to better supervise the sector (IMF, 2019a).

The financial sector is evolving to meet new challenges

In addition to the low interest rate environment and stricter post-crisis regulation, three structural changes are underway in the financial sector: (i) fintech developments that are changing means of payment, saving, and investment; (ii) growing attention to climate change and related exposures of the financial and insurance sector; and (iii) the decline of bank secrecy and rise of international co-operation against money laundering.

Embracing innovation in the financial sector

Since 2016 the Swiss authorities have been actively seeking to lower the barriers to entry and adoption of “innovative financial technologies” to support and attract fintech start-ups. In 2018 the economy minister declared that Switzerland – the birthplace of one of the world’s biggest crypto-assets by market capitalisation, Ethereum – wanted to become “the crypto nation” (Financial Times, 2018). A three-pillar approach to fintech regulation was completed in early 2019 (Box 1.3). Switzerland was one of the earliest countries to regulate so-called initial coin offerings (used for capital-raising via crypto-assets). Indeed, of 338 fintech start-ups (under 10 years old) in Switzerland as at September 2019, 119 were engaged in distributed-ledger technology services (Swisscom, 2019).

Fintech can, inter alia, expand access to capital for start-ups and SMEs and lower financial services costs. Distributed-ledger technology has potential to benefit the financial sector, in securities settlement, international payments, and trade finance, as well as other sectors by facilitating due diligence in supply chains or giving individuals control over their own data, for example (Landau and Genais, 2018; OECD, 2018d). However, vigilance around fintech activities is warranted due to unknown risks and consequences as well as potential threats to financial stability, risks of regulatory arbitrage and money laundering, and concerns about consumer and investor protection.

Fintech activities can have implications for financial stability by creating new forms of concentration risks (for example of operation of infrastructure) or adding to procyclicality (for example, through peer-to-peer lending) (FSB, 2019). Decentralised platforms may also pose regulatory and recovery resolution challenges and increase operational and legal risks (*ibid.*). Banks may respond to increased competition in some business segments by collaborating with or buying up competitors or taking greater risks. Potential risks also arise through banks’ participation in trading and holding crypto-assets. Switzerland was an early mover in clarifying regulations applicable to bank holdings of crypto-assets. The authorities should ensure that relevant regulations are applied, in line with the recommendations of the Basel Committee on Banking Supervision, including that banks should inform supervisors of actual and planned exposures in a timely manner (BCBS, 2019).

Box 1.3. Key developments in Swiss regulation of fintech

In 2016 the Federal Department of Finance reviewed whether there were significant barriers to entry for providers of “innovative financial technologies” (fintech firms). Subsequently the government set out a three-pillar fintech model based on:

- Specific regulatory adjustments: e.g. extending the timeframe for holding funds in settlement accounts up to 60 days to facilitate crowdfunding, implemented in 2017.
- An innovation area: a regulatory “sandbox” in banking law was created in 2017 allowing firms to accept public deposits of up to CHF 1 million without a banking licence, while other regulatory requirements (e.g. anti-money laundering/countering the financing of terrorism) do apply. From 2019 these companies may engage in crowd lending for private consumption purposes.
- “FinTech licences”: from 1 January 2019 non-bank firms may apply for a FinTech licence enabling them to access the real-time gross settlement payment system (SIC), subject to certain conditions. They are supervised by FINMA and may accept deposits from the public up to CHF 100 million. These firms may not pay interest or make investments.

In 2018 FINMA issued guidance on initial coin offerings (ICOs), distinguishing between three types of tokens:

- Payment tokens (often called crypto-currencies), for which ICOs must comply with anti-money laundering regulations but these tokens are generally not a security.
- Utility tokens which are intended to provide digital access to an application or service. These tokens are generally not treated as a security unless they function as an investment in economic terms.
- Asset tokens (also known as security tokens) which represent ownership of real physical underlying assets or company, such as earnings streams or an entitlement to dividends or interest payments. For these tokens there are securities law requirements and civil law requirements under the Swiss Code of Obligations (e.g. prospectus requirements apply).

The Swiss Bankers Association has been proactive, issuing guidance for its members in a range of areas such as cloud storage and due diligence for banks opening accounts for blockchain companies.

In 2018 the government published a report analysing the legal framework for blockchain and distributed-ledger technology and adjustments required to enable their development. Planned changes include increasing legal certainty around transfer of rights using digital registers, incorporating these technologies in financial markets law and more explicitly subjecting decentralised trading platforms to anti-money laundering legislation. A public consultation on proposed changes concluded in June 2019.

Source: National authorities; websites of FINMA, Swiss Bankers Association, Swiss National Bank and State Secretariat for International Finance.

In general, risks of regulatory arbitrage are higher while there are no international minimum standards. Examples include differences in regulatory requirements for fintech firms across countries and between banks and fintech firms, in the application of securities laws to some initial coin offerings and in tax treatment. In principle, regulations should be on a “same-activity, same-rules” basis (Schich, 2019). The application of Switzerland’s regulations should be transparent to facilitate review. To better monitor potential risks, FINMA needs more resources and reporting requirements should be increased (IMF, 2019a). A comprehensive review of the regulatory framework for distributed-ledger technology took place in 2018. Because technology evolves quickly, the regulatory framework for fintech activities should be periodically reviewed, as foreseen in France for example, with an evaluation committee including independent experts (OECD, 2019d). The authorities should address regulatory gaps, particularly when these diminish retail investor protection (IMF, 2019a).

Recognising climate-change related risks

With financial assets totalling USD 7 trillion, the financial sector is exposed to a range of climate-change related risks. However, information about financial intermediaries’ exposures to such risks is only slowly becoming available. Physical risks arise through the effects of climate change, such as floods, on asset values. Devaluation risks emerge when related investment cannot be fully recouped as economies decarbonise to reach their climate change commitments (OECD, 2017c). Given its size, investment and financing decisions made by Switzerland’s financial sector can also influence climate change trajectories. To avoid climate change-related risks, major global financial institutions have already announced policies to divest holdings of coal-fired power generation or thermal coal mining or restrict financing (Buckley, 2019).

In 2017, 79 Swiss pension funds and insurers participated in a voluntary climate-alignment test. This revealed that their investment portfolios are estimated to be consistent with a 4-6°C global warming pathway, as is the case elsewhere (Thomä et al., 2017). This is well above the international commitment to keep global warming below 2°C. Large Swiss banks continued providing finance to fossil fuel-related projects worth nearly USD 85 billion over 2016-18 (Rainforest Action Network et al., 2019).

Sustainable finance, defined as taking into account environmental, social and governance issues, is growing and Switzerland is well-positioned in this sector (Wardle et al., 2019). The share of “sustainable investment” is estimated to have reached 31% of pension fund and insurance fund investments in Switzerland (Swiss Sustainable Finance, 2019). However, a gap between EU standards and Switzerland’s will emerge as the European Union implements its Action Plan on Financing Sustainable Growth. The latter includes wide disclosure regulations on risks including potential impacts on returns, a taxonomy of sustainable investment and creation of low-carbon and positive-carbon benchmark indices (PwC/WWF, 2019).

The SNB and FINMA recently joined the Network for Greening the Financial System, which will facilitate knowledge-sharing among peer institutions to better understand and anticipate climate risks for financial stability and macroeconomic scenarios. While the Network’s recommendations are non-binding, acting now on these recommendations would help better prepare the regulatory framework for the future. For instance, climate-related risks should be incorporated into financial stability monitoring and supervision (NGFS, 2019). Building awareness and capacity in-house and with stakeholders would grow understanding of how climate-related factors translate into risks and opportunities.

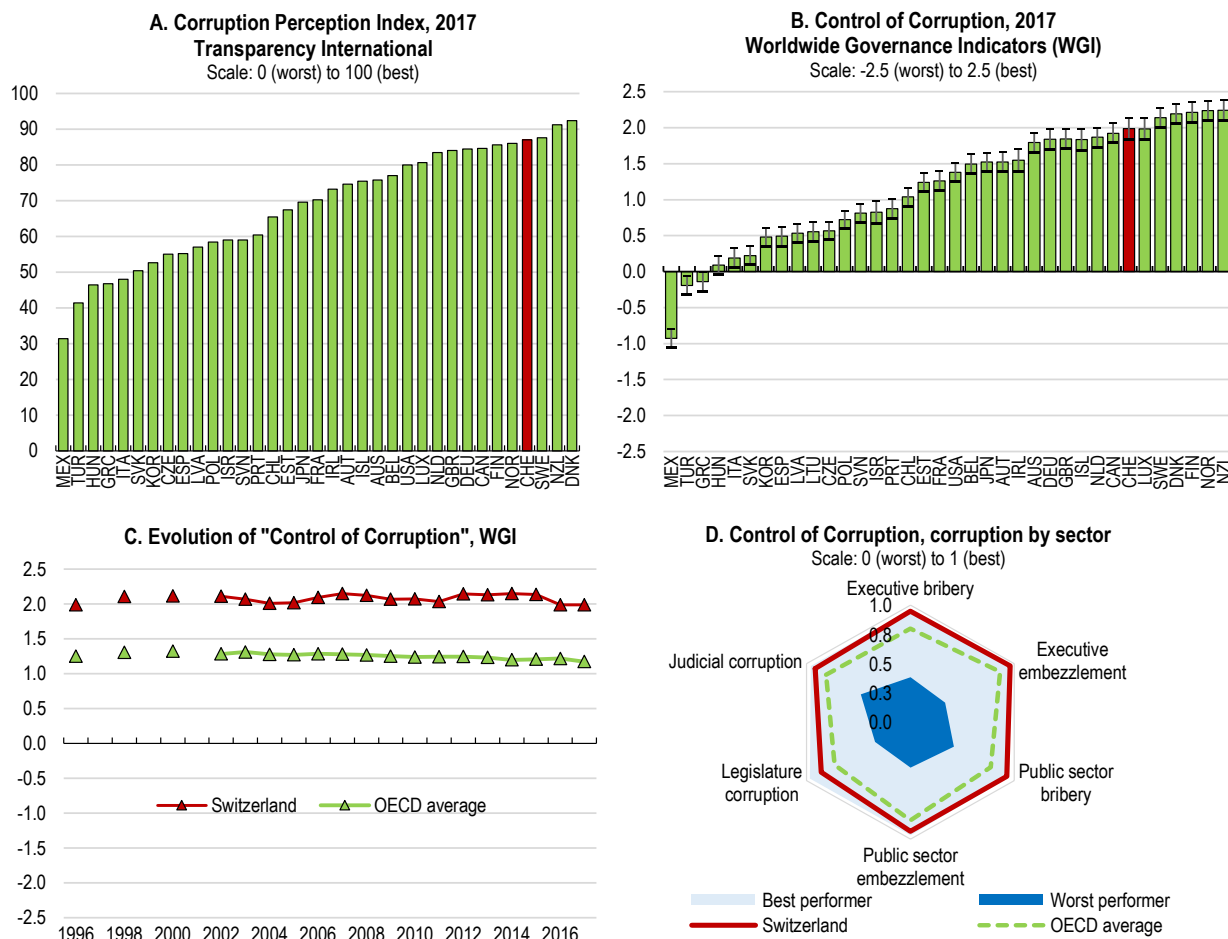
Information on climate-change related risks is crucial for ensuring that investors and policy-holders understand their exposures and that financial markets adequately perform their allocative function. Measures have so far been voluntary. Another climate-alignment test for pension funds and insurers will be held in 2020, and will be internationally coordinated. Nineteen large Swiss companies already support the Task Force on Climate-Related Financial Disclosures and its recommendations to disclose information to better guide forward-looking decisions (TCFD, 2017). However, such measures rely on voluntary participation. Strengthening the disclosure of climate-related risks in line with the Task Force’s

recommendations would contribute to international standard-setting. In many countries, authorities are stepping up climate-related disclosure requirements. For example, since April 2019 the UK supervisor requires financial intermediaries to report to it their climate-related exposures. France’s Law for the Energy Transition and Green Growth requires listed companies to disclose financial risks and institutional investors to report how investment policies align with the national energy and ecological transition.

Fighting money laundering and corruption

Switzerland is perceived as one of the least corrupt OECD countries (Figure 1.13). However, the size and internationalisation of its financial sector increase the risk it is used for criminal activities such as money laundering, including of proceeds of foreign corruption and bribery (OECD, 2018e; FATF, 2016). Around one-quarter of foreign wealth management is managed in Switzerland (OECD, 2018e). Many multinational businesses that have a registered office in Switzerland are also exposed to bribery in international trade. This is particularly the case for trading companies: Switzerland accounts for one-third of global oil trade (OECD, 2018e). Switzerland’s anti-money laundering measures are considered more effective than other countries in many aspects except international co-operation (Figure 1.14). Around half of the 403 ongoing criminal investigations at end-2018 related to money laundering (OAG, 2019) and Switzerland has demonstrated a higher level of enforcement of foreign bribery.

Figure 1.13. Corruption is perceived as very low



Note: Panel B shows the point estimate and the margin of error. Panel D shows sector-based subcomponents of the “Control of Corruption” indicator by the Varieties of Democracy Project.

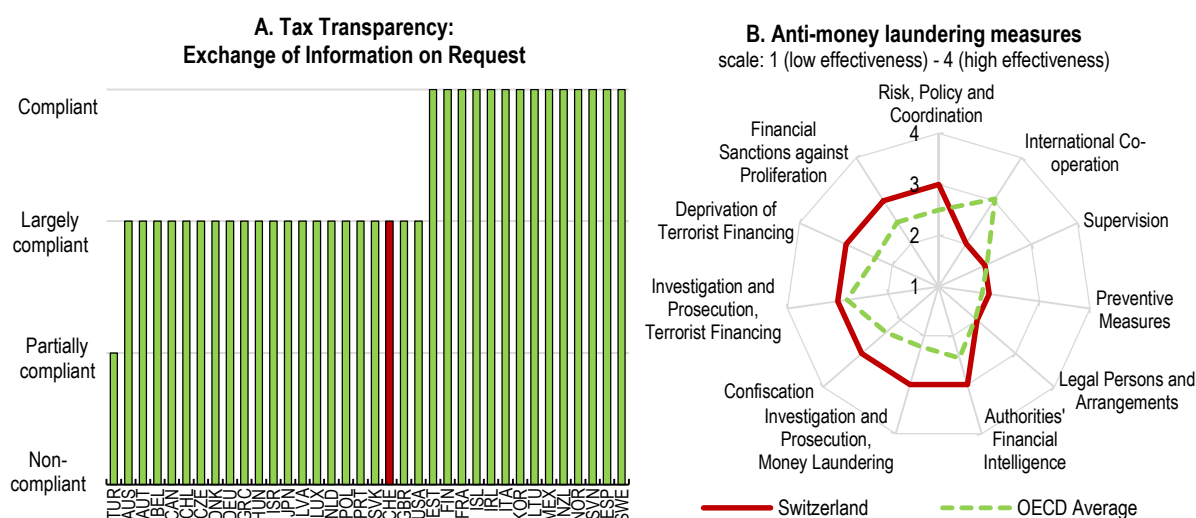
Source: World Bank; Transparency International; Varieties of Democracy Institute; University of Gothenburg, and University of Notre Dame.

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In recent years Switzerland has taken steps to address some of its weaknesses highlighted by the Financial Action Task Force and OECD Working Group on Bribery. From 2020 financial intermediaries must undertake more due diligence on new accounts and cash transactions above CHF 15 000. And more institutions will be supervised directly by the financial markets supervisor. Changes to the anti-money laundering law with Parliament include measures to strengthen due diligence and reporting obligations beyond financial intermediaries and improve international co-operation.

The framework could be reinforced by larger sanctions for non-compliance with anti-money laundering obligations, which were judged inadequate (OECD, 2018e; FATF, 2016). And the Money Laundering Reporting Office itself could be strengthened with more resources (OECD, 2018e). Legal protection should be given to whistleblowers in the private sector to rectify a deficiency repeatedly highlighted by the Working Group on Bribery (OECD, 2018e). Proposed legislation was rejected by Parliament in 2019. Action is also needed to ensure that sanctions imposed in foreign bribery cases are effective, proportionate and dissuasive. Continuing to fight money laundering and foreign bribery will contribute to uphold the reputation of Switzerland as a financial centre.

Figure 1.14. There is still scope to improve the framework to fight economic crimes



Note: Panel A summarises the overall assessment on the exchange of information in practice from [peer reviews](#) by the Global Forum on Transparency and Exchange of Information for Tax Purposes. Peer reviews assess member jurisdictions' ability to ensure the transparency of their legal entities and arrangements and to co-operate with other tax administrations in accordance with the internationally agreed standard. Switzerland's Phase 2 report was published on 26 July 2016. The figure shows first round results; a second round is ongoing. Panel B shows ratings from the FATF [peer reviews](#) of each member to assess levels of implementation of the FATF Recommendations. The ratings reflect the extent to which a country's measures are effective against 11 immediate outcomes.

Source: OECD Secretariat's own calculation based on the materials from the Global Forum on Transparency and Exchange of Information for Tax Purposes, OECD, and Financial Action Task Force (FATF).

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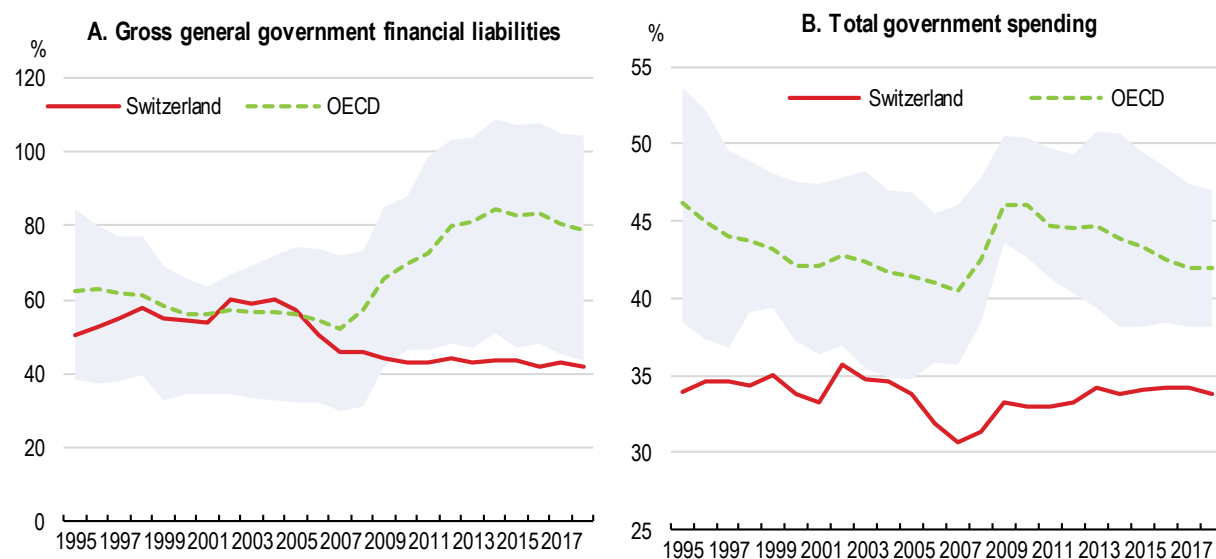
Fiscal policy is sound and debt is low

Switzerland has recorded fiscal surpluses since 2015, lowering gross financial liabilities to around 40% of GDP and lifting net financial assets to over 10% of GDP (Table 1.1, Figure 1.15, Panel A). Spending remains well below other OECD countries (Panel B). Structural and temporary factors contributed to higher-than-expected revenues in recent years: corporate profits boosted dividend income and continued negative interest rates create incentives to defer refund claims. Policy has been broadly neutral but is

expected to become expansionary in 2020 due to slower growth in revenues associated with corporate income tax reform. The fiscal impulse in 2020 goes in the right direction given the extraordinary monetary policy. With low debt levels, the government has plenty of scope to act in the event of a crisis.

Figure 1.15. Government debt and spending are comparatively low

As a percentage of GDP



Note: Data represent general government accounts (i.e. including sub-national government accounts). The shaded area denotes the 25th to 75th percentile range of available data for OECD countries. OECD is an unweighted average of data for available countries. Data for 2018 include OECD estimates.

Source: OECD, *OECD Economic Outlook* database.

StatLink  <https://doi.org/10.1787/888934021281>

The corporate income tax reform will be effective from 1 January 2020 under the Federal Act on Tax Reform and AHV Financing. It aims to meet international commitments by removing preferential tax treatment for foreign companies. The final package comprises several additional elements, including adjustments to fiscal equalisation and supplementary funding for the public first-pillar pension fund. Most cantons have lowered their standard corporate income tax rate to maintain competitiveness, or are planning to do so. Consequently, the maximum total corporate income tax burden is expected to fall to 15% or less in 21 cantons (CDF, 2019). A majority of cantons also plan to introduce tax allowances for R&D expenditure of 120-150% (*ibid*). The package may reduce tax revenue by almost CHF 2 billion in 2020 (0.3% of GDP) (FDF, 2018a). The federal government will also transfer an additional 0.7% of its revenue to the public first-pillar pension fund, which is running deficits. In the near term, the reform will put pressure on the budget. However, it removes a source of policy uncertainty and may encourage investment by domestic firms through a lower user cost of capital and planned R&D incentives. The net revenue effect in the long-term could be positive (FDF, 2018b).

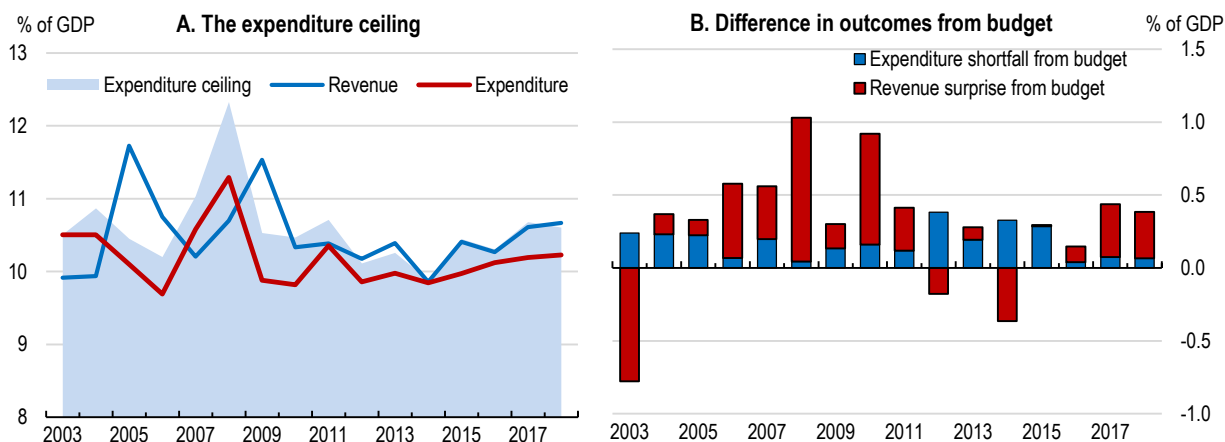
A feature of Switzerland's fiscal policy is the "debt brake" rule, and similar fiscal rules in most cantons. The federal rule sets an expenditure ceiling that takes into account projected revenues and the state of the economic cycle. These rules, introduced in the early 2000s, successfully arrested the upward trend in the national debt ratio, returning the debt-to-GDP ratio to its early-1990s level.

The federal rule's design and implementation tend to skew policy towards being tighter than intended. Firstly, revenues have usually been higher than expected, mainly due to difficulties forecasting withholding tax (Schaltegger and Salvi, 2019). Thus the initial expenditure ceiling was typically too low. Secondly, underspending relative to the budget is the norm (Figure 1.16, Panel A). The budget impact of these two factors was equivalent to around 0.4 percentage points of GDP annually in 2017-18 (Panel B). In addition, by design the cyclical adjustment is small and subject to revision as estimates of the output gap change.

Making greater use of available fiscal space would support the normalisation of monetary policy and improve economic and social outcomes. Measures proposed in this *Survey*, such as subsidies for training, can raise long-term growth and inclusiveness (Fournier and Johansson, 2016). Boosting public investment could help meet the long-term challenges associated with climate change and population ageing. Net public investment, which accounts for depreciation, averaged 0.25% of GDP over 2013-17, compared to 0.5% in the median OECD country. Earlier *Surveys* have emphasised that expanding affordable childcare and access to early childhood education can raise long-run growth by supporting women expanding their working hours (OECD, 2017a, OECD, 2013). It can also raise productivity by narrowing gender gaps and improving human capital. Moreover, spending multipliers are likely to be larger than revenue (Batini et al., 2014).

In early 2019 the government announced measures to give more flexibility in budget implementation, which are welcome. The cyclical factor should be adjusted to allow for the effect of biannual international sporting events (which added ½ per cent to GDP in 2018), as recommended by the IMF (IMF, 2019c). With gross public debt now relatively low and net public debt equivalent to around -12% of GDP, it would be prudent to make the debt brake symmetric and lessen the strain on monetary policy.

Figure 1.16. Federal fiscal policy has been tighter than intended



Note: Total revenue and expenditure are shown in Panel A. Ordinary revenue and expenditure are used in Panel B.

Source: Federal Finance Administration; OECD, *OECD Economic Outlook* database; OECD calculations.

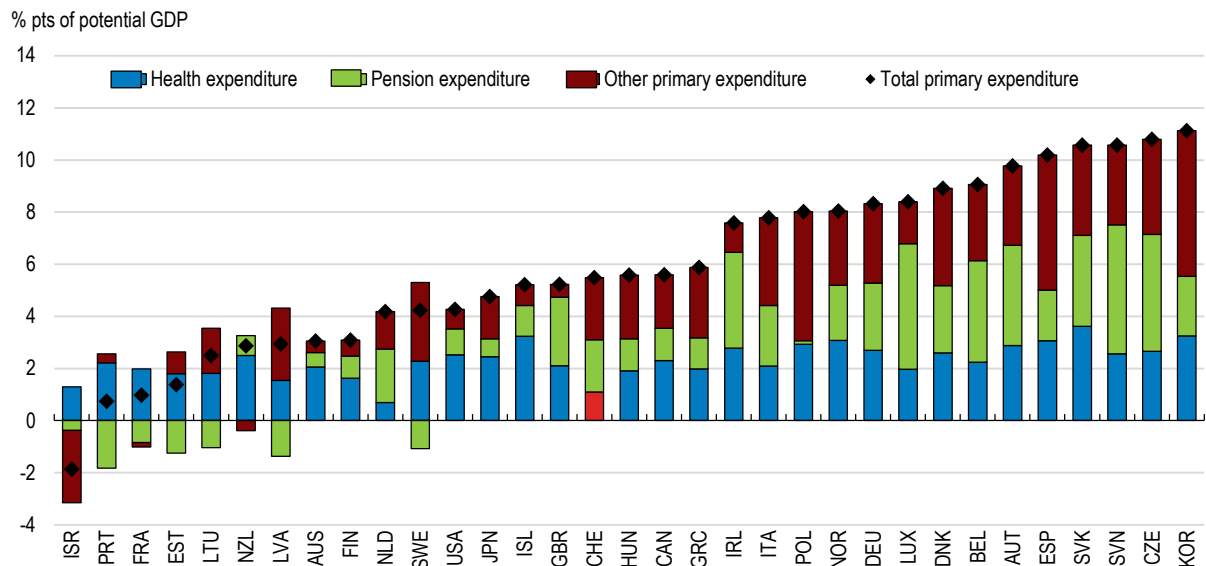
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Preparing for the fiscal impacts of ageing

Public spending on pensions and health care is set to increase in the coming decades. The smaller role of government in providing pensions and financing health and long-term care will contain fiscal pressure in Switzerland relative to many other OECD countries (Figure 1.17). Nonetheless, current trends imply these spending items would expand by 3% of GDP by 2060. The main driver is the increase in the size of the older population. Assuming real spending per capita on non-ageing-related spending is maintained, the total increase in spending is 5% of GDP. Cantons and municipalities, which are primarily responsible for health and long-term care delivery, will bear around half of the burden of increased ageing-related spending (Brändle, Colombier and Philipona, 2016). However, the different pace and extent of population ageing means that the challenge varies considerably across cantons (Figure 1.18). The federal fiscal equalisation formula adjusts for socio-demographic cost drivers including an older population. Planned changes to responsibilities will need to be reflected in these arrangements. Likewise, fiscal equalisation within cantons should adequately reflect the changing burden of tasks.

Figure 1.17. Rising public expenditure will entail fiscal challenges

Change in expenditure from 2019 to 2060



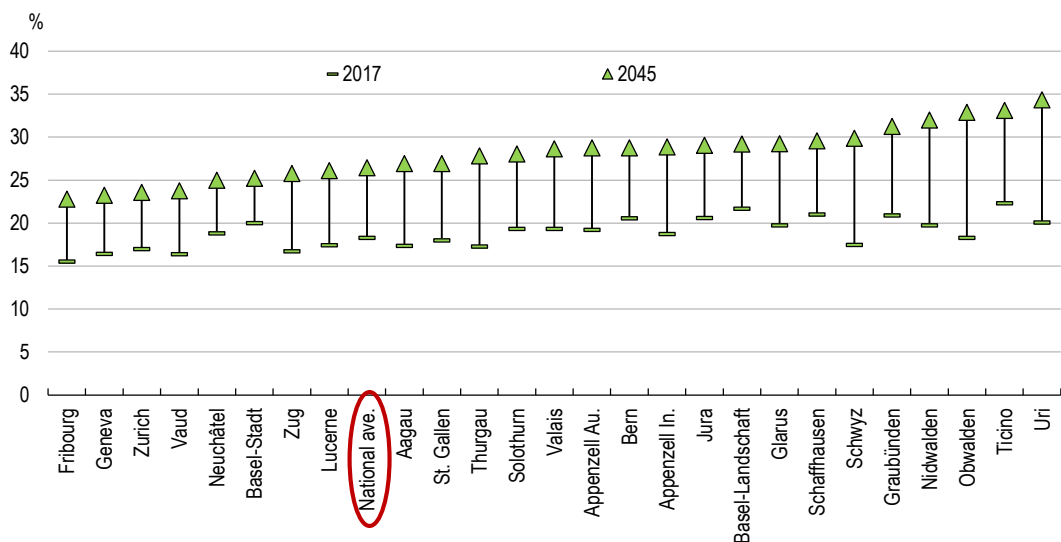
Note: These scenarios are illustrative only and differ from national projections. Pension expenditure includes survivors' pensions and disability pensions but all other benefits are included in "Other primary expenditure", which is all non-interest spending except health and pension spending.

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

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Figure 1.18. 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 only available to 2045. The national projection for the total population is slightly higher (483 000 people in 2045) than the UN projections in the OECD long-term scenarios.

Source: Federal Statistical Office.

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Resolute action to contain ageing-related expenditure will reduce any crowding out of other expenditure, including on younger generations, and limit the need for higher taxes. Long-term scenarios based on Guillemette and Turner (2018) show that the ratio of revenue to GDP would need to rise by around 4 percentage points by 2060 to hold the debt-to-GDP ratio steady (Figure 1.19). Past *Surveys* have highlighted substantial potential for making public spending more efficient and enhance growth (Table 1.4). Containing health care spending is particularly important, as discussed below. The reforms proposed in this *Survey* to raise the effective retirement age would help accommodate ageing-related fiscal pressure by lifting GDP and revenues. Simulations based on the OECD Long-term Model illustrate the effect of a package that (i) raises the statutory retirement age to 67 years over the next 15 years and then increased it with life expectancy; and (ii) lifts spending on active labour market policies and implements labour market reforms to raise the retirement age by six months. Such reforms would provide considerable relief from fiscal pressures during coming decades by raising employment and GDP (Figure 1.19; Table 1.5).

Table 1.4. Past recommendations on public spending efficiency and taxation

Recommendations in previous <i>Surveys</i>	Actions taken since November 2017
Reduce agricultural subsidies and pursue efficiency gains in public spending to free up funds for measures that enhance growth and inclusiveness.	In December 2017 a Federal Decree was adopted, abolishing export contributions as well as accompanying measures to assist the food production sector.
Evaluate solutions to reduce the drop-out rate in the university system.	No specific action taken. Universities have begun collecting data.
Switch the system for setting generic drug prices to reimbursing a pre-determined fixed amount.	A reference price system is planned.
Encourage systematic benchmarking of hospital costs. If rates keep rising despite the recent reforms, consider new legislation to control them using cost benchmarks.	No specific action taken. Cost containment measures have been taken to curb health care spending growth.
Avoid persistent budget underspending through better co-ordinating procedures at federal and sub-national levels.	Additional flexibility is being introduced to budgeting procedures.
Widen the VAT base by removing exemptions. Unify VAT rates. Over the medium term raise VAT rates. Explore the technical feasibility of applying a VAT to banking services. If such a VAT is not introduced, consider an additional tax on financial institutions' profits and remuneration.	No specific action taken. From 1 January 2019 VAT on mail order items is more strict.
Replace progressive cantonal corporate taxes with proportional taxes and abolish capital taxes. Remove taxes on the issuance of equity securities.	Some cantons plan to replace progressive tax with proportional taxes and to reduce capital taxes.
Abolish the lump-sum tax regime for rich individuals who are not economically active in Switzerland. Subject all residents to standard personal income taxation.	No specific action taken. Taxation of new beneficiaries was revised in 2016.
Shift income taxation to individual rather than household incomes, or implement equivalent measures.	No specific action taken. The Federal Council plans to allow couples to pay the lesser amount of tax depending on whether they were taxed as a couple or two individuals.

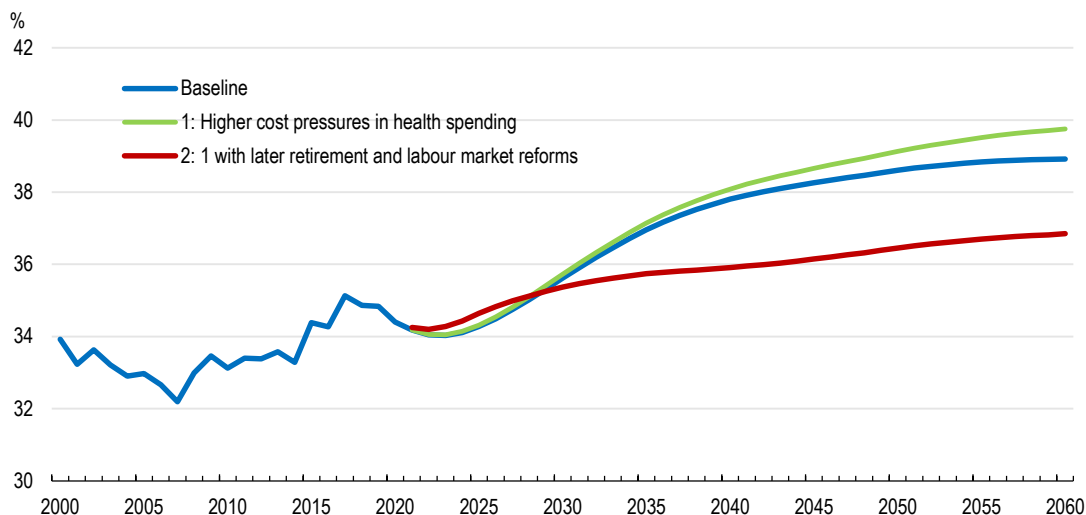
There is ample scope to lower health-related spending without sacrificing quality (OECD, 2015a). Savings can be realised by improving cost effectiveness of treatments, reducing fragmentation and duplication that results from decentralisation, and through greater emphasis on prevention. For example, hospital and pharmaceutical spending can be reduced (Table 1.4; OECD/WHO, 2011). A lack of gate-keeping and high specialist fees raise spending on ambulatory care. Cost savings would also limit the sizeable burden on households and associated recourse to social assistance and mitigate the fiscal risk that citizens demand the government shoulders more of the burden.

The government has taken steps to reduce the cost of hospitals and pharmaceuticals. Two further cost containment packages are planned. The first one includes measures to reduce hospital costs, improve the system for setting outpatient fees and create a reference price system for reimbursing generic drugs. These are in line with previous OECD recommendations. A second package is planned for end 2019. Electronic patient dossiers are being rolled out and promise to enhance co-ordination, reduce duplication and increase patient welfare. However, participation is voluntary except for hospitals and nursing homes, which is likely to limit take-up (De Pietro and Francetic, 2018). Financial incentives should be used to encourage

health care providers to participate, alongside penalties to ensure data quality, as in other countries (Oderkirk, 2017). If this is ineffective, electronic dossiers may need to be mandatory. These measures should be accompanied by steps to build trust in the system, notably ensuring data security in light of a recent data breach.

Figure 1.19. Reforms can offset fiscal pressures

General government revenue required to hold the debt-to-GDP ratio steady, per cent of GDP



Note: These scenarios are illustrative only and differ from national projections. The baseline includes higher spending, as shown in Figure 1.17. In scenario 1 health spending rises by a further 0.7% of GDP. Scenario 2 includes two additional elements: (i) the retirement age gradually rises to 67 in 2034, and by half of the expected gain in life expectancy thereafter (to reach 68 in 2058); and (ii) labour market reforms including a two-thirds increase in spending on active labour market policies and an increase in the retirement age of six months to proxy for labour market policies discussed in the text.

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

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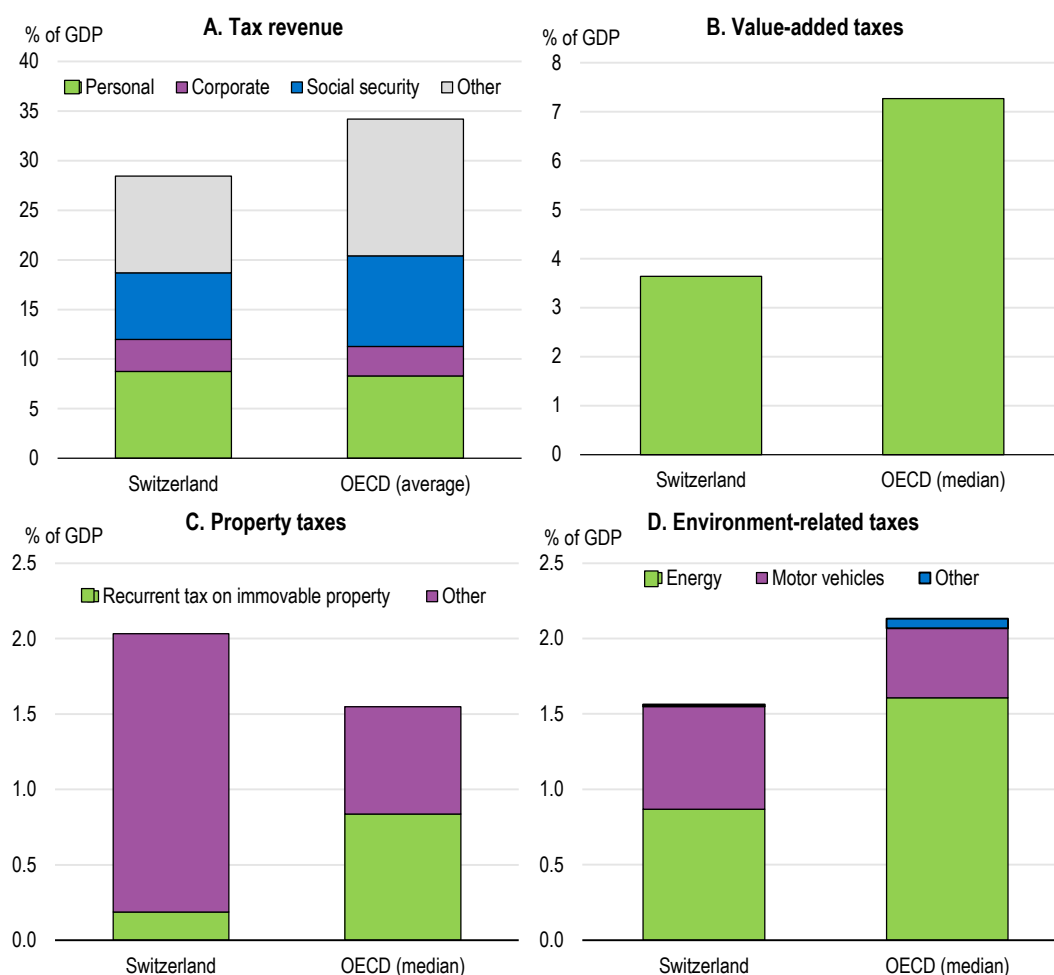
Table 1.5. Key variables underpinning the long-term scenario

		2018	2030	2060
Baseline				
GDP growth	%	2.8	1.2	1.4
Primary fiscal balance	% of GDP	1.5	-0.2	0.1
Inflation	%	0.3	1.0	1.0
Short-term interest rate	%	-0.7	1.9	2.3
Trend productivity growth	%	0.5	1.2	1.4
Trend employment-to-population ratio	%	78.4	78.4	79.3
Reform scenario				
GDP growth	%	2.8	1.7	1.5
Primary fiscal balance	% of GDP	1.5	0.1	0.1
Inflation	%	0.3	1.0	1.0
Short-term interest rate	%	-0.7	2.1	2.4
Trend productivity growth	%	0.5	1.1	1.5
Trend employment-to-population ratio	%	78.4	81.4	87.2

Source: OECD, *OECD Economic Outlook database*; simulations based on the OECD Economics Department Long-term Model.

Shifting the tax mix away from personal income taxation would boost growth and reduce the exposure of government revenues to ageing. Switzerland relies more on direct taxation and social security contributions than most other OECD countries, at two-thirds of revenues, even though it is more distortionary and inimical to growth than indirect taxation, as underlined in the 2011 *Economic Survey* (OECD, 2012a; Akgun, Cournède and Fournier, 2017) (Figure 1.20). Against this backdrop, the government will raise the value-added tax (VAT) rate by 0.7 percentage points to fund first pillar pension spending. A planned reform to the “marriage penalty” in 2021, to reduce work disincentives facing second-earners due to family taxation, is welcome. The reform should be financed via indirect taxation given the long-term benefits of additional spending on childcare and training highlighted elsewhere, as well as the spending pressures in coming decades.

Figure 1.20. Revenues are comparatively low and tilted towards direct taxation



Note: Data in Panels A to C are for 2017; data in Panel D are for 2016. In Panel C, other property taxes for the OECD median are calculated as a residual.

Source: OECD, *Revenue Statistics* database, *Environmental Policy* database.

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To finance lower personal income taxes, particularly on lower income earners, VAT exemptions and reduced rates should be wound back and its rate raised even further. Sub-national governments could make more use of recurrent taxation of immovable property. There is also scope to raise more revenue from environmentally-related taxation, which could reinforce incentives to avoid harmful activities (OECD, 2017b). For instance, Swiss new cars have the highest CO₂ emissions in all EU-European Free Trade Association countries and well-designed taxes could encourage a shift towards low emission cars, as discussed below. Broadening the CO₂ tax base, accompanied by measures to upgrade energy efficiency of buildings, is key for emission reductions.

Simulations show that a reform that hiked the VAT rate by 0.6 percentage points, raised recurrent taxation on immovable property and increased environmentally-related taxation to finance reduced personal income taxation would boost growth (Box 1.4). Such a reform package would need to account for the distributional impact, either by focussing the income tax cut on low-income earners, as suggested, or providing offsetting social security contribution credits. Evidence from other OECD countries shows that reduced VAT rates often disproportionately benefit high-income households (OECD/KIPF, 2014). A general rate increase would impact lower-income households more. 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).

Box 1.4. Quantifying the impact of selected policy recommendations

Table 1.6 presents estimates of the fiscal effects of some of the recommended reforms. The quantification is merely indicative and does not allow for behavioural responses. Table 1.7 quantifies the impact on growth of some of the reforms recommended in this *Survey* (quantification is not feasible for all of them). The impacts rely on estimates from cross-country panel regressions. Within the tax reform, the contribution from cutting the tax wedge is slightly larger than implied by earlier OECD work, such as Égert and Gal (2017). However, the estimates do not take into account potential growth benefits via greater decentralisation of revenue collection, which may be larger in more open economies (Dougherty and Akgun, 2019). The overall directional impact of the reform is in line with earlier work such as Johansson, et al. (2008).

Table 1.6. Illustrative fiscal impact of recommended reforms

Fiscal savings (+) and costs (-) after 10 years

	% of annual GDP
Expenditures	
Increase spending on active labour market programmes	0.5
Increase long-term care spending to cover part of uninsured care and support	0.4
Cost containment in health spending	-0.3
Effect of later retirement through higher retirement age and labour market reforms	-0.9
Total - expenditures	-0.3
Tax reform	
Reduce personal income taxation on low-income earners	-0.6
Increase value-added tax	0.2
Increase recurrent taxation of immovable property	0.2
Increase environmentally related taxation	0.2
Total - tax reform	0.0

Note: The increase in active labour market programme spending is by two-thirds of the current level to the average of the top five OECD countries. Long-term care is based on the estimated cost in 2011 and assumes some means testing (Federal Council, 2016). Health care cost containment assumes that containment measures slow growth in real costs per capita to 0.8% (below the 1.5% structural rate achieved in high-spending countries during 2010-13 in Lorenzoni et al. (2018)). Estimates do not include other substantial gains, notably increased tax revenue from higher employment. Tax reform calculations are based on Akgun, Courmède and Fournier (2017), "The effects of the tax mix on inequality and growth", *OECD Economics Department Working Papers*, No. 1447.

Table 1.7. Illustrative impact on GDP per capita from structural reforms

Difference in GDP per capita level from the baseline 10 years after the reforms, %

Reform	Description	%
Reforms to contain the cost of ageing		
Government proposal	Retirement age for women raised to 65 years (from 64) by 2026	0.6
More ambitious reform	"Government proposal" then retirement age raised gradually to 67 by 2034, and one month per year to 69 in 2058 (half of the increase in life expectancy)	1.5
Reform package	"More ambitious reform" and spending on active labour market policies per unemployed person increases to the average of the five top countries and other reforms increase the retirement age by six months.	3.0
Growth-enhancing tax reforms		
Revenue-neutral tax reform	Personal income tax revenue falls by 0.6% of GDP (the tax wedge on low-income earners declines by 1.7 percentage points, which is the typical tax wedge change across OECD countries). VAT revenue increases by 0.2% of GDP (0.6 percentage point VAT rate increase); environmental taxes and recurrent taxes on immovable property also increase by 0.2% of GDP.	1.2

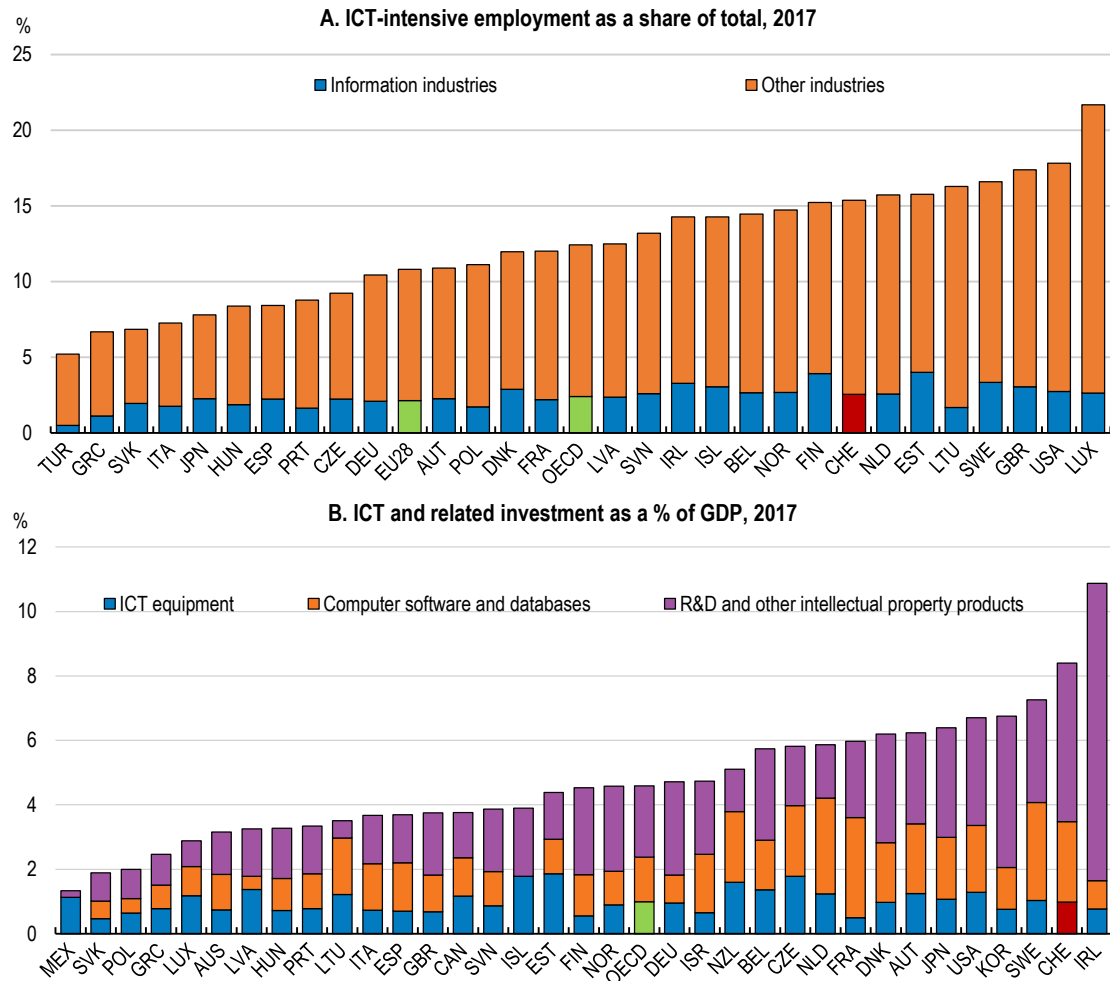
Source: Simulations based on the OECD Economics Department Long-term Model and the framework in Akgun, Cournède and Fournier (2017), "The effects of the tax mix on inequality and growth", *OECD Economics Department Working Papers*, No. 1447.

Switzerland's system of direct democracy means that implementing large-scale reforms can be difficult but helps ensure that reforms are accepted by a broad spectrum of society. No major pension reform has passed a referendum in two decades. In 2017 the median age of a Swiss adult (citizen) was already 51, which will influence reform prospects. Older people have been found to prefer spending on health and social security to education (Cattaneo and Wolter, 2009). A small fiscal council, as proposed in the previous *Survey*, or similar independent institution could produce independent economic scenarios to help assess the merits of reforms. More participative public debates could also develop understanding and reinforce the benefits of direct democracy. Because successful reforms tend to be incremental, they must also begin sooner.

Technological transformation is underway

Technological change and digitalisation are transforming lives, economies and government. Adopting new technologies can raise productivity – the main source of future income growth given population ageing and a challenge examined in the 2017 *Economic Survey* in light of Switzerland's lacklustre productivity growth (OECD, 2017a). New technologies can also enhance government services and environmental outcomes. The digital transformation is already well under way in Switzerland, as illustrated by trends in employment and investment (Figure 1.21). Highly digital-intensive sectors accounted for 36% of employment growth over 2006-16 (OECD, 2019e). The government's "Digital Switzerland" strategy recognises Switzerland's strong starting point for the digital transformation and aims to provide a framework for government policy as well as action by other actors (OFCOM, 2018). It is complemented by an action plan and set of indicators to track progress.

Figure 1.21. Employment and investment are relatively digitally-intensive



Note: ICT-intensive employment comprises ICT specialists and ICT task-intensive occupations, which have a high propensity to include ICT tasks at work, as defined in R. Grundke, P. Horvát and M. Squicciarini (forthcoming), "ICT intensive occupations: A task-based analysis", *OECD Science, Technology and Innovation Working Papers*. Outside of information industries, these include occupations such as business services managers, sales managers, physical science professionals, architects, and finance professionals.

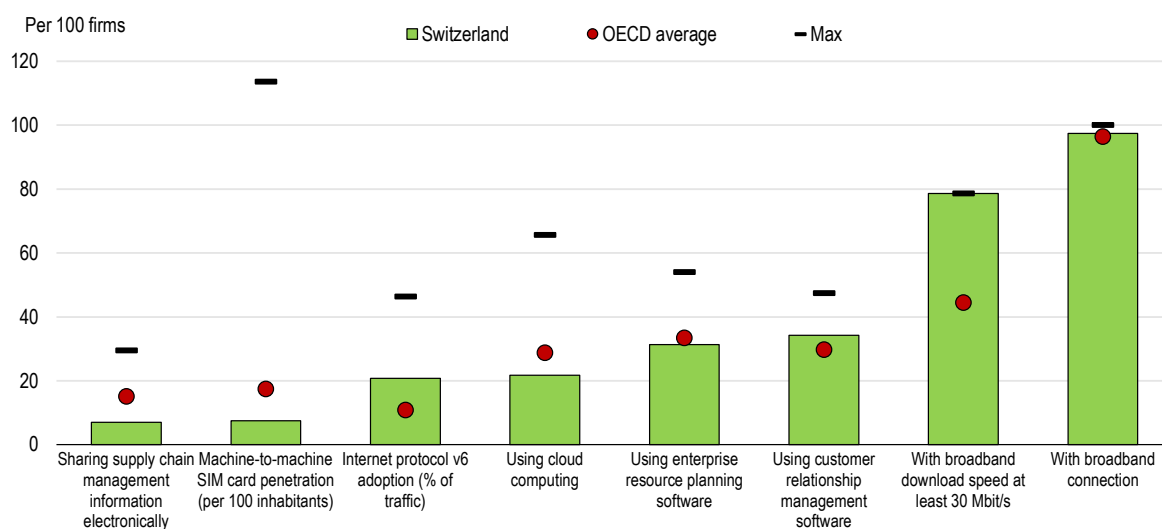
Source: OECD (2019), *Measuring the Digital Transformation*.

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Diffusing new digital technologies in the business sector

Switzerland's almost-universal access to high-speed internet (30 Mbps) across the country supports digitalisation (OECD, 2019e). Switzerland had the highest number of fixed broadband subscribers per inhabitant in 2017. 5G technology is currently being rolled out. The penetration of fibre – which is also likely to be crucial for next-generation technologies – was only around the OECD average in 2017 (OECD, 2019a). In 2018 fibre to the home at speeds of 10 Gbps became available. Despite the potential for being a leader in digital technology adoption, Swiss firms' take-up of some digital tools has been only around average (Figure 1.22). Take-up by Swiss large firms is closer to those in the leaders in some technologies. Closer analysis reveals large gaps in adoption of these technologies across sectors vis-à-vis leading countries (Table 1.8).

Figure 1.22. Switzerland leads in infrastructure but use of some technologies is average



Note: Data are for 2017. Data for Switzerland are generally for firms with 5 employees (rather than 10).

Source: OECD, *ICT Access and Usage by Business* database; OECD (2019), *Measuring the Digital Transformation*.

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Table 1.8. Take-up of some enabling technologies is lagging the leaders across sectors

Per cent of firms, 2017

	Enterprise resource planning software		Customer relationship management software		Supply chain management software		Cloud computing	
	CHE	Gap with high performers	CHE	Gap with high performers	CHE	Gap with high performers	CHE	Gap with high performers
Real estate activities	6.9	-39.3	3.5	-47.3	-	-	18.2	-33.0
Accom. & food services	2.7	-10.7	26.2	4.6	0.6	-10.2	15.0	-13.6
Admin. & support services	6.9	-22.6	16.9	-24.1	1.7	-12.7	25.2	-23.8
Construction	18.4	-7.5	18.3	-7.5	3.1	-13.3	22.5	-20.4
Retail trade	28.1	-5.7	27.6	-7.2	3.7	-30.0	9.8	-29.3
Professional, scientific & technical activities	25.0	-12.3	24.7	-27.5	0.4	-15.1	27.1	-35.5
Transportation & storage	21.3	-7.4	25.8	-0.8	6.3	-19.3	25.3	-10.7
Manufacturing	54.2	-4.9	38.0	-6.6	11.3	-11.7	21.5	-23.0
Wholesale trade	65.4	-2.9	56.2	-4.6	18.8	-19.0	21.7	-19.9
Information & communication	57.6	3.0	76.0	4.6	34.8	7.5	56.4	-17.8

Note: The gap is the distance in percentage points between Switzerland and the average of Denmark, Finland, Germany and the Netherlands. Sectors are ordered by the average use across all technologies in Switzerland. Data are for firms with 5 employees or more for Switzerland and 10 of more for other countries.

Source: OECD, *ICT Access and Usage by Business* database.

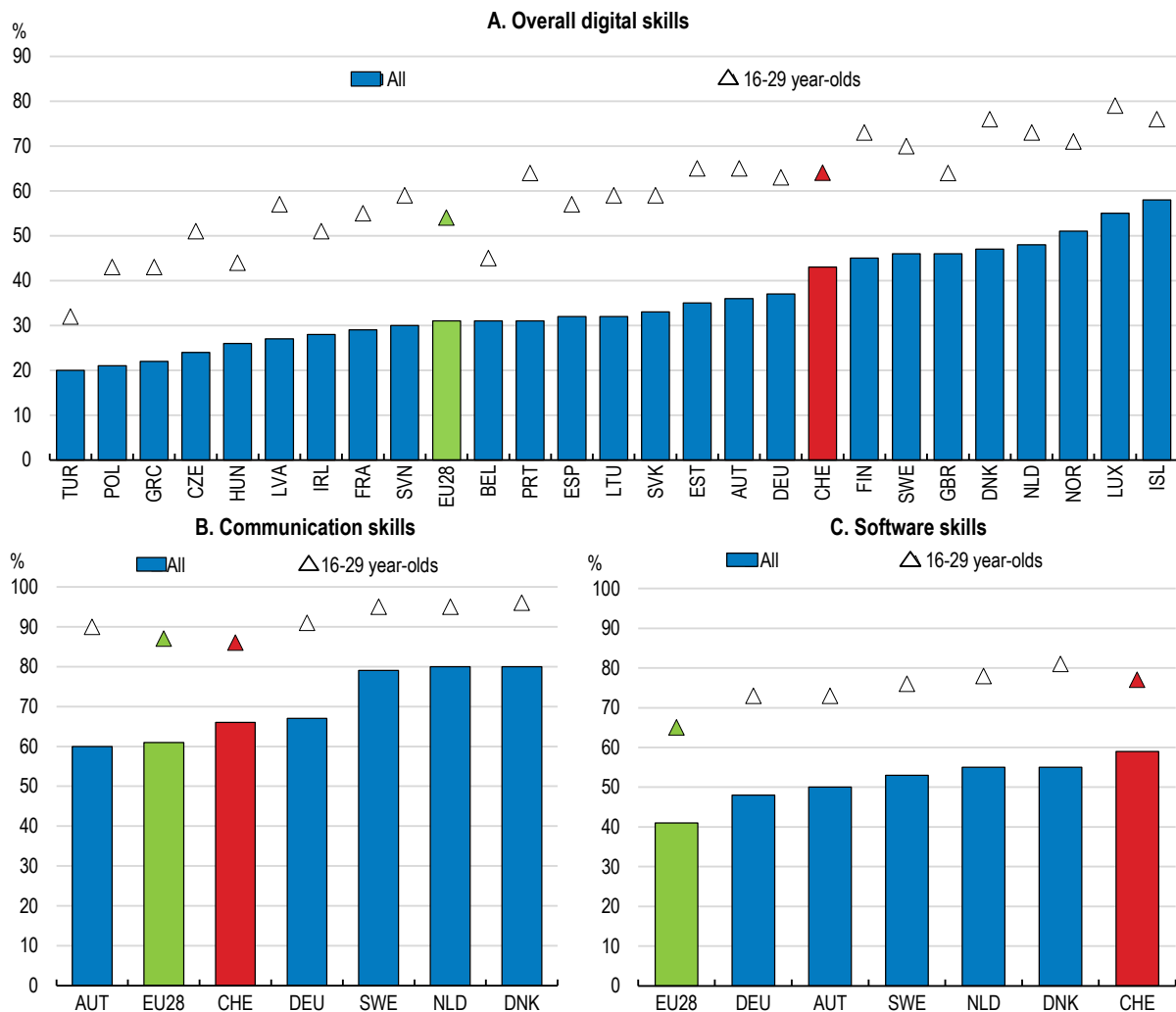
The gaps in adoption of digital technologies within Switzerland parallel the productivity paradox highlighted in the 2017 *Survey*. That is, while Switzerland famously hosts highly productive firms and world leaders in R&D and innovation, the productivity gap between top performers and other firms is widening. The share of firms undertaking R&D and innovation activities has narrowed over time, with those firms investing more (Arvanitis et al., 2017). Firm-level evidence from Switzerland also suggests that adoption of digital

technologies is associated with innovation (Arvanitis, Loukis and Diamantopoulou, 2016). There is now substantial evidence showing that adopting digital technologies improves firm performance (Goldfarb and Tucker, 2019; Sorbe et al., 2019). Their diffusion across the spectrum of firms can narrow the productivity gap, raising aggregate productivity.

Harnessing the benefits of new digital technologies depends on the skills of managers and workers, as is the case for innovations more generally (Andrews, Nicoletti and Timiliotis, 2018; OECD, 2015b). One reason is that capturing the full benefits of technology adoption requires changing workplace practices. Skill shortages can undermine the gains from adoption, particularly at less productive firms, widening their gap with more productive firms over time (Gal et al., 2019; Sorbe et al., 2019). Switzerland's skill base is high, but vacancy rates in ICT-related sectors have returned to pre-crisis levels. A smaller share of Swiss adults – and young people – possess advanced IT-related skills than in European leaders (Figure 1.23). Restrictions on movement of people also contribute to skills shortages, as indicated by Switzerland's comparatively high barriers to trade in computer services in the OECD Services Trade Restrictiveness Index.

Figure 1.23. Swiss adults' digital skills lag the top performers

Share of the population with more than basic skills, 2017



Source: Eurostat, *Digital Skills* database.

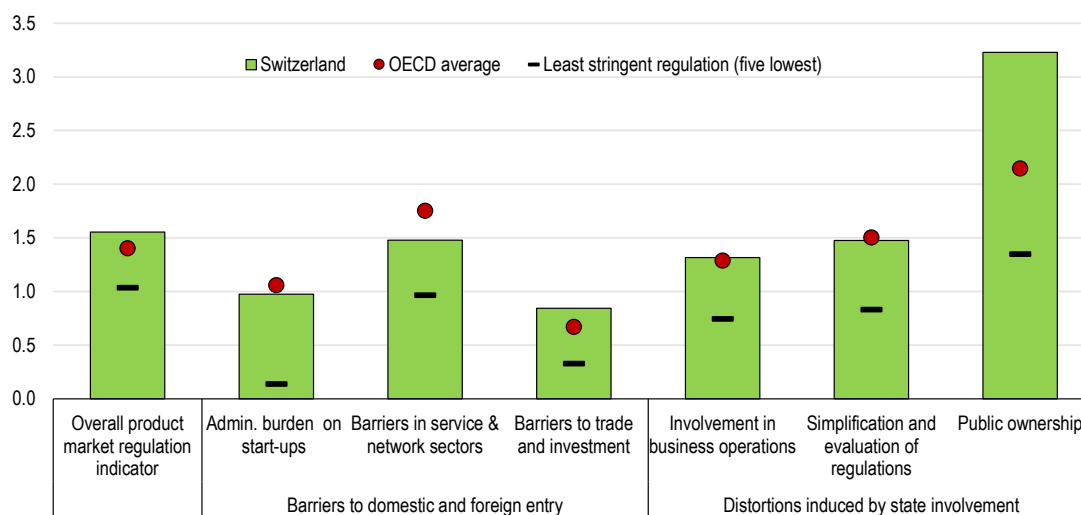
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Easing immigration requirements from non-EU countries, as called for by business groups and in the previous *Survey*, would alleviate current shortages (digitalswitzerland, 2018, SECO, 2018b; OECD, 2017a). Raising the number of graduates from scientific and technical fields, particularly women who are in short supply, would help address shortages in the medium term. Continuing education in IT-related skills should be promoted through social partners and employers. Online courses, which are used less than elsewhere, can ramp up skills at relatively low cost (FSO, 2018b; OECD, 2019f).

Promoting a dynamic business environment can spur the adoption of digital technologies (Sorbe et al., 2019; Andrews, Nicoletti and Timiliotis, 2018). The 2017 *Survey* recommended lowering barriers to firm entry and increasing competitive pressures to raise productivity. The authorities have proposed reducing red tape associated with tariffs and with registering a business; these plans should be implemented (Table 1.9). There is still scope to make many regulatory settings more conducive to competition (Figure 1.24). The administrative burden on start-ups should be lowered by reducing the financial costs of starting a business and expanding the one-stop shop (*EasyGov.swiss*). “Silence is consent” licensing rules, whereby licenses are automatically issued if the competent authority has not acted in a given timeframe could ease procedures, as in 13 other OECD countries.

Figure 1.24. There is scope to ease entry and strengthen competition

Product market regulation indicators, from 0 (best practice) to 6 (most stringent), 2018



Source: OECD, *Product Market Regulation Indicators* database.

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Strengthening competitive forces would also increase incentives to adopt productivity-enhancing technologies. Competition in the domestic market is still hampered by cantonal borders (ComCo, 2019, 2017). For instance, cantons do not always automatically allow professionals licensed in other cantons to practice. Reinforcing access to markets nationwide is crucial to generate economies of scale and competitive pressures in a small country. At the same time the merger control framework remains more permissive than in EU countries and modernisation plans are stalled. Digitalisation adds to the challenges for competition policy and calls for greater vigilance (OECD, 2019g). Strengthening the competition authority and modernising merger controls could help tackle these barriers. Barriers to trade in services – indicated by the OECD Services Trade Restrictiveness Index – are higher than in most other OECD countries and should be lowered to spur competitive pressures, as well as knowledge spillovers and innovation, as recommended in the 2017 *Economic Survey*. Barriers in network sectors include restrictions

on the number of competing firms allowed to operate (Table 1.9). Lowering barriers to agricultural trade would facilitate free-trade agreements, thereby improving competition and benefiting consumers (OECD, 2017a).

Table 1.9. Past recommendations on productivity

Recommendations in previous <i>Surveys</i>	Action taken since November 2017
Lower restrictions on trade in both goods and services, notably in highly protected agricultural products.	From December 2018 to March 2019 the Federal Council ran a public consultation on the abolition of all import tariffs on industrial goods. The final proposal to Parliament is being prepared. At end 2018 ethanol imports were liberalised and the tariff eliminated. In December 2017 a Federal Decree was adopted to comply with the 2015 commitment to remove export subsidies, effective from 1 January 2019. It includes a complete revision of the "chocolate law", abolishing export contributions as well as accompanying measures to assist the food production sector.
Accelerate the pace of agricultural sector reform, including moving entirely to direct payments to farmers.	No specific action taken. From November 2018 to March 2019 the Federal Council ran a public consultation on the Swiss Agricultural Policy from 2022 onwards. The final proposal is being prepared. Aims include improving market, entrepreneurial and environmental conditions.
Complete the negotiations for free-trade agreements that are underway with Asian nations and MERCOSUR.	In 2018 free trade agreements were concluded with Ecuador and Indonesia. Negotiations with MERCOSUR for a free trade agreement were concluded in substance in August 2019. Negotiations with India, Vietnam and Malaysia are in underway.
Finalise the virtual one-stop shop for administrative affairs.	In November 2017 the one-stop shop (<i>EasyGov.swiss</i>) was launched. Services now include registering a company with various authorities. Companies can amend their Commercial Register data. The most-requested e-government services are planned to be available by end 2019.
Establish cantonal physical contact points to improve delivery of advisory services and public financing programmes.	Local economic development agencies function as contact points. The SME portal contains a list of available public aid.
Remove representatives of economic associations from the board of the competition authority.	No specific action taken.
Increase private ownership and remove barriers to entry, including restrictions on the number of competitors, in energy, telecommunications and transport.	Energy: In 2018 the Federal Council started a public consultation on a revised electricity power supply act that aims to fully liberalise the electricity market. Telecommunications: Part of the planned revision of the Telecommunications Act was rejected. It would have required that market dominating suppliers grant access to the fibre and mobile network. Rail transport: In 2018 the monopoly for long-distance services was opened up.

Competition could also be strengthened by reducing distortions induced by state involvement in the economy, particularly those associated with public ownership, which appear to be the highest in the OECD (Figure 1.24). The scope of state-owned enterprises is broad and in some sectors they benefit from more favourable financing conditions or treatment than private firms. These distortions should be reduced by privatisation or, at a minimum, other measures to ensure competitive neutrality (OECD, 2017a; 2012b). Commercial activities operated by a public entity should be incorporated to avoid conflicts of interest, abuse of dominant position and other behaviours harming competition.

Barriers to competition also persist in the communications sector itself, which has the highest barriers in the OECD according to the 2018 OECD Product Market Regulation indicators. This partly reflects the dominant position of the majority-government-owned incumbent. One consequence in the past has been overcharging, as highlighted by the price watchdog (*Surveillance des Prix*, 2016). A proposed reform to guarantee access to network infrastructure for third parties irrespective of technology was rejected by Parliament (Table 1.9). The scope of the telecommunications regulator is narrower than in other OECD countries such as Sweden, Finland and the United Kingdom (Casullo, Durand and Cavassini, 2019). It can respond to complaints but cannot initiate its own action. Given the importance of communications infrastructure to the digital transformation, the powers of the sector regulator should be reviewed and expanded so that it can more nimbly respond to changes in markets and competition.

A lack of trust may also be weighing on take-up of digital technologies. For instance payment security and privacy concerns appear to be more important barriers to online purchasing than in most other OECD countries (OECD, 2019a). Policy makers can cultivate trust through stronger consumer protection, encouraging better management of digital security risks by firms and individuals and creating national privacy strategies (OECD, 2019a). Draft changes to the data protection regulation are currently being discussed in Parliament; ensuring close alignment with EU laws could improve the probability that the European Union recognises the new law's adequacy and avoids additional regulatory burden for firms. The *Digital Switzerland Action Plan* also includes measures that will foster trust in the overall digital transformation such as protecting key infrastructure from cyber-attack. To further promote dialogue and confidence, the government could follow the example of the Danish government, which appointed an expert group to provide recommendations on ethical and responsible use of data by businesses and announced the intention to set up a permanent Data Ethics Council (OECD, 2019h).

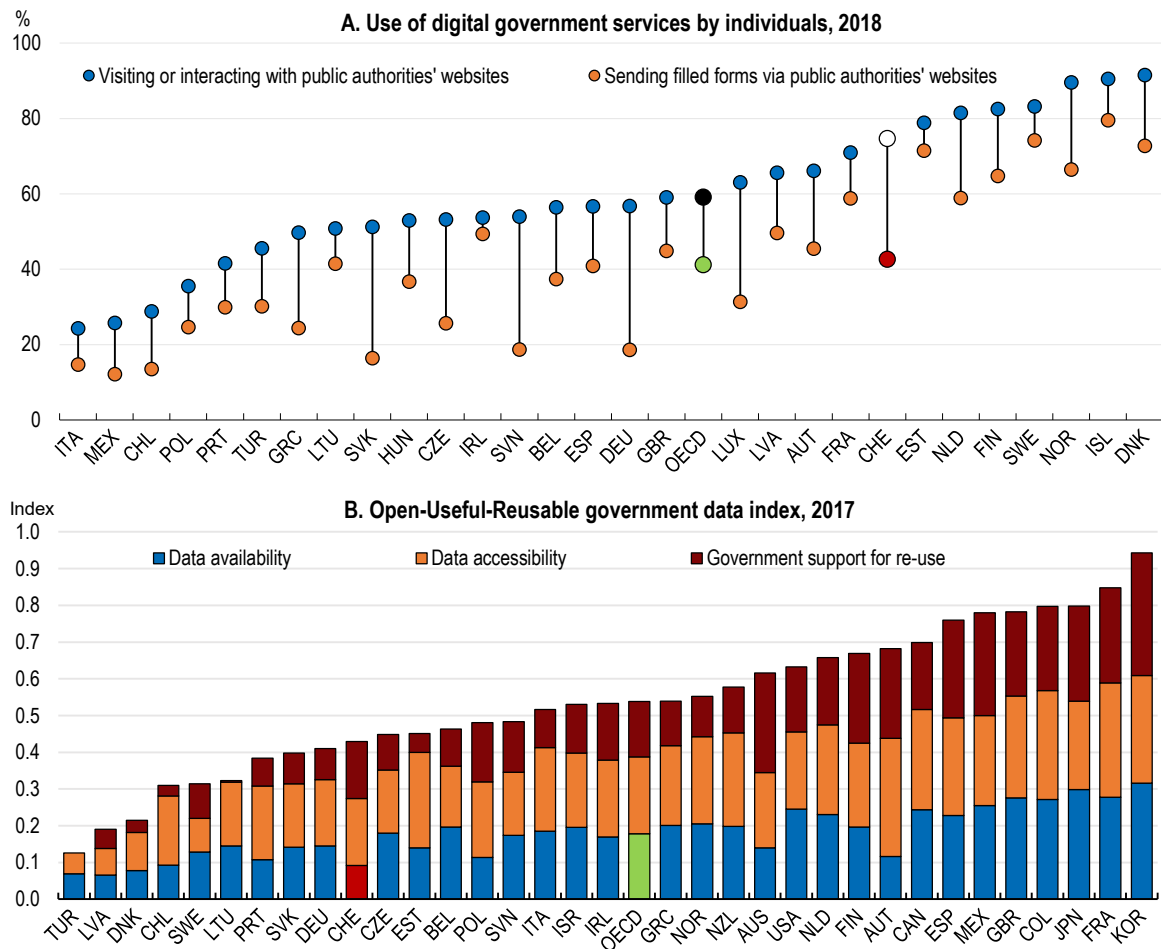
Promoting the diffusion of new technologies and knowledge more generally would help to realise the potential of technological change. As discussed in the previous *Survey*, increasing access to venture capital and incubators can ease financing constraints for young innovative firms (OECD, 2017a). Although venture capital is fairly high in Switzerland there is less late-stage funding than in leading countries. Plans to introduce R&D tax allowances in 17 cantons may also help broaden R&D activity to younger and smaller firms. Allowing loss-making firms to carry over earned tax benefits or obtain a refund is particularly important for young firms (Appelt et al., 2016). Implementation should be assessed after a couple of years. More comprehensive portals for government support would make policies more effective.

Revamping government services

Providing public services digitally can raise public sector productivity and increase the quality of services. It has also been linked to private sector adoption of digital technologies (Andrews, Nicoletti and Timiliotis, 2018). A relatively high share of Swiss interact with the government online (Figure 1.25, Panel A). However, there is a large gap for some services, such as submitting forms online. The government's *Digital Switzerland Action Plan* identifies a range of actions to improve e-government, including introducing an e-ID. This will replace the requirement of handwritten signatures in some circumstances, which is a barrier to online services (SECO, 2018b). Expanding the use of e-procurement would increase transparency and reduce opportunities for corruption. In 2015 one-fifth of federal government procurement was not posted on *simap*, the e-procurement website (Parvex, 2017).

Data are at the centre of the digital revolution. Switzerland lags behind most OECD countries in making data open, useful and reusable (Figure 1.25, Panel B). Recognising this, all data published by federal services must be made accessible free of charge and in a computer-readable format by 2020. Cantons should be encouraged to do likewise. Currently, a lack of up-to-date data hampers policy making and evaluation in a fast-changing world. Making the digital economy visible in statistics, understanding the economic impact and designing interdisciplinary approaches to data collection are among nine actions in the OECD's Going Digital roadmap for measuring the digital transformation (OECD, 2019e). The *Digital Switzerland Action Plan* includes measures to explore big data and expand data availability but a broader roadmap and richer data would facilitate policy-making during the transition. In particular, the methods and scope of data currently collected should be reviewed, with a priority on more timely and internationally comparable data.

Figure 1.25. Digital government is less advanced in some respects



Note: Data for Switzerland are from 2017.

Source: OECD (2019), *Measuring the Digital Transformation*, based on OECD (2018), *Open Government Data Report: Enhancing Policy Maturity for Sustainable Impact*, OECD Digital Government Studies, OECD Publishing, Paris; OECD, *ICT Access and Usage by Households and Individuals* database.

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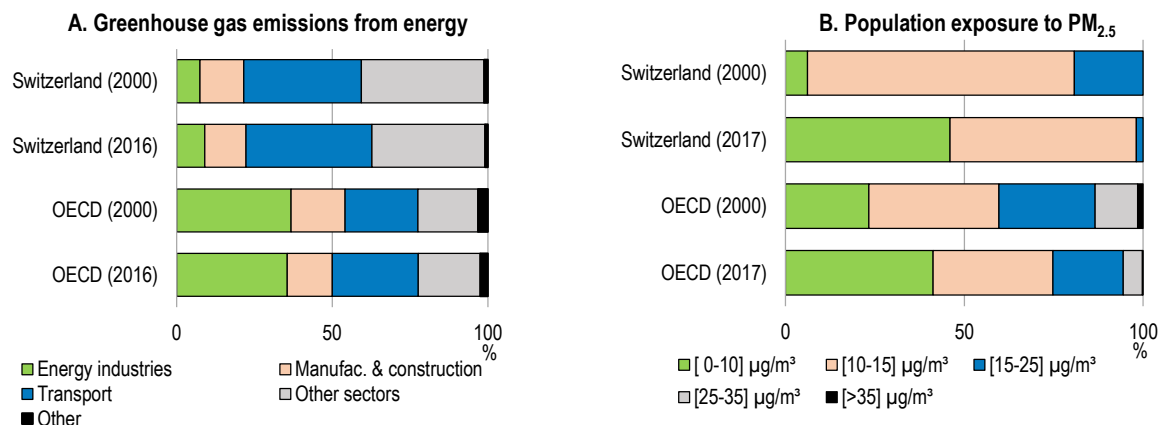
Encouraging new technologies to meet environmental aims

Energy-related greenhouse gas emissions are relatively low in Switzerland. However, transport is an important source of emissions, accounting for around 40% of energy-related greenhouse gas emissions (Figure 1.26, Panel A). Road transport also contributes substantially to air pollution. New cars are the most polluting in Europe: in 2018 average CO₂ emissions for new cars increased to 138g/km, well above the EU average of 120g/km (Federal Office of Energy, 2019). While air quality has improved, more than half of the Swiss population remains exposed to small particles above the WHO-recommended limit of 10 micrograms per m³ (Panel B). Air pollution particularly affects children's health and their development, with persistent effects on education outcomes (WHO, 2018; Heissel, Persico and Simon, 2019).

Electric mobility has the potential to significantly lower emissions and local air pollution. However, the share of electric cars among new vehicles was only 3.2% in 2018, well below leaders such as Norway, Sweden and the Netherlands. The *Electric Mobility Roadmap 2022* targets 15% of newly registered cars to be rechargeable by 2022. Switzerland could require charging points be installed in new and renovated non-

residential buildings, as in the European Union (IEA, 2018). It could consider following Denmark, Ireland, Israel and the Netherlands (and others) by banning sales of new fossil-fuel cars by 2030. The UK's Commission for Climate Change also recommended ending such sales by 2030.

Figure 1.26. The transport sector contributes to greenhouse gas emissions and air pollution



Source: OECD, *Environment database*, *Green Growth Indicators database*.

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Price mechanisms can help shift the mix of cars to low-emission vehicles using better technologies. There is currently a federal vehicle tax of 4% on new purchases (electric vehicles are exempt) and annual taxes at the cantonal level. Several cantons offer reduced rates for cars with greater efficiency or lower emissions but there is substantial variation across cantons. In addition, there are penalties when importers exceed a target of CO₂ emissions across a batch of cars; this target will be reduced from 130g/km to 95g/km in 2020. But these have not been effective in shifting the mix of cars, as evidenced by the increase in average emissions per new car. Israel's implementation of a green tax on new cars had a major impact on the purchase of cleaner cars (Box 1.5). Vehicle taxation should be redesigned with federal tax rates depending on pollutants (including CO₂ and NO_x). Reducing the differences in cantonal taxation and creating a stronger link with pollutants would provide more consistent price signals to consumers.

Box 1.5. Israel's experience with a green tax on new cars

In 2009 Israel introduced a Green Tax scheme (updated twice since) to encourage consumers to choose less polluting cars. It targets reductions in all polluting vehicle emissions by adjusting the vehicle purchase price of different car models based on the relative impact to society from five key pollutants (carbon monoxide, nitrogen oxides, hydrocarbons, particulate matter and carbon dioxide). There are 15 tax bands based on a car's "green grade". The maximum purchase tax was set at 83% for the most polluting rating, with increasing rebates for better pollution ratings.

By 2014, 83% of new cars were in the lowest pollution grades, from 19% in 2009. Average CO₂ emissions per car fell by one-fifth and other per-car emissions also fell. However, because the reform initially lowered prices for a typical car, car purchases and congestion increased. The reform demonstrated the efficiency of economic incentives in changing behaviour. It also highlighted the importance of avoiding inducing demand through lower prices, regularly reviewing tax rates and implementing complementary policies to encourage viable alternatives to driving.

Source: OECD (2016), "[Israel's green tax on cars: lessons in environmental policy reform](#)", *OECD Environment Policy Papers*, No. 5, OECD Publishing, Paris.

Technology can help increase the number of passengers in cars, thereby reducing traffic and congestion. Ride sharing through digital platforms, as recently modelled for Dublin for example (ITF, 2018a) can lower CO₂ emissions sharply and deliver substantial reductions of congestion and pollution, provided they replace individual car use. Doing so also improves connectivity, while reducing costs to users and the public purse. For example, the modelling showed that if 20% of private car trips were replaced with shared modes, emissions would fall by 23%.

Other policies can support the shift. 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 scope of the distance-based transport tax could be expanded beyond heavy vehicles and congestion charging introduced to price congestion and road use more effectively (van Dender, 2019; ITF, 2018b; OECD, 2017c). Teleworking also reduces high-carbon transport demand and can boost well-being. Only 10% of Swiss teleworked in 2018, compared to more than 30% in the Netherlands, Sweden, Finland and Luxembourg.

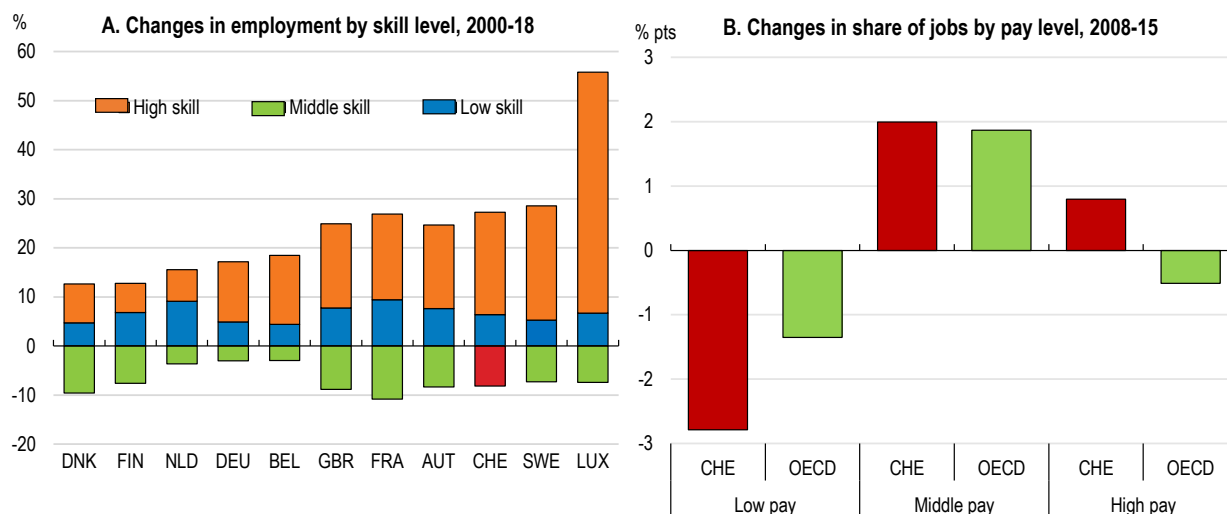
Inequality has been contained to date but it is at risk of widening

Income inequality is currently around the OECD average but the interaction of new technologies, longer lives and an older population are likely to exacerbate inequality. Longevity and technology both offer more flexibility in careers than the conventional “three stage life” of study, work and retirement (Gratton and Scott, 2016; OECD, 2019f). But not all workers are equally placed to benefit and those with low skills are especially at risk (OECD, 2019f). Disadvantages in health, education and earnings reinforce each other, which can translate into inequalities in older age (OECD, 2017d). As the ratio of retirees to workers rises, redistribution will be constrained. Accordingly, preventive action is crucial.

Enhancing workers’ adaptability

So far, the Swiss labour market has coped well with disruptions from technological change. While the share of middle-skill jobs, such as craftsmen and machine operators, has fallen, overall employment has expanded, as have middle-paying jobs (Figure 1.27). Unlike in many countries, young people have benefited from a shift from low-paying to middle-paying jobs (OECD, 2019i). Nonetheless, there is a risk that the effects of new technologies linked to machine learning are different. OECD research suggests that around half of advanced economies’ workforce risk significant change in their job due to automation, mostly due to major changes in tasks rather than job loss (Nedelkoska and Quintini, 2018). A recent survey of Swiss firms suggests that digitalisation has not yet changed net employment but reinforces the finding from other countries that unskilled workers are more likely to suffer job loss (Arvanitis et al., 2018). Amongst digital technologies, it is machine-based technologies, such as robots and 3D printing, that appear more likely to substitute for workers (Balsmeier and Wörter, 2019).

Figure 1.27. Job polarisation has not hollowed out the income distribution



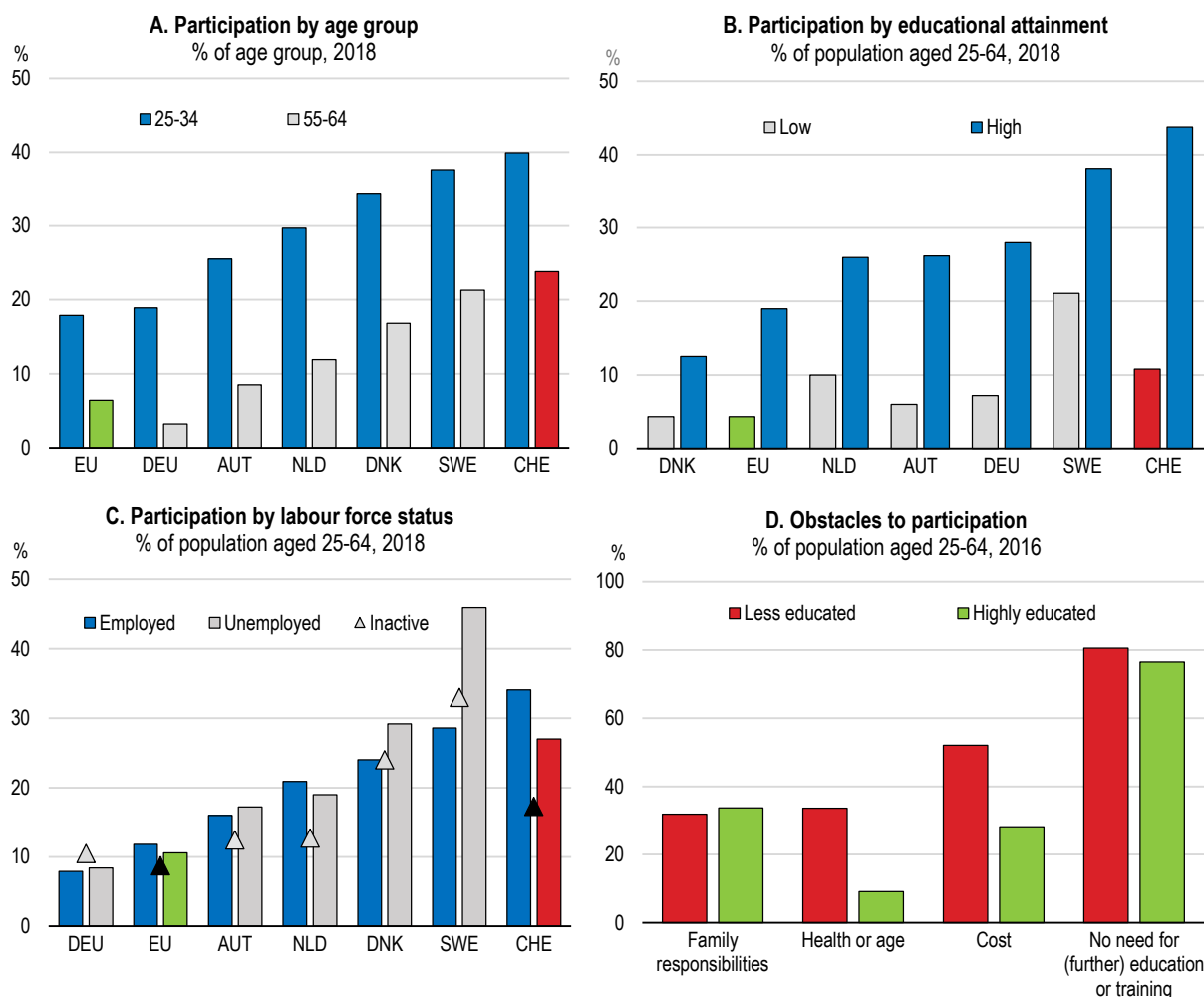
Note: In Panel A countries are ordered by the change in net employment over 2000-18. High-skill occupations are: managers, professionals and technicians and associate professionals; medium-skilled occupations are clerical support workers, skilled agricultural, forestry and fishery workers, craft and related trades workers and plant and machine operators and assemblers; low-skilled occupations are service and sales workers, and elementary occupations. The armed forces and non-responses are not shown. In Panel B low-paid jobs are those paying less than two thirds of the median wage, while high-paid jobs are those paying more than 1.5 times the median wage. The OECD average is the unweighted average generally for 2006-16.

Source: Eurostat; OECD (2019), *OECD Employment Outlook 2019*.

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Adapting to changes associated with the digital transformation will require upgrading skills throughout working lives (OECD, 2019f). Switzerland is well placed, with its established traditions of professional training – continuing education is the norm for many Swiss (Figure 1.28). However, as discussed in the previous *Survey*, participation by some groups of workers, with less education or out of work, is much lower (OECD, 2017a). Those workers may be most at risk from digitalisation. Many do not see a need for further training but cost and “health or age” appear to be important obstacles (Panel D).

Figure 1.28. Participation in adult learning is high but can be broadened



Note: Includes formal as well as non-formal education and training. The reference period for participation is the four weeks prior to the interview. Low educational attainment refers to below upper secondary education (ISCED 0-2) and high refers to tertiary education (ISCED 5-8). In Panel D, multiple responses are allowed.

Source: Eurostat, *Education and Training* database.

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The Continuing Education and Training Act, which came into force in 2017, provides a framework for government action. In 2018 the Swiss government launched a programme subsidising employer-provided training in basic skills, including IT, which reached 1 500 participants in the first year. New measures announced in 2019 including free career guidance and skills assessment for over 40-year-olds and recognising prior experience could help expand training (Table 1.10). Subsidies or vouchers could also be considered for targeted groups, as recommended in the previous *Survey* (Table 1.11). A 2006 trial demonstrated that targeted vouchers could be effective (Schwerdt et al., 2012). Vulnerable workers could also be reached by allowing jobseekers whose unemployment benefits have expired to continue accessing training if they receive other social benefits. Policy makers should map the risks of automation and prepare a strategy to ensure that at-risk workers train in a broader set of skills to facilitate occupational change, as suggested in the latest *Skills Outlook* (OECD, 2019f).

Table 1.10. 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, persons provisionally admitted, 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 persons provisionally admitted 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 a single or CHF 200 000 for couples.	Unemployed workers who exhausted unemployment benefits at the age of 60 or over.	40 million in 2022 / 230 million in 2025

Note: Monetary amounts shown relate to the Confederation and are in 2019 prices.

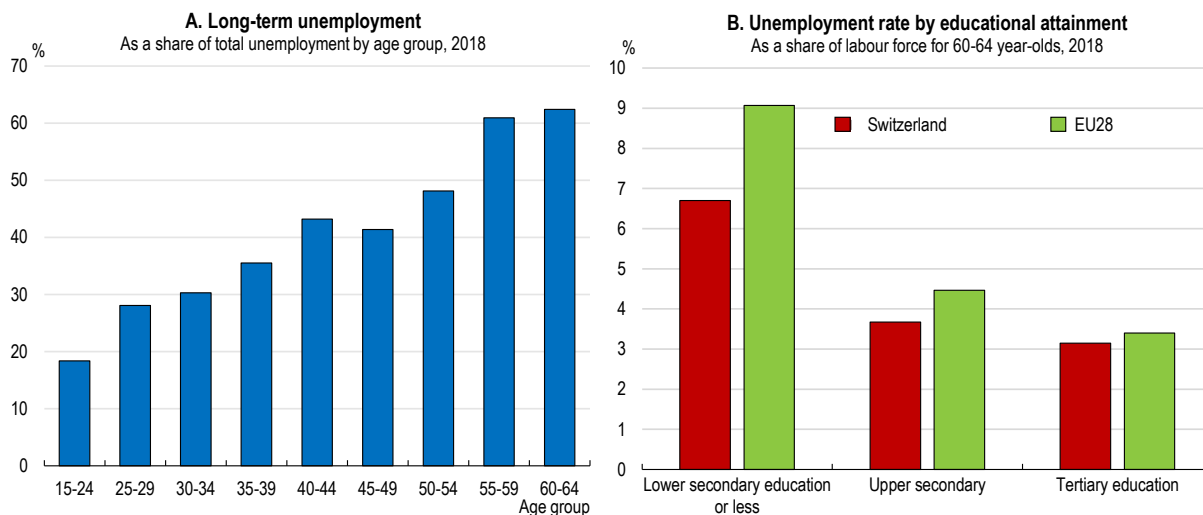
Source: Swiss Confederation (2019), *Fiche d'information : mesures pour renforcer l'encouragement du potentiel de la main-d'œuvre en Suisse* [Factsheet: Measures to strengthen the promotion of the potential of the workforce in Switzerland]; [Prestation transitoire pour chômeurs âgés : ouverture de la procédure de consultation](#) [Transitional benefit for elderly unemployed: opening of the consultation procedure].

Table 1.11. Past recommendations on education and skills

Recommendations in previous Surveys	Action taken since November 2017
Use subsidies to encourage participation in continuing education and training for groups with low participation rates.	In 2018 the Basic Skills in the Workplace programme was launched. It offers subsidies to companies that provide basic skills training.
Collect more detailed data on skills to facilitate adjustments to education in response to changing labour market needs.	Switzerland will participate in the next cycle of the OECD Programme for the International Assessment of Adult Competencies (PIAAC).
Improve access to tertiary education for all segments of society, including special measures for those from lower socio-economic and immigrant backgrounds.	In 2018 subject-based funding was created for preparatory courses related to specific tertiary-level professional education examinations.
Boost the supply and attractiveness of fields of study that are in high demand in the labour market. Further clarify study streams across the tertiary education system.	In 2019 a new strategic objective was introduced for two Federal Institutes of Technology: they should strengthen computer sciences and technology in research and teaching.
Increase the effectiveness of pathways between vocational and general streams by increasing the academic component of the vocational curriculum and vice-versa.	No specific action taken.
Encourage small firms to participate more in apprenticeships by promoting sharing of apprenticeship places between firms and training centres that undertake part of the training.	No specific action taken.
Strengthen linkages between the vocational education and training system and employer associations in school-based vocational training.	No specific action taken.
Increase public spending on early childhood education and care, especially for children with disadvantaged socio-economic backgrounds.	In 2018 Parliament extended a federal programme providing additional childcare places. Parliament will vote on a proposal to increase the federal income tax allowance for child expenses from CHF 10 000 to 25 000 per year.

Unemployment is lower for older workers but once unemployed, older workers are less likely to find work (Figure 1.29). Around 30% of jobseekers aged 45 or over do not find work before their unemployment benefits expire (SECO, 2019). Seniority wages together with a higher rate for employer (and employee) social security contributions (up to 2.5 times from age 34 to 55) make older workers more expensive. Proposed reforms will reduce this effect. Older workers are also less likely to participate in training (Figure 1.28, Panel A). Consequently, occupational mobility is a greater challenge and they are more at risk from unemployment due to automation (OECD, 2019f).

Figure 1.29. Finding work is more difficult for older jobseekers, especially the less educated



Note: In Panel A, long-term unemployment comprises those unemployed for 12 months or more.

Source: Eurostat, *Labour Force Statistics* database.

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The government's plans to expand access to training for older jobseekers are welcome (Table 1.10). However the profile of unemployment suggests that intervention should be earlier, at age 50 or 55. Denmark offers jobseekers aged over 50 an activation programme within three months of unemployment compared to six months normally (OECD, 2018f). The planned benefits for jobseekers over 60 to transition to retirement reduce incentives to search for work or, at younger ages, to retrain. These will be costly and should be reconsidered. If retained, the benefit should be linked to participation in relevant training, community services or job search (as in countries where unemployment benefits are not time-limited).

Other barriers to hiring older workers should also be tackled. The age-related progressivity in social security contributions should be flattened. Moreover, age discrimination should be prohibited as in all other OECD countries; if enforced and complemented with campaigns to change social norms, it could boost employment of older workers (OECD, 2014). 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, 2018g). The existing annual conference on older workers that includes a range of stakeholders should seek ways of introducing greater flexibility into the wage system and reduce seniority wages so that wage growth is more closely linked to productivity developments. It could include training for less skilled and older workers, which would increase productivity and wages over time. In addition, there should be more incentives to work beyond age 65, including by providing opportunities to compensate for gaps in pension rights through contributions after age 65.

Facilitating residential mobility can help workers adjust to changing circumstances (OECD, 2019f). In principle, the high rate of renting – almost 60% of households – increases mobility. However, Swiss tenancy laws restrict rent increases, so long-term tenants pay well below market (OECD, 2015a). This generates lock-in effects, limiting workers’ ability to adjust to changing job prospects and hampering downsizing by older households. Despite the investor-led construction boom, housing shortages in city centres persist because new properties are on the outskirts: the vacancy rate in the five major cities is 0.5% (Credit Suisse, 2019). The tenancy law should be adjusted to minimise lock-in effects, accompanied by targeted housing allowances or additional social housing for low-income households (OECD, 2015a). Densifying city centres where shortages persist would help lower rents there. Linkages between eligibility for cantonal social assistance and length of residency should be reviewed in a co-ordinated way, to avoid aggravating lock-in effects such as in Basel-Stadt, where benefits for pensioners are restricted to residents for 10 of the past 15 years.

Mitigating risks of inequality amongst the elderly

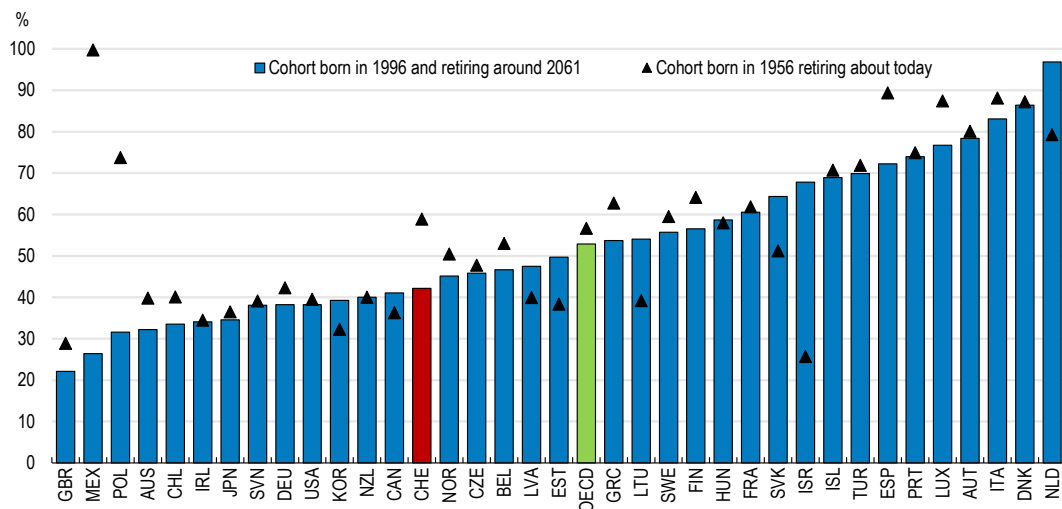
The pension system currently delivers good retirement incomes and, through a redistributive first pillar, it reduces income inequality amongst retirees. The first pillar is a public pay-as-you-go system which is the main source of income for low-income earners. It is redistributive because the maximum benefit is capped but contributions are not. “Supplementary benefits” add to the first pillar pension for poor households; they are means-tested and allow pensioners to live above the minimum subsistence level. Some cantons offer additional benefits. The second pillar is an occupational scheme and many firms choose to offer a voluntary (“extra mandatory”) component.

The mandatory system is likely to become less adequate over time. The replacement rate (ratio of pension benefit to final wage at retirement) for an average-salary worker is currently around 60% for someone retiring now. Estimates based on the OECD Pension Model using current pension settings suggest the replacement rate would fall to around 40% for a person starting a career now – lower than in many other OECD countries (Figure 1.30). This would increase inequality since lower-income earners are less able to compensate through higher savings. It also risks increasing spending on supplementary benefits, assuming that eligibility rules did not tighten in response.

Promoting greater awareness of overall pension entitlements would help workers to make informed saving decisions and compensate for the falling replacement rate from the mandatory system. This could be through a single website as in Belgium and Sweden, for example. The projected falling replacement rate is largely driven by the indexation mechanism of the first pillar pension at retirement, which is based on the average of wage and consumer price inflation. Indexation based on wage growth would prevent this fall and the potentially sizeable increase in demand for supplementary benefits; the increased cost could be partly offset by indexing pensions to cost-of-living increases during retirement. However such a large reform would require a lengthy transition period.

Figure 1.30. 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.

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*.

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The replacement rate from the mandatory part of the second pillar is likely to fall further to sustain the system. Unlike a purely defined contribution system, the rate at which accumulated capital is converted into an annual pension benefit is set by law and has been unchanged since 2004 despite rising life expectancy and lower investment returns. At 6.8% it is well above an actuarially fair rate, which is estimated at 4.5-5%, depending on expected returns and retirement age (Helvetia, 2018). In response, pension funds have lowered returns accruing to current contributors, resulting in intergenerational transfers equivalent to 0.8% of pension assets on average annually over 2014-18 (Occupational Pension Supervisory Commission, 2019). This aggregate masks a more severe threat to benefits, and potentially solvency, at some funds (most funds have an extra-mandatory scheme and use that to lower the effective conversion rate).

Setting such technical parameters in legislation has proved inappropriate. Under a pure defined-contribution system, funds would set benefits, preventing redistribution of savings. An option would be for the Federal Commission for occupational pensions to make a recommendation based on market returns and life expectancy with the rate set in an ordinance, as currently done for the minimum return. In the interim, the most important measure is to lower the minimum conversion rate, which on its own would lower benefits. In July 2019, social partners proposed lowering the conversion rate to 6%, accompanied by a range of other measures.

Lengthening the contribution period would raise replacement rates from the second pillar, as well as securing the first pillar's funding as discussed above. Raising the statutory retirement age and improving incentives to work beyond that age are key reforms. The statutory retirement age for men has not changed since 1948 despite longer lives. The retirement age for women is 64. The statutory setting has a strong effect on behaviour: the participation rate plummets from 63% for 60-64 year-olds (well above the OECD average) to 23% for 65-69 year-olds (below the OECD average). In Israel, New Zealand and Iceland, the participation rate of 65-69 year-olds ranges from 43% to 54%. Starting to contribute earlier would also add to retirement incomes. Contributions to the second pillar only begin at age 25, even though the employment rate is already 70% for the 20-24 age group. Estimates based on the OECD Pension Model suggest that

contributing from age 20 to age 68, rather than 25 to 65, could add an additional 5 percentage points to an average earner's replacement rate. An earnings threshold prevents low-income workers and those with several jobs from joining the mandatory second pillar. This should be lowered so that more workers benefit from compounding interest.

Women typically have lower pension entitlements because they work fewer hours, have interrupted careers and have lower earnings even when they do work full-time. But they benefit from survivor pensions in both pillars and have a childcare bonus as well as conditional exemptions from contributions in the first pillar. These systems create inequalities across household types and add to the cost of the system; the system should shift towards individual entitlements and protect against poverty in other ways. Addressing shortages in affordable childcare, as recommended in previous *Surveys*, would help mothers work more if they desire. Promoting greater awareness of overall pension entitlements would help workers to make informed decisions, for instance through a single website.

Another source of inequality in older age is in access to long-term care. Because the Swiss system is highly decentralised, levels of support differ across cantons. Its financing is also fragmented across payers and, with a lack of price transparency, there is potential to improve cost-effectiveness (Table 1.12; Cosandey and Kienast, 2016). Long-term care which is not medically prescribed and listed in the health insurance act must be paid by individuals. The need for greater co-ordination is well recognised (Federal Council, 2016).

Table 1.12. 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

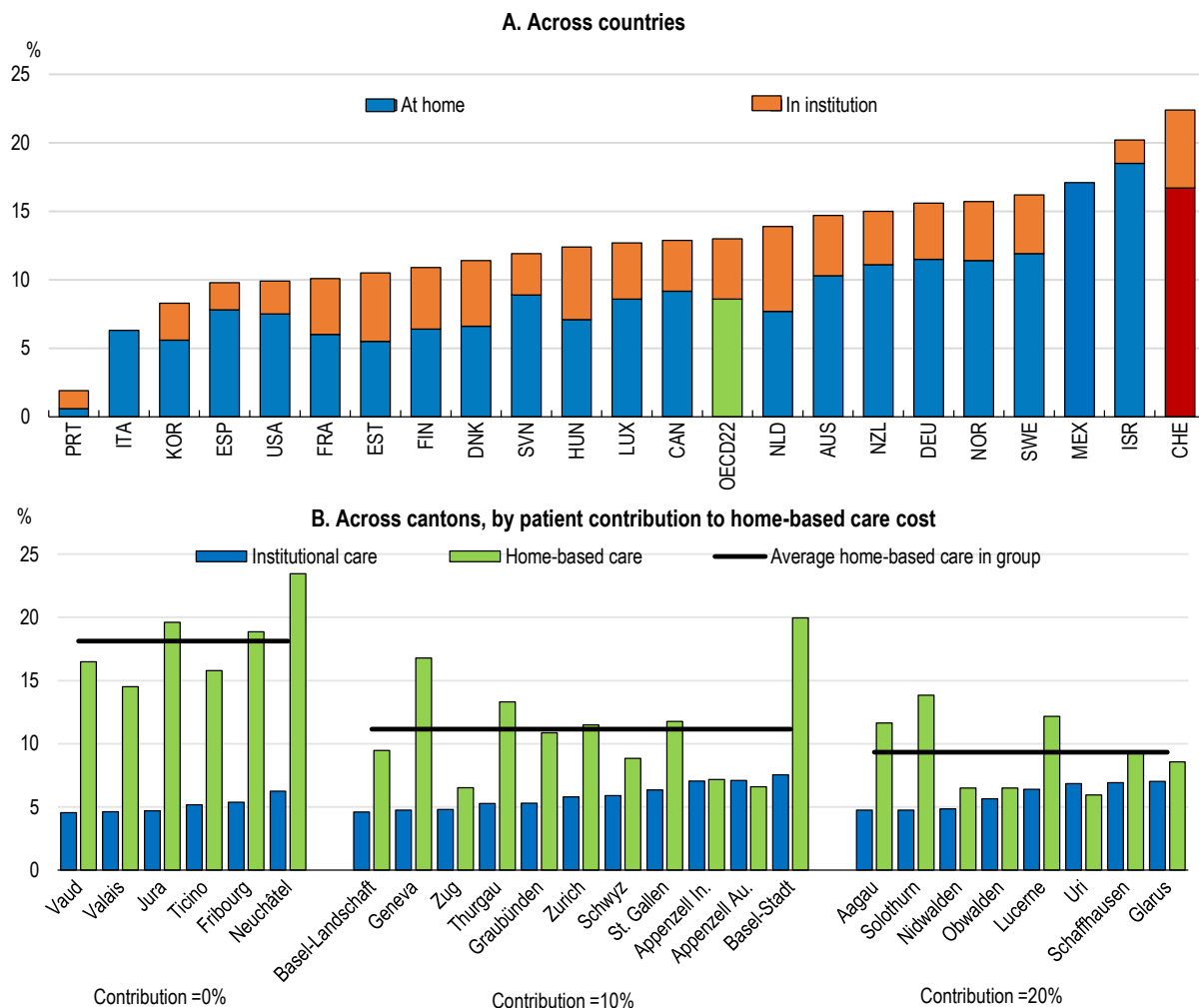
Note: These data do not take into account the insurance premium subsidy paid to households by the federal and cantonal governments.

Source: Federal Statistical Office

In 2017 22% of those aged 65 or over used long-term care – the highest share in the OECD (Figure 1.31, Panel A). Most care was at home. Home-based care can be more cost effective for low care needs – and preferred by patients – while assisted living or an institution can be more efficient for patients with greater needs (Cravo Oliveira Hashiguchi, Ortega Regalado and Llana-Nozal, 2020). Home-based care seems to be more common in cantons with better financial support but cultural differences also play a role (Panel B; Dutoit, Füglistler-Dousse and Pellegrini, 2016). Affordability appears to push some pensioners to nursing homes where they have more financial support (through cantonal supplementary benefits). In 2014, half of all nursing home patients received supplementary benefits and 30% of all patients needed less than an hour of care per day (Cosandey and Kienast, 2016).

Figure 1.31. 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; Federal Statistical Office.

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Broadening financial assistance to include some uninsured support services could help delay entry into nursing homes and improve early detection of health problems. This could make the system more efficient and would improve patient well-being, given that many patients prefer to stay at home as long as possible (OECD, 2017d). 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 use vouchers for support services, as in Nordic countries (OECD/WHO, 2011). Lucerne and Bern have piloted such projects. Another option is to shift to a system of cash benefits linked to a standardised scale of care needs (there are currently different systems for institutional and home-based care). Means testing and co-payments could help contain costs. A co-ordinator could help navigate the system. This would give patients some choice and could develop the market.

Local-level experiences should be used to improve the delivery of long-term care. For example, Zurich is piloting a decentralised model based on the Netherlands' *Buurtzorg* model (Box 1.6). Local innovation could be encouraged as in Sweden. Nonetheless, a regulatory framework for long-term care costs should be created or supervision stepped up; the consumer price watchdog has highlighted that the pricing of accommodation and board varies widely within and across cantons in ways that do not reflect costs (Surveillance des Prix, 2018). With the Swiss population aged 80 and over expected to double over 2015-40, steps toward a more complete system should begin now.

Box 1.6. 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 the introduction of a common political board across counties and municipalities to deliver coordinated care for older people.

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.

The system of mandatory private health insurance ensures universal health care coverage. The health insurance providers set standard insurance premiums per person irrespective of income. Public subsidies aim to mitigate the regressive effects of non-income related premiums. However, in many cantons premia remain a larger burden on low- and middle-income households even after subsidies are taken into account (Ecoplan, 2018). Low-income pensioners are protected in all cantons but modelling suggests that depending on where they live, insurance can cost a middle-income pensioner up to one-fifth of their income. To further reduce the regressivity of the system, cantons should work with the federal government towards a national framework that links subsidies to taxable income. A simpler system would also be cheaper to administer (OECD/WHO, 2011).

MAIN FINDINGS	RECOMMENDATIONS (key recommendations in bold)
Macroeconomic policies to support growth and maintain low inflation	
<p>Debt is low and the fiscal position is sound. Structural surpluses have been larger than expected at the federal level. The monetary policy rate is negative and one of the lowest OECD-wide.</p>	<p>Take advantage of available fiscal space as needed, including by making fuller use of the margins under the spending limits of the fiscal framework (or “debt-brake rule”).</p> <p>When inflation is firmly rising start to remove monetary accommodation.</p>
Addressing challenges facing the financial sector	
<p>Risk related to the housing market have grown due to the search for yield. Mortgages for investment properties have become more risky but stronger lending standards for investor mortgages will be introduced in 2020.</p>	<p>Establish a formal framework for setting mortgage lending limits that takes affordability into account and is enforced on a comply-or-explain basis.</p> <p>Remove explicit government guarantees for cantonal banks. Enhance information-sharing between various supervisors. Improve coverage and timeliness of data collection for financial institutions, particularly pension funds and life insurers. Limit the tax deductibility of mortgage interest so that, combined with maintenance outlays, it does not exceed the amount of declared imputed rent.</p>
<p>Switzerland’s large international financial sector is exposed to risks and opportunities from climate change and climate change mitigation policies globally. Providing investors and policy-holders with more information would improve resource allocation.</p>	<p>Strengthen disclosure of climate-related risks by financial intermediaries in line with recommendations of the Task Force on Climate-related Financial Disclosures.</p>
<p>The size and internationalisation of the Swiss financial sector increase the risk that it is used for criminal activities such as money laundering.</p>	<p>Reinforce the framework with stronger sanctions for non-compliance with anti-money laundering obligations and in foreign bribery cases. Provide legal protection for whistleblowers in the private sector.</p>
Embracing digitalisation and new technologies	
<p>Take-up of digital technologies has not kept pace with leading countries, particularly in small and medium-sized firms. IT-related skills shortages have increased. Insufficient competitive pressures and a lack of trust may also be hampering adoption.</p>	<p>Facilitate high-skilled immigration from non-EU countries to meet current labour market needs.</p> <p>Reduce barriers to entry, including by removing restrictions on the number of competitors and simplifying occupational licensing across cantons.</p> <p>Modernise merger controls and strengthen sector regulators’ powers. Reduce public ownership or reduce the distortions due to public ownership. Lower restrictions on trade in both goods and services. Strengthen data protection and create a national privacy strategy in consultation with the public.</p>
<p>Participation in lifelong learning is high. But participation falls below leading countries for workers with low educational attainment and those who are not employed.</p>	<p>Expand spending on training for jobseekers, including those on social benefits.</p> <p>Use subsidies to encourage continuing education and training for groups who are most at risk from the effects of digitalisation.</p>
<p>E-government services are improving. Further digitalisation can reduce administrative burden and raise productivity.</p>	<p>Expand the use of digital tools to enhance services and simplify procedures at all levels of government.</p>
<p>A lack of data hinders the development of policies related to the digital economy.</p>	<p>Implement the OECD Going Digital roadmap for measuring the digital transformation, with a priority on more timely and internationally comparable data.</p>
<p>New technologies offer the opportunity to decarbonise transport, which is a key source of Swiss carbon emissions.</p>	<p>Redesign the federal vehicle tax to strengthen price incentives to purchase low-emission vehicles.</p> <p>Strengthen the relationship between cantonal annual vehicle taxes and pollutants.</p>

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Annex 1.A. Progress on structural reform

This Annex reviews action taken on recommendations from previous *Surveys* since the November 2017 *Survey* that are not reported elsewhere in this *Survey*.

Recommendations in previous <i>Surveys</i>	Action taken since November 2017
Labour market	
Facilitate high-skilled immigration from non-EU countries to meet labour market needs.	For 2018 and 2019 quotas were raised by 500 to 8 500 persons per year.
Increase women's labour market options by increasing childcare affordability.	In 2018 Parliament extended a federal programme providing additional childcare places. Parliament will vote on raising the federal income tax allowance for childcare expenses from CHF 10 000 to 25 000 per year.
Implement a corporate governance code establishing gender goals to increase the number of women in senior management. Increase the proportion of women on company boards by setting ambitious targets combined with a "Comply or Explain" requirement or by setting quotas.	In June 2019 Parliament passed a revision of the corporate law, which includes an objective of at least 30% women on the board of directors and 20% on the executive board on a comply-or-explain basis. In December 2018 Parliament passed a revision to the Gender Equality Law requiring companies with 100 or more employees to conduct a gender pay gap analysis every four years and share it with employees. In September 2019 Parliament passed legislation granting two weeks of paternity leave.
Promote programmes to lengthen healthy working lives, including preventative health programmes.	In 2018 the Federal Coordination Commission for Occupational Safety launched a campaign to improve risk prevention in the services sector.
Promote lifelong training, career planning and tailored job-search assistance to enhance workers' resilience to change.	Over 2018-19, the government launched a campaign to promote adult professional certification to adults, employers and career counsellors. In June 2019 the government announced further measures, including offering career guidance for workers aged 40 and over and offering training for older jobseekers whose unemployment benefits had expired.
Housing market policies	
Review spatial planning regulations to make it easier to build denser housing.	In October 2018, the government submitted to Parliament the second revision of the Federal Law for Spatial Planning. It will provide more flexibility to cantons but require compensation for building in restricted areas.
Limit the tax deductibility of mortgage interest so that, combined with maintenance outlays, it does not exceed the amount of declared imputed rent. Update the imputed rent calculations more frequently to better reflect market values.	No specific action taken.
Environment (including recommendations from the 2017 <i>Environmental Policy Review</i>)	
Make greater use of market mechanisms to lower the cost of the transition from nuclear to renewable energy.	On 1 January 2018 revisions to the Energy Law brought the feed-in remuneration closer to the market situation. However, feed-in remuneration for new installations will only be granted up to end 2022.
Increase the CO ₂ levy, and remove exemptions to this and other green taxes.	In January 2018 the CO ₂ levy was increased to CHF 96 per tonne of CO ₂ .
Further promote private- and public-sector energy-related research, and continue engagement with foreign researchers to facilitate realisation of the Energy Strategy 2050.	No specific action taken.
Move forward with linking the Swiss and EU emissions trading systems.	The agreement is expected to enter into force on 1 January 2020 after being ratified by respective Parliaments.
Harmonise and strengthen environmental policy and law implementation across cantons by improving vertical coordination, promoting regular performance monitoring mechanisms and indicators.	Since 2018, cantons report CO ₂ emissions of buildings to the Federal Office for the Environment using common guidelines and reporting tools.
Expand incentive-based taxation to reduce the environmental impact of consumption; in particular, consider introducing mobility pricing and making the bin-liner fee an incentive-based instrument.	An impact assessment on different forms of mobility pricing using the example of the Canton of Zug is to be completed in 2019.
Maintain or strengthen the polluter-pays principle to finance needed investment (e.g. in sewage treatment plants) via an increase in corresponding charges, as necessary to ensure cost recovery.	No specific action taken.
Take concrete steps to more systematically monitor, and create incentives for improvement in, the environmental performance of investments made by the financial sector.	Market players will be invited again to test the climate alignment of their portfolios in 2020.

Annex 1.B. Predicting severe recessions

Table 1.B.1 summarises the models used to assess the probability of a severe recession in Switzerland, as discussed in Box 1.2.

Annex Table 1.B.1. Variables contributing to the risk of a severe recession

Coefficients from probit regressions at 2, 4, 6 and 8 quarters ahead

Dependent variable = 1 if severe downturn, 0 otherwise	t+2	t+4	t+6	t+8
Business cycle variables				
Yield curve slope (10-year less 3-month rate; lagged 1 and 3 quarters)	-1.08***	-1.49***	..	..
Unemployment gap (lagged 2, 4, 6 and 8 quarters)	2.98***	3.91***	2.89***	2.88***
Financial cycle variables				
House price to rent ratio (1-year change; lagged 3 and 5 quarters)	-0.25***	-0.18***	..	..
House price to rent ratio (3-year change; lagged 7 and 9 quarters)	..	..	0.15**	0.19***
Real share price growth (3-year change, lagged 6 and 8 quarters)	..	..	0.07*	0.16***
Euro area non-bank financial credit/GDP (3-year change, lagged 4 and 6 quarters)	1.04***	1.67***	..	..
Euro area bank credit/GDP (3-year change, lagged 8 quarters)	..	..	0.77***	..
Euro area real share price growth (1-year change, lagged 2 quarters)	-0.10***	..	..	..
Euro area real house price growth (3-year change; lagged 7 and 9 quarters)	..	..	0.53***	0.61***
OECD real house price growth (1-year change, lagged 3 and 5 quarters)	-0.18*	-0.24**	..	..
McFadden R-squared	0.83	0.84	0.69	0.65
% of correct predictions	94.9	94.8	88.9	88.2
- Severe downturns	100.0	93.3	96.6	100.0
- Other outcomes	93.7	95.1	87.3	85.7

Note: Severe downturns are defined as episodes during which GDP per capita falls cumulatively by at least 2 percentage points. ***, **, and * denotes significance at the 1, 5 and 10% level, respectively. For an explanation of the principles for selecting variables see D. Turner, T. Chalaux and H. Morgavi (2018), "Fan charts around GDP projections based on probit models of downturn risk", *OECD Economics Department Working Papers*, No. 1521.

Source: OECD calculations.



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