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# Swiss economy: Quo vadis?

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# Impressum

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# Editorial

Dear Reader

The dominant theme of recent weeks has been the outbreak of coronavirus. The disease has now reached more than a hundred countries, including Switzerland. How severe the consequences of this epidemic will prove cannot yet be accurately assessed. The consequences for human health will be primarily driven by the rate at which the virus spreads, the quality of a country's healthcare system, and the susceptibility of its population – whereby older people are much more at risk than younger. The rate of spread will in turn depend heavily on the effectiveness of the precautionary measures taken by the authorities and the wider population.

Paradoxically, the negative economic repercussions of coronavirus may be strengthened – at least in the short term – by those measures. For example, quarantines and travel bans take a significant toll on the revenues of the aviation, tourism, and entertainment sectors. Whether or not working from home (at the "home office"), which we too are currently imposing on our employees for their own protection, will also result in lower revenues remains to be seen. Of course, this in no way means that such measures are unnecessary.

How significantly the Swiss economy as a whole will be affected by the crisis obviously depends greatly on developments in the countries that are Switzerland's key trade partners. In our revised economic forecast, we attempt to quantify this impact (cf. p. 5). The focus article of this issue of "Monitor" likewise engages with the issue of foreign trade (cf. p. 10). We explore in some detail the reasons why Switzerland has recorded a rising export surplus for many years despite the significant appreciation of the Swiss franc, particularly since 2008. Our primary aim is to identify any risks to the Swiss "export miracle". These include extremely high expenditure on pharmaceuticals in the US in an international comparison, and the comparatively strong dollar of recent years – both factors that could come under pressure.

For Swiss economic policy, all this doubtless implies that greater attention should be paid to broad diversification of exports. The most practical – and indeed the only efficient – means by which this can be achieved is to prevent an excessively rapid appreciation of the franc. This in turn means that there is no alternative to the Swiss National Bank's policy of negative interest rates for the foreseeable future. Obviously, a less rapidly appreciating franc would also "protect" our economy to a certain extent against imports. But those who would argue that the current crisis shows that we should be less reliant on imports – e.g. from China – are drawing the wrong conclusions. Systematically replacing cheap imports with (more expensive) domestic products would fundamentally jeopardize Switzerland's prosperity. International trade remains the fundamental pillar of our economic success. Moreover, a policy of "isolationism" would quite clearly offer no protection at all against viruses.

Oliver Adler

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# A short recession looks inevitable

**As a consequence of the coronavirus crisis, a substantial economic downswing is unavoidable. We have once again lowered our forecast for Swiss economic growth in 2020 and now expect gross domestic product to contract by 0.5%. The forecast is subject to a high level of uncertainty as the transmission chains are multi-layered and complex. This is true not only of the virus itself, but also of its impact on the economy.**

**Forecast subject to a high level of uncertainty**

One thing is certain: Swiss economic growth in 2020 is likely to be considerably weaker than recently anticipated. Yet again, we have revised down our forecast. We actually now expect GDP to fall by 0.5% on average over 2020 as a whole (while before we expected 1% growth). That said, this forecast is subject to great uncertainty. One reason for this is that the economy is hit by a supply shock, with measures implemented to combat the spread of the virus inhibiting the mobility of goods and people and causing sales outlets to close, among other effects. At the same time, demand of both foreign and domestic consumers and businesses is falling on the uncertainty sparked by the pandemic and the – at least temporary – decline in incomes and profits. The countermeasures implemented by the monetary and fiscal authorities are unlikely to fully offset the drop in demand, at least not this year. Our forecast is based on the assumption that the extraordinary situation we face at present will only last until mid-May before gradually easing again. In this scenario, growth should pick up sharply again towards end-2020, primarily thanks to the global stimulus measures. Looking ahead to next year, growth could even overshoot. But if the pandemic were to persist for longer, an extended period of economic weakness would be expected.

**Recession in Europe weighing on the export sector**

The global economy will lose a significant amount of momentum over the coming months. The Chinese economy already looks to have bottomed out following an exceptionally hefty slump in growth, and a tentative recovery has now begun. A gradual pick-up is also expected in other Asian countries, though this will be subject to a time lag. The eurozone and the US are still in the first phase of the downturn. These developments – above all the anticipated recession in the eurozone – are hitting Swiss exporters directly. That said, the impact of the growth slowdown varies considerably across the individual trading partners and the various sectors in Switzerland are affected to differing degrees. As far as Germany, Switzerland's most important trading partner with an export share of 18%, is concerned, a 1 percentage point drop in economic growth is set to be accompanied by lower – by 3 percentage points – demand for goods from Switzerland. Italy, the European country hit hardest by the virus to date, is currently the destination for around 6% of all goods exports from Switzerland. According to our analyses, Italian demand for Swiss goods also experiences a disproportionately large fall.

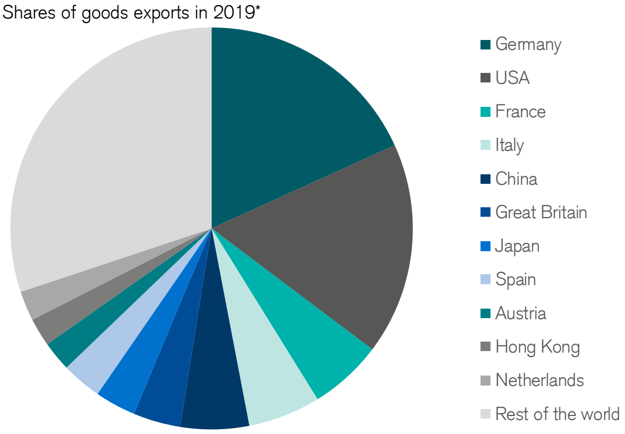
**Share of pharma exports has grown significantly**

In CHF billion per year, pharma share in %, right-hand scale


Source: Swiss Federal Customs Administration, Credit Suisse

**Countries buying Swiss exports**

Shares of goods exports in 2019*




Source: Swiss Federal Customs Administration, Credit Suisse *excluding precious metals, precious stones and stones used in jewellery, artworks and antiques

Only around 6% of all Swiss goods exports are bound for China. However, given that the drop-off in Chinese economic growth has an impact on numerous other countries across the world, Swiss exports will also be impacted to a significant extent. The degree to which exports as a whole suffer will obviously depend on the growth trend in the US, which has now become Switzerland's second-most important trading partner (see chart). All in all, in our latest forecasts we are expecting Swiss goods exports to decline this year and therefore to come in considerably weaker than after the Swiss franc shock in 2015. However, the slump in exports should prove to be less pronounced than during the global recession of 2009.

**Volume of external trade set to fall despite robust pharma exports**

This is partly due to the fact that the share of pharma exports is considerably higher these days, with a large proportion of these goods going to the US. Demand for pharmaceuticals is generally fairly unresponsive to short-term fluctuations in foreign growth. The longer-term wealth trend in the purchasing countries is the dominant driver of pharma exports (see chart). Even though total Swiss exports look set to decline substantially, the impact on GDP will not be quite so pronounced as weaker export growth generally goes hand in hand with lower imports. This is because less input in terms of foreign materials and supplies is required. According to estimates by the Organisation for Economic Co-operation and Development (OECD), the foreign value-added share makes up around one-third of exports by Swiss industry on average. Nevertheless, the slowdown in the global economy that is currently foreseeable is set to cut Swiss GDP growth by around 0.7 percentage points.

**Businesses in survival mode**

In light of weaker demand across the world, the high level of uncertainty and the specific difficulties as a result of the coronavirus outbreak, businesses will be cutting back their investment activity, at least for a while. Capital expenditure on plant and equipment is therefore likely to fall. Over the year as a whole, however, we do not anticipate a genuine slump in investment activity in Switzerland, at least provided that international goods traffic continues to – more or less – function and the workforce in Switzerland, along with cross-border commuters, is able to remain mobile. There are two reasons that suggest we will not see the sort of collapse we experienced during the global recession of 2009. Firstly, companies are highly likely to assume that the situation will ease this year. As a result, it is possible to see an end to these extraordinary circumstances – or at least this is what China's experience of the virus outbreak suggests. According to our analyses of corporate investment behaviour during periods characterised by uncertainty (see Monitor Switzerland, second quarter of 2017), capital expenditure is not cancelled until it becomes clear the demand situation is changing on a sustained basis. In the global recession of 2009, for example, there was a widespread fear that the economy would only get back on its feet when the real estate crisis in the US had been overcome, a process that generally takes years. Secondly, there is now a political consensus that disruptions to supply chains need to be prevented as far as possible. This is because interruptions to supply not only inhibit production, they can also have implications for companies' liquidity. If they continue for an extended period, companies lack the cash flow required to fund investments. Lower corporate tax rates thanks to the corporate tax reform, favourable financing conditions and government measures should cushion the decline in investment in this context.

Construction investment is also likely to fall by 0.5%, although interest rates remain extremely low and we expect most building sites to remain open. However, uncertainty will have a dampening effect on this sector. Even without the pandemic, we expected rising vacancy rates in the residential rental segment to prompt a decline in new projects.

**Private consumption slides for the first time since 1993**

The coronavirus crisis is bound to have a huge impact on private consumption in the months ahead. According to our estimates, around a third of average consumer spending by Swiss households relates to goods and services that are in lower demand, can only be bought online or cannot be purchased at all at present. For example, visits to restaurants, which account for 9% of total consumer spending according to the Household Budget Survey of the Swiss Federal Statistical Office, and ticket sales for sporting, theatre and concert events (4% of total consumer spending) will be suspended for at least a month. Many households will be inclined or forced to reduce their spending on hotels (2%), cars (2%) or package holidays (3%). Based on a very rough estimate that this expenditure will fall by half over a period of two months, private consumer spending looks set to drop by some 8%, even given the fact that at the same time, households will be stockpiling goods such as food & beverages (share of food in overall consumer spending: 11%) and there will be increased demand for certain health care services.

It can be assumed that materially higher volumes of goods are now being ordered online. According to our estimates, online sales as a proportion of total retail sales will rise sharply from current levels of around a fifth for non-food products and some 3% in the food segment. As the proportion of foreign online retail providers is comparatively high at some 20%, they will automatically account for a growing share of total sales volumes. Conversely, however, it is worth bearing in mind that the restrictions on travel will lead to a marked slump in shopping tourism for a prolonged period, which should actually push up Switzerland's share of total retail to a modest degree, although overall sales will drop substantially.

If our expectation that the coronavirus situation will ease in the course of the year proves correct, we can assume that some of the purchases omitted in the months ahead will merely be postponed and made at a later date. Moreover, as some consumer goods are imported, the impact of the consumer spending recession in Switzerland will be felt abroad. In the particularly cyclical segment of consumer durables, for example, the share represented by imports is estimated at two-thirds.

**What trends to expect in consumer spending after the slump**

To forecast the growth trend in consumer spending after its imminent collapse due to the coronavirus lockdown, it is useful to break down the analysis into two driving factors: the number of consumers (i.e. approximately the number of inhabitants in Switzerland) and per capita consumption. As borders are being closed and new appointments are down, net immigration – and therefore population growth – is likely to slow appreciably. We expect net immigration to amount to 35,000–40,000 for full-year 2020 (down from 53,000 last year). Meanwhile, per capita consumption depends on income (after purchasing power adjustments) and the consumption ratio (proportion of income used for consumer spending). According to our forecasts, nominal wages this year should be 0.5% higher than last year, while thanks to negative inflation of –0.3% real wage growth should reach 0.7% after a decline of 0.4% in 2018 and a marginal increase of 0.1% last year. The loss of income – which will be substantial in some cases – for many self-employed people and temporary wage cuts due to short-time working are not factored into this calculation. Both of these aspects will obviously erode wage growth potential.

In turn, the consumption ratio will probably only decline temporarily and "automatically" due to restricted buying opportunities during the lockdown, but will return to normal levels at a later date. Our analyses show that job security is a crucial determinant of consumer sentiment. At the moment, we do not expect a sharp rise in the unemployment rate (an increase from the current level of 2.3% to 2.9% by the year-end is likely), as short-time working is an effective instrument that can be deployed on the labour market to cushion temporary shocks such as supply disruptions or operating bans.

Overall, while private consumption is likely to recover after the slump in the months ahead, it should recede in annual average terms. This will be the first decline since 1993 and will at least temporarily remove a key pillar of Swiss growth that provided support during the global recession and the euro crisis.

**Government measures will soften the impact of the lockdown**

A deeper recession can therefore only be averted if the coronavirus outbreak is swiftly brought under control and the negative repercussions of a government-imposed lockdown are mitigated. We have already mentioned the importance of short-time working to bolster the economy. Additional measures are being discussed or planned and every instrument should be reviewed in terms of how quickly it can be deployed on a temporary and targeted basis. There is certainly leeway for such moves, even while maintaining a brake on debt. Overall, government spending should rise substantially this year according to our forecasts and provide a welcome contribution to stabilising the economy. If our forecasts prove correct, the slump as a result of coronavirus should be less pronounced and reversed far more quickly than the downturn of 2009 (see chart).

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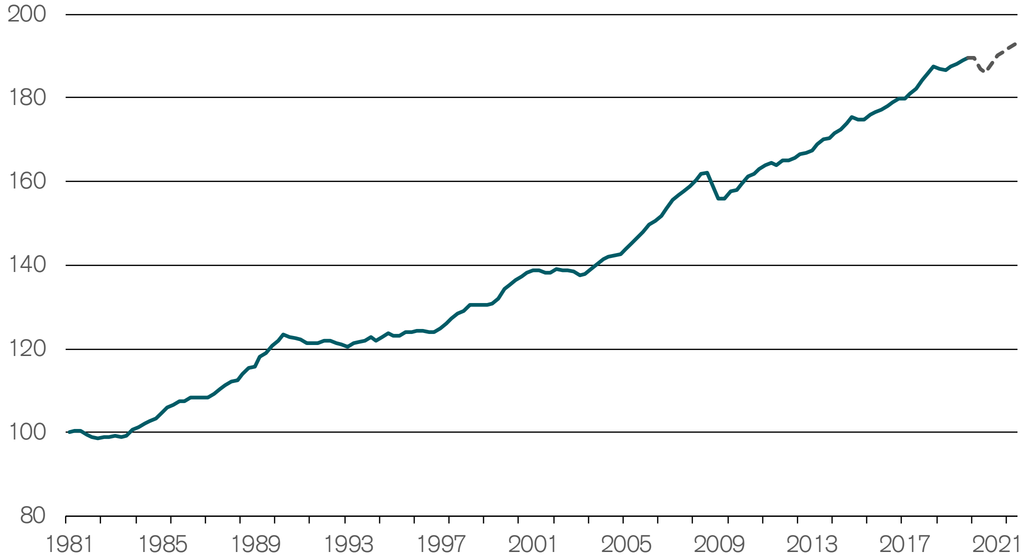
**Historical comparison of coronavirus slump**

GDP, real, index: 1981 Q1 = 100




Source: State Secretariat for Economic Affairs (SECO), Credit Suisse

### Inflation

Due to the recent price slump in the oil market and the appreciation of the franc, the prices of imported goods can be expected to decline sharply, whereas domestic prices are unlikely to increase meaningfully. The trend of declining prices is continuing in the healthcare sector, while the latest reduction in the reference interest rate, which is relevant to the setting of residential rents, could lead to lower rents. We are therefore revising our inflation forecast for 2020 to an average of –0.3% (previously +0.3%). For 2021 we are sticking to our forecast of +0.5% for the time being.

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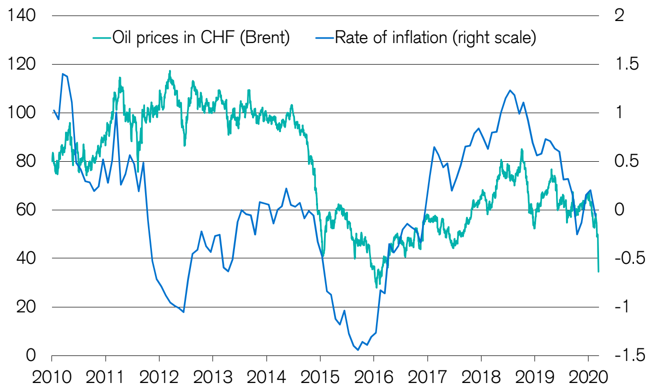
**Lower inflation following oil price decline**

Oil prices in CHF per barrel (Brent) and inflation rate in % (right scale)




Source: Datastream, Credit Suisse

### Labor market

Employment in Switzerland rose by a solid 1.2% in 2019, averaging a new record level of 3,976,200 full-time equivalents for the year as a whole. In view of the current economic uncertainties, we can expect to see a slowdown in the labor market in 2020, although the extent of that slowdown will obviously depend on the duration and severity of the coronavirus outbreak. Resorting to short-time working could help mitigate the negative repercussions for employment of demand and production outages. In addition to industrial companies, service providers (e.g. from the hotel and catering, entertainment, and retail industries) can also be expected to increasingly implement short-time working.

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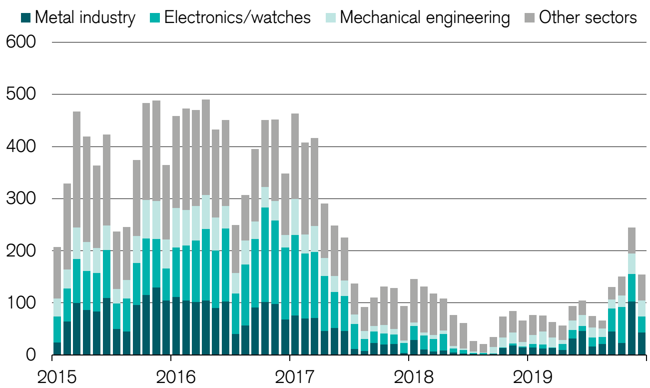
**Short-time working set to increase following coronavirus outbreak**

Number of lost hours, in thousands




Source: State Secretariat for Economic Affairs (SECO), Credit Suisse
Last data point: December 2019

### Immigration

With an estimated positive balance of 53,000 people, the stabilization in immigration recorded in the previous year continued in 2019. Indeed, at 69,000, more people moved to Switzerland for work purposes last year than at any point since 2015, although the numbers of family members joining them in Switzerland proved weaker. This can be viewed as a delayed reaction to the lower immigration rates of previous years. In light of the coronavirus outbreak, the resulting slowdown of the economy and the temporary closing of boarders, we are expecting a slowdown in immigration for 2020 to around 35’000 to 40’000 people. Should the crisis persist for longer, immigration numbers are likely to decline further.

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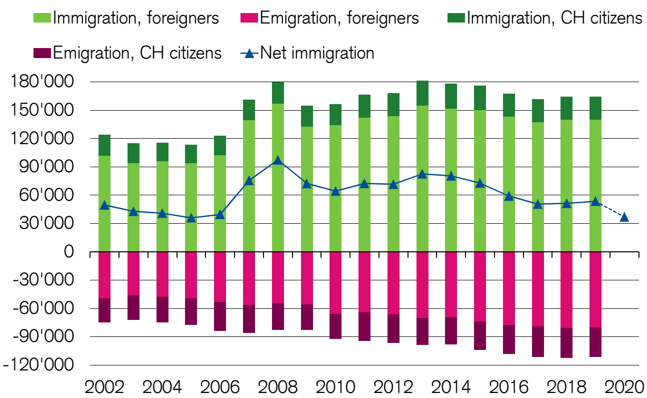
**No new boost to immigration in sight**

Migration of permanent residential population (excluding registry corrections)




Source: State Secretariat for Migration, Swiss Federal Statistical Office, Credit Suisse
2019: estimate/extrapolation; 2020: forecast

# Long-run risks to the Swiss export miracle

**Despite the strength of the franc, Switzerland has regularly recorded balance of trade surpluses over the last 20 years. Exports have benefited heavily during this period not just from growth in the US and China, but also from the boom in the pharma sector. Dependency on the latter has its risks, however.**

### Surplus in goods trade despite franc strength

For many years now, Switzerland has exhibited one of the highest balance of payments surpluses of any country relative to its gross domestic product (GDP). The following trends have become apparent since the financial crisis (see Fig. 1): First, the balance of trade in services relative to GDP was in sharp decline until fairly recently, which is primarily attributable to the challenges faced by the international banking business. Second, the commodities trading area ("merchanting") has broadly stagnated since 2008, which is likely to be the result of lower commodity prices. Third – and most surprisingly – the surplus in goods trading has risen almost incessantly, and this despite the strong (and occasionally dramatic) appreciation of the Swiss franc.

### Marshall-Lerner conditions do not appear to apply

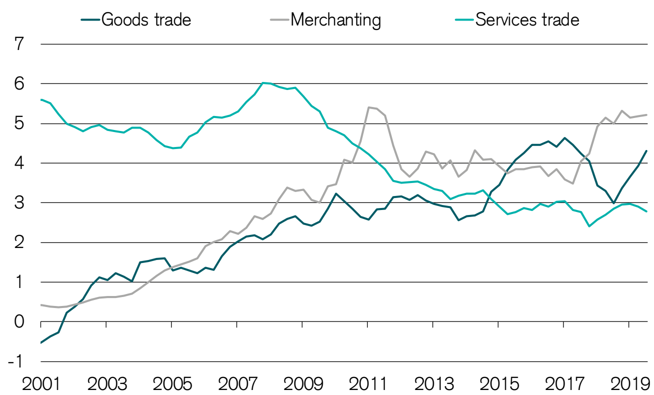
At first glance, the latter phenomenon appears to contradict one of the key premises of international trade theory (the so-called Marshall-Lerner conditions), which is that any appreciation of the domestic currency will weaken the balance of trade, whereas depreciation should strengthen it. However, Switzerland has managed to increase its surplus in the trading of goods sharply over the last two decades or so – above all thanks to an increase in exports. This article explores the question of what lies behind this export miracle, whether it will endure, and where the potential causes of setbacks and disappointments could lie in this area. The conclusions we draw from this in respect of the current turbulence are explained in the "Economy" section (see p. 5).

### Swiss exports ride the globalization trend

However, a comparison of the development of Swiss exports with the development of global trade would appear to call into question the idea that the former represents some sort of extraordinary export miracle: As Figure 2 shows, Swiss exports have for the most part risen more or less in line with global exports. Switzerland has consequently benefited from the boom in global trade and therefore from the general globalization trend of recent decades, albeit not to a disproportionately high degree. Indeed, a straightforward regression analysis also confirms that Swiss exports are primarily driven by growth in global trade, as this coefficient is positive and significant for almost all sectors (see Fig. 3).

**Fig. 1: Increase in surplus in goods trade since 2001**

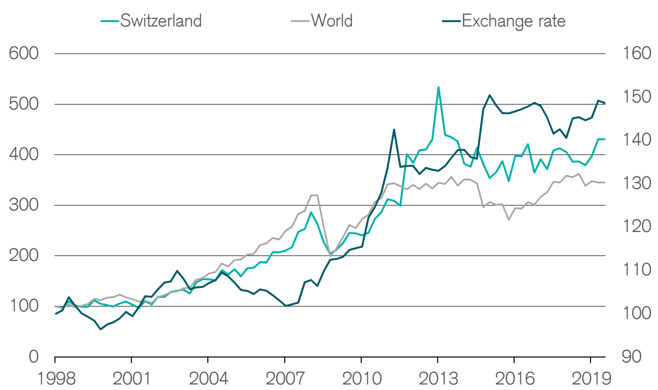
Surplus or deficit in the trading of goods, commodities and services, in % of Swiss GDP, moving annual averages




Source: Datastream, Credit Suisse

**Fig. 2: Swiss exports more than hold up against strong franc**

Value of Swiss and global goods exports and nominal trade-weighted CHF exchange rate, indexed, Q2 1998 = 100




Source: Bloomberg, Credit Suisse

**Growth in exports beyond Europe**

Only in the years 2010 to 2012 a significant deviation from the global trend was evident. Whereas global trade began to stagnate during this period – in all likelihood mainly due to the crisis in the Eurozone – growth in Swiss exports accelerated strikingly, even though at the same time the franc gained significantly in value. As Figure 4 shows, the development of exports to the US, China, and other non-European countries was a key driver of the above-average dynamism of Swiss exports during this period. In addition, a look at the exchange rate coefficients of the individual sectors determined through regression analysis in Figure 3 shows that an appreciation of the franc can actually have positive repercussions for export sales, particularly in the pharma industry – Switzerland's most powerful export sector – but also in the watchmaking and food industries. These are among the sectors benefitting most strongly from growth in global trade, as illustrated by the regression analysis in Figure 3, and clearly appear to have particularly pronounced price-setting power.

**MEM exports susceptible to franc strength**

In order to explain the Swiss export miracle, it is therefore worth having a look at the specific developments and vulnerabilities of individual sectors. In order to analyze sensitivity to changes in demand abroad and to exchange-rate fluctuations in detail, we look at so-called GDP and exchange rate "elasticities" (see box for methodology). According to these analyses, the engineering, electrical and metal (MEM) industry is extremely susceptible to a stronger franc. Accordingly, an appreciation of the franc against the euro, the Polish zloty, and the UK pound impacts negatively on export growth in the corresponding currency areas, for example. By contrast, a change in the value of the franc relative to the US dollar or Chinese renminbi is negligible where MEM exports are concerned. However, the MEM industry currently reacts strongly to economic developments in the US and China, as the corresponding GDP elasticities in Figure 5 are relatively high. To this extent the MEM industry has also been a beneficiary of the increase in demand from the US and China over the years. Accordingly, an economic slowdown in Europe – where both trading volume and GDP elasticities are likewise high – as well as a downturn in the US or China would have a strong impact on the MEM industry.

**Methodology for GDP and exchange rate elasticity / error correction model**

GDP and exchange rate elasticities show the number of percentage points by which export growth changes in response to a single percentage point change in gross domestic product (GDP) abroad or in the exchange rate. Furthermore, in order to be able to distinguish between long-term trends and short-term fluctuations in the level of exports, we also use a so-called error correction model.

**Watch export revenues rise in line with franc**

Swiss watches, which are generally viewed as luxury goods, likewise react sensitively to growth changes abroad. The GDP elasticities of watch industry exports tend to be higher than in other sectors, whereby the highest values of all can be seen in the case of the US and China (see Fig. 6). By contrast, watch exports do not react strongly to changes in the value of the US dollar and the renminbi. Indeed, an appreciation of the Swiss franc tends to drive up watch export revenues even further, whereas exchange-rate fluctuations in the case of other currencies do not appear to have any real effect. In other words, the positive effect of additional revenues as a result of franc strength can (more than) offset the potential negative effect of franc strength on the

**Fig. 3: Pharma and food: growth immune to exchange rate**

Regression analysis: global trade coefficient and trade-weighted CHF exchange rate coefficient, by export sector

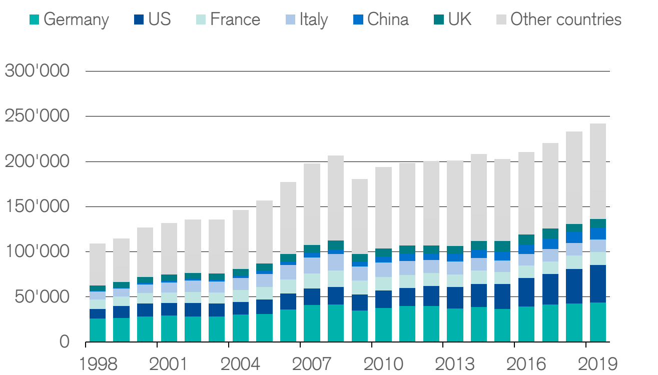
| | Coefficient global trade | Coefficient exchange rate |
|---|---|---|
| Chemicals | 0.14 | -0.19 |
| Electronics | 0.15 | -0.14 |
| Electrical engineering | 0.32 | -0.18 |
| Automotive construction | 0.33 | -0.09 |
| Plastics | 0.27 | -0.18 |
| Food | 0.53 | 0.14 |
| Mechanical engineering | 0.18 | -0.18 |
| Medical technology | 0.60 | -0.02 |
| Measurement and controlling ins | 0.38 | -0.08 |
| Metals | 0.28 | -0.19 |
| Other | 0.35 | -0.04 |
| Paper and printing | 0.09 | -0.52 |
| Pharma | 0.56 | 0.21 |
| Textiles and clothing | 0.07 | -0.17 |
| Watches | 0.38 | 0.11 |
| Total goods exports | 1.18 | 0.54 |

insignificant
significant, |coefficient| < 0.5
significant, |coefficient| > 0.5
significant, value of exports benefits from CHF appreciation

Source: Swiss Federal Customs Administration, Bloomberg, Credit Suisse

**Fig. 4: Export growth above all to the US and more distant countries**

Goods exports, share by export market (in CHF mn)




Source: Swiss Federal Customs Administration, Credit Suisse number of items sold. A particularly striking European market in this respect is the United Kingdom, where watches represent 15% of total Swiss exports and likewise exhibit significant GDP elasticity. The development of Brexit negotiations going forward is therefore important to the watchmaking industry, particularly if UK economic growth is jeopardized as a result. The same would also apply to any economic slowdown in China, Hong Kong, or the US.

**Brexit: Dependency of Swiss goods trade on United Kingdom**

Watches are one of the most important components in Swiss trade with the United Kingdom (accounting for 15% of all exports to that country), together with MEM and automotive products (20%) and pharmaceuticals (27%). At 6% in each case, chemicals and food exports are also not negligible. However, these latter two sectors – just like pharma exports – barely respond to changes in UK GDP growth. By contrast, growth in watch exports slumps by more than two percentage points for each single percentage point decline in UK GDP growth. Within the MEM industry, only mechanical engineering appears to respond sensitively to economic growth. But with a share of 8% of total exports to the United Kingdom, it is nonetheless fairly significant. The GDP elasticity we calculate for mechanical engineering amounts to almost 3 percentage points. To this extent, we would expect an economic slump as a result of Brexit to affect Switzerland's watchmaking and mechanical engineering industries in particular. Together with the chemical sector, these two industries would be the most likely to suffer in the long term from any further appreciation of the franc against sterling.

**Pharma sector a stabilizing factor in turbulent times**

Where pharmaceutical goods are concerned, the dependency on GDP development of individual countries is rather more multifaceted. On the one hand, healthcare provision increases in line with a country's income-generating strength and GDP, an aspect that favors Swiss pharma exports. On the other hand, it is only reasonable to assume that demand for drugs and medical treatments barely reacts to short-term growth weaknesses in GDP. With the assistance of an error correction model (see box for methodology), the export data confirms precisely this: While rises in GDP lead over the long term to greater imports of Swiss pharmaceutical products on the one hand, short-term fluctuations in GDP growth rate have no influence on Swiss pharma exports on the other. In other words, the pharmaceutical industry would appear to be a growth industry that nonetheless acts as a stabilizer of the Swiss economy in economically volatile times.

**Strong franc cannot hold back pharma exports – and possibly even assists them**

In the short term, exchange-rate developments have no impact on Swiss pharma exports. However, they do impact on the long-term level of exports in the case of certain export destinations – such as the US, among others. Here, an appreciation of the franc has the effect of boosting revenues from pharma exports. This would appear to corroborate the theory that the pharmaceutical industry has been a major beneficiary of strong growth in the US and China, at times even benefiting from franc appreciation. However, we believe there is a certain risk in Switzerland's strong dependency on the US market, which accounts for a quarter of all export revenues of the Swiss pharma industry. Relative to GDP, the US spends more on healthcare provision than any other country, and by quite some margin.

**Fig. 5: MEM exports react to GDP growth abroad**

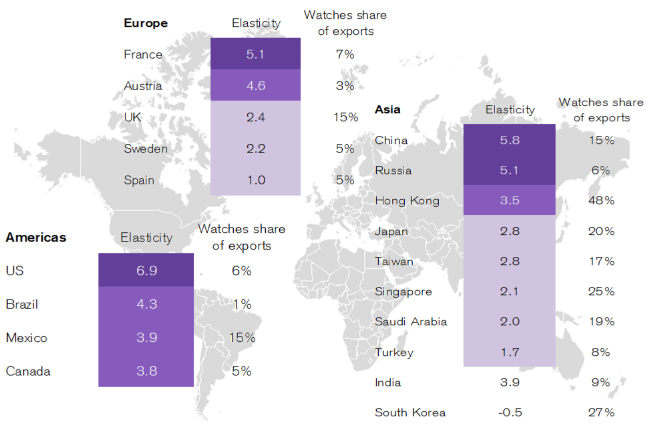
GDP elasticities of MEM exports (2004 – 2019) and MEM exports as a proportion of total exports to the corresponding country, 2019; shaded coefficients are significant

| | Metals | Mechanical Engineering | Electronics | Electrical Engineering | MEM share of exports |
|---|---|---|---|---|---|
| France | 6.2 | 6.0 | 8.7 | 2.7 | 17% |
| Italy | 6.7 | 3.6 | 6.8 | 3.8 | 16% |
| Austria | 4.8 | 5.7 | 3.1 | 2.8 | 27% |
| Germany | 4.6 | 3.7 | 3.8 | 3.0 | 26% |
| Netherlands | 3.9 | 4.2 | 2.7 | 3.9 | 18% |
| Czech Republic | 3.0 | 4.4 | 4.3 | 2.2 | 39% |
| Poland | 1.9 | 2.2 | 19.6 | 2.5 | 33% |
| Belgium | 6.3 | 2.3 | 0.9 | 2.7 | 11% |
| Sweden | 3.4 | 4.2 | 5.5 | -0.2 | 28% |
| Slovenia | 2.0 | 3.7 | 2.0 | 1.8 | 2% |
| Spain | 1.8 | 1.3 | 0.3 | 3.3 | 9% |
| United Kingdom | 1.9 | 2.8 | -2.5 | 0.3 | 15% |
| USA | 6.2 | 5.7 | -1.2 | 4.7 | 12% |
| Mexico | 4.4 | 0.5 | 5.9 | 4.3 | 24% |
| China | 5.3 | 3.9 | -0.1 | 3.1 | 21% |

Source: Swiss Federal Customs Administration, Datastream, Credit Suisse

**Fig. 6: High watch GDP elasticity outside of Europe**

GDP elasticities of watch exports (2004 – 2019) and watch exports as a proportion of total exports to the corresponding country, 2019; shaded coefficients are significant




Source: Swiss Federal Customs Administration, Datastream, Credit Suisse

In the event of the widespread call for reform of the healthcare system leading to concrete measures following the presidential elections in November 2020, this would likely have consequences for the Swiss pharma exporters.

**Economic slowdowns hurt chemical exporters**

Although the chemical sector is often associated with the pharma industry, exports of the former are much less resistant to changes in GDP abroad than exports of the latter. The most important export market for the Swiss chemicals industry is Europe. Almost a third of this sector's exports go to Switzerland's neighboring countries, where our analysis shows that they react directly to changes in local GDP. To this extent, they are more susceptible to an economic slowdown in Switzerland's neighboring countries than pharma exports. Chemical exports generally appear to react only sporadically to exchange rate movements. At the most, an appreciation of the Swiss franc has a counterproductive impact and tends to reduce chemical export revenues. This is a sign that additional revenues as a result of the strong franc cannot compensate for the decline in demand triggered by price pressure.

**Growth of middle class in emerging markets a growth opportunity for the pharma industry**

These analysis results lead us to the following findings. First, the high proportion of all Swiss goods exports accounted for by pharma products has a stabilizing impact on Swiss exports during economic downturns abroad (see Fig. 7). The more moderate level of overall global economic growth we are likely to see – also for demographic reasons – over the next five years need not necessarily undermine the pharma boom. It could persist as long as the demand for pharma goods in China and other emerging markets continues to rise due to growth of the middle class as a proportion of the overall population. However, there are still certain risks from Switzerland's heavy dependency on the pharma sector. On the one hand, a major reform of the US healthcare system could change business parameters for the worse in what is the key sales market for pharma products. On the other hand, international pharma companies look at not just the availability of specialist labor but also tax advantages when choosing where to locate themselves – and while the latter factor would appear secure in Basel for now, it may not be forever, and is certainly not set in stone.

**Weak European economy holds back MEM, watch, and chemicals exports**

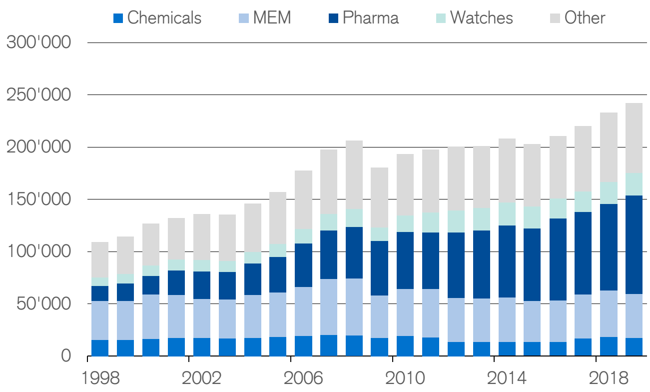
A second and rather contrasting finding is that weaker global economic growth in all likelihood weighs on exports from the MEM, watchmaking, and chemical sectors. The heavy dependency of the Swiss MEM industry on European manufacturing makes it reasonable to expect that any persistent European growth weakness could have a more damaging effect on export developments, particularly if the euro itself were to remain weak (see Fig. 8). By contrast, watch exports – just like pharma "luxury goods" – can benefit from growing prosperity in emerging markets. However, growth could be limited by fierce competition, a certain degree of saturation, or changes in fashion trends (e.g. smartwatches).

**Pharma sector accounts for just 1% of total Swiss employment**

Third, any overarching economic view should also take into account the employment component. The MEM industry is ultimately a key pillar of the Swiss economy insofar as it still accounts for more than 5% of the active working population. Two decades ago, the equivalent figure stood at just under 8% (see Fig. 9). Over the last few years, the Swiss labor market has benefited little from the boom in pharma exports.

**Fig. 7: Proportion of pharma exports has trebled; MEM share has halved**

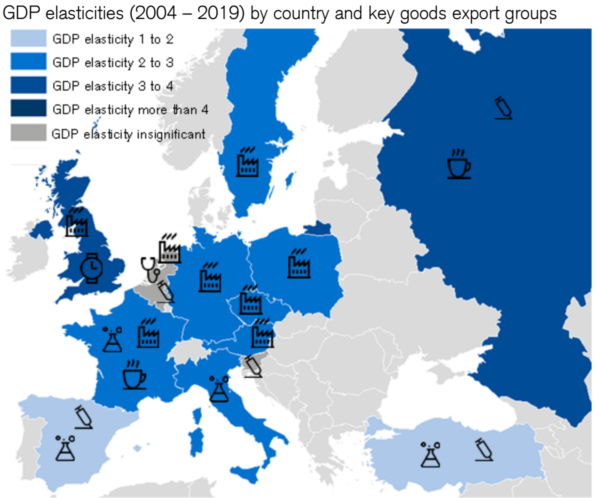
Swiss goods exports, proportional breakdown by sector (in CHF mn)




Source: Swiss Federal Customs Administration, Credit Suisse

**Fig. 8: European market dominates MEM exports**

GDP elasticities (2004 – 2019) by country and key goods export groups




Source: Swiss Federal Customs Administration, Datastream, Credit Suisse

Indeed, currently only just over 1% of Swiss workers are active in the pharma sector. This share has risen only marginally since 1998, when it stood at 0.7%, and hence exhibits little correlation with the strong growth of pharma exports. From the perspective of the Swiss economy as a whole, therefore, while pharma industry makes a valuable contribution to the national balance of trade, it is of only limited significance for the labor market and consumer spending given its limited share of the working population. This is quite unlike the MEM industry: The knock-on effect of any economic slowdown in Europe or the US could also have a major impact on employment and consumer sentiment in Switzerland in this sector.

**Regional diversification of export sectors needed**

Looking to the future, it therefore appears all the more important to us that Swiss exports – if possible – achieve greater regional diversification in order to continue to flourish and reduce their dependency on a domestic continent where growth is only weak. A slowdown in the growth trend in the US, which is likewise to be expected, makes diversification of this kind even more pressing (see Fig. 10). Risks can also be reduced through the pursuit of a strategy to increase quality, i.e. by increasing the uniqueness of Swiss exports, particularly as goods that benefit from unique selling points are less dependent on the exchange rate. Last but not least, service exports could also in principle reduce Switzerland's dependency on goods exports and therefore on the pharma sector. However, international competitive pressures are extremely high here too.

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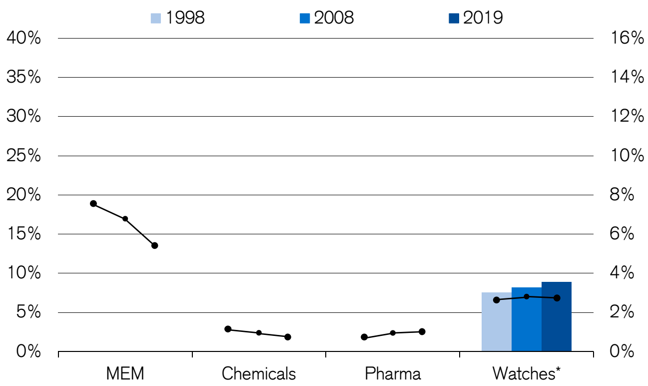
**Fig. 9: Just 1% of Swiss workers active in pharma sector**

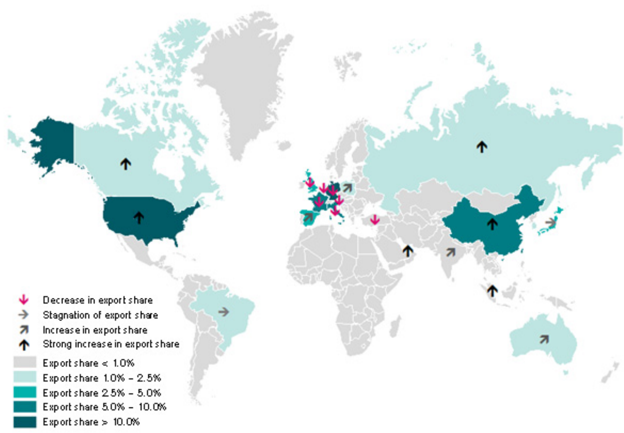
Goods exports, proportion by sector (left scale); employment, proportion by sector (right scale), since 1998




Source: Swiss Federal Customs Administration, Swiss Federal Statistical Office, Credit Suisse
*approximation

**Fig. 10: Europe loses some of its importance for Swiss exports**

Proportion of Swiss goods exports by country and development since 1998




Source: Swiss Federal Customs Administration, Credit Suisse

# Stronger focus on inflation to raise policy acceptance

**The European Central Bank (ECB) and the US Federal Reserve (Fed) are reviewing their monetary policy strategy this year. We argue that the Swiss National Bank (SNB) should take this opportunity to refocus its communication strategy on its inflation objective rather than on the valuation of the CHF.**

**Higher inflation targets in the USA and the Eurozone would raise the pressure on the SNB**

The Fed and ECB are currently both conducting a thorough review of their monetary policy strategies and will announce their findings over the course of the year. The reasons for these reviews are similar in both cases; both central banks have missed their inflation objective for a prolonged period of time, which has led to a decline in inflation expectations, and therefore in the level of interest rates. The low level of interest rates has reduced the room for maneuver of both central banks if they need to cut their policy rate further. The Fed and ECB are reviewing their inflation and possibly other objectives, as well as the monetary policy tools they need to reach them. For the SNB, the review of the inflation objectives seems particularly relevant. Indeed, the Fed has signaled that it will probably change its inflation target to compensate for a long period of below-target inflation with a period of above-target inflation. Such a change would imply a looser inflation target than the current "symmetric" target of 2%. The ECB has not yet suggested how it might change its current inflation target of "below, but close to 2%". It is, however, also quite likely that the ECB will revise its inflation target "up" to some extent, for example, by tolerating an inflation rate that is temporarily above 2%. With a "positive inflation rate of less than 2% per annum," the inflation objective of the SNB is already conservative in comparison to both the Fed and the ECB. If both the Fed and the ECB move to a higher inflation target, the SNB's inflation objective will be perceived as even more conservative. Considering that lower inflation in Switzerland has historically been one of the drivers of the Swiss franc's appreciation trend, the Fed and ECB reviews may therefore fuel appreciation pressures further.

**A precise inflation target is not realistic in Switzerland**

To avoid this development, we believe that the SNB should try to strengthen its commitment to a positive inflation rate. That said, as a small open economy, Switzerland is more exposed to external shocks than the USA or the Eurozone. Most importantly, as has become particularly clear since the financial crisis, negative economic or political shocks tend to have a stronger deflationary effect on the Swiss economy due to the safe haven status of the CHF. This vulnerability implies that it is – a priori - much harder for the SNB to achieve any specific macro-economic policy target. It is therefore understandable and logical that the SNB has tended to choose "fuzzier" targets than the other, large central banks. Hence, setting a very precise inflation target is unrealistic. Nevertheless, if the SNB communicated more clearly that it is determined to achieve a positive inflation well above zero and similar to inflation rates targeted by the major central banks, it could be more able to counteract deflationary risks. To do so, it will also have to convince its Swiss "audience" why a positive inflation is a desirable outcome, not just for the USA or the Eurozone, but also for Switzerland.

**Higher inflation would eventually allow for a policy rate hike**

In Switzerland, a key argument must also be that positive interest rates can only be achieved if inflation is well above zero. Inflation strongly determines the level of nominal interest rates, defined as the sum of real interest rates and an inflation premium. The higher the inflation premium, the higher nominal interest rates should be. Inflation has been averaging 0% since 2009 in Switzerland and the inflation premium is arguably very low (or even potentially negative); this has probably contributed to the decline in nominal interest rates in Switzerland. Persistently higher inflation would likely boost the nominal interest rate and could eventually provide some leeway for the policy rate to normalize. The other key argument in favor of positive inflation is that it makes markets for goods, services and labor function better than in an environment of lower or even negative inflation.

**Assessing the valuation of the CHF is difficult, opening the door to critics**

The Fed and ECB reviews also provide an opportunity to the SNB to clarify its second "unofficial" objective of a not too expensive CHF. A less expensive CHF by itself would contribute to higher inflation. In our view, a more explicit link between deflationary risks and the strength of the CHF could also raise the acceptance for foreign currency purchases. The discussion of Swiss monetary policy is increasingly focusing on the degree of overvaluation of the CHF, which is uncertain and can only be estimated with models. If foreign governments and monetary policy authorities as well as financial market participants begin to doubt that the CHF is overvalued, it will be increasingly difficult for the SNB to dampen appreciation pressures via foreign exchange market interventions. On the other hand, inflation is "observable" and undeniably low in Switzerland. Therefore, refocusing the policy communication on that objective, at a time when reflation policies are the top priority of central banks in other industrialized countries, would certainly be helpful in raising the acceptance of the current policy, and of foreign currency purchases in particular.

**Forward guidance based on inflation forecasts could be strengthen**

A better forward guidance could also contribute to refocusing the communication on the inflation objective. The conditional inflation forecast of the SNB (i.e. the inflation forecast of the SNB conditional on an unchanged policy rate) is the main channel that the SNB uses to indicate the future course of its policy. Until June 2011, the SNB commented on the implications of its inflation forecast for monetary policy. Whenever the conditional inflation forecast suggested that inflation would rise above 2% over the medium-term, the SNB usually warned that the monetary policy stance could not be maintained over that horizon. However, since the summer of 2011 and the focus on the exchange rate, the SNB has not explicitly formulated what its conditional inflation forecast implies for monetary policy. In our view, as the most recent conditional inflation forecast shows that inflation is not expected to rise above 2% over the medium term (and this has been the case since December 2018), the SNB should emphasize the necessity to keep the policy rate at least as low as it is currently over the forecast horizon. In addition, we believe that the SNB should declare that it would use all the instruments at its disposal as long as necessary, including foreign currency purchases, to boost inflation.

**A reaction to the Fed and ECB reviews appear necessary**

To conclude, we believe that the SNB should use the opportunity of the Fed and ECB reviews to strengthen its commitment to a clearly positive inflation rate similar to levels in other key markets, and it should refocus its communication on the inflation objective. Not reacting to the reviews risks raising appreciation pressure on the CHF. In addition, as the overvaluation of the CHF has increasingly been called into question, shifting the focus of the SNB communication to inflation, which has undeniably been very low – too low – for long in Switzerland, would help raise the acceptance of the current monetary policy stance.

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### Capital flows

Between 2008 and 2014, foreign investors (excluding banks) deposited around CHF 300 bn with banks in Switzerland, reflecting demand for a safe haven. However, since the introduction of the negative interest rate, capital inflows from this source have come to a halt, even reversing since 2017, notwithstanding uncertainty related to the Brexit referendum and the 2017 French presidential election. The trend since 2015 therefore suggests that the appreciation of the CHF since mid-2018 is not due to foreign investors "parking" cash with banks in Switzerland.

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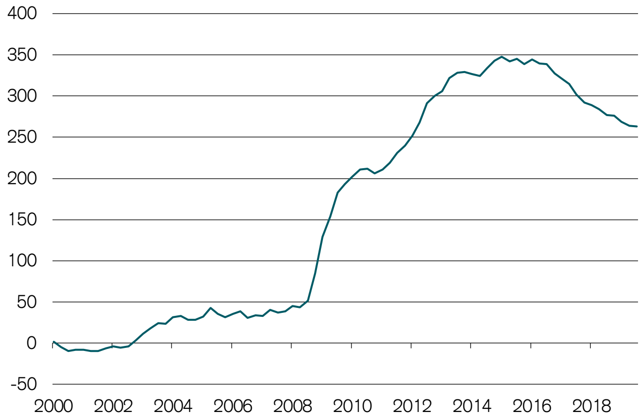
### Foreign investors have pulled cash out of Switzerland

Cumulative capital inflows from foreign investors (excl. banks) in bank deposits in Switzerland, in CHF bn




Source: SNB, Credit Suisse

### Banks' sight deposits with the SNB

Already since 1 November 2019, a smaller portion of the sight deposit balances has been subject to the negative rate. The SNB increased its so-called "exemption threshold," exempting an additional CHF 111 billion of domestic banks' deposits held with the SNB from negative interest, according to our estimates. From 1 April, the "exemption threshold" will be increased again, hence exempting an additional CHF 85 billion from the negative rate. We estimate that these measures will reduce the cost of the negative deposit rate on domestic banks by up to CHF 1.5 bn annually.

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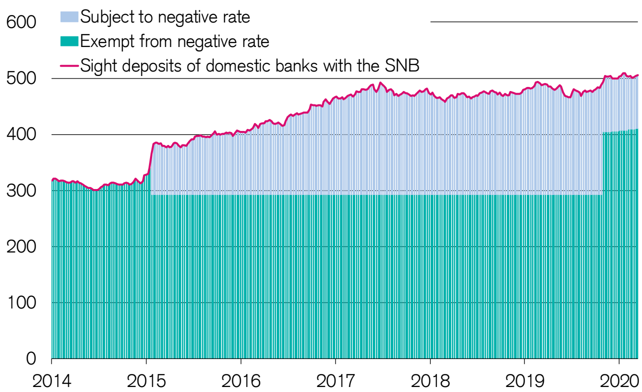
### Still around CHF 100 bn subject to the negative rate

Domestic banks' sight deposits with the SNB, in CHF bn




Source: SNB, Credit Suisse

### Foreign currency interventions

In our view, foreign currency purchases remain the most likely SNB reaction to mounting appreciation pressures on the CHF. We do not believe that the addition of Switzerland to the US Treasury's "Monitoring List" of potential currency manipulators will prevent the SNB from intervening in the foreign exchange market. The US Treasury does formally allow some foreign currency interventions, so long as they do not exceed 2% of GDP over a 6-month period. However, the SNB will most likely exceed this threshold in 2020.

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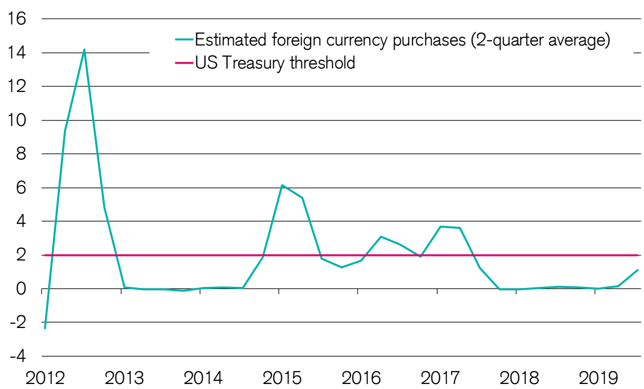
### Foreign currency purchases likely to exceed 2% of GDP

In % of GDP




Source: Datastream, Credit Suisse

### Owner-occupied housing

The still fairly scarce supply of residential property is reflected in price development. Last year, prices in the mid-range segment rose by 2.1% for condominiums and 2.4% for single-family homes. In both segments, however, price growth has lost some of its momentum recently, which we view as consolidation of the previous, somewhat excessive increase in prices. With a few exceptions, property prices rose last year in almost every region.

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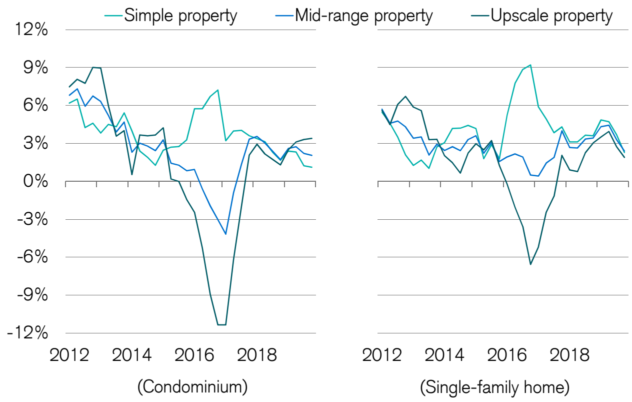
**Moderate growth of residential property prices**

Annual growth rates by price segment




Source: Wüest Partner; last data point: Q4 2019

### Rental apartments

In many Swiss regions, apartment seekers can currently choose from a rich spectrum of properties. At the end of 2019, a high 5.3% of the rental apartment inventory across Switzerland was on the market – with this figure considerably higher in some areas of the Mittelland, home to many rural and periurban municipalities. Home hunters can afford to take their time in these regions, where rental apartments are on average advertised for 40 days, 50 days, or even more. By contrast, in urban centers such as Zurich, Geneva, and Zug, advertisements are on average withdrawn from circulation after less than 25 days.

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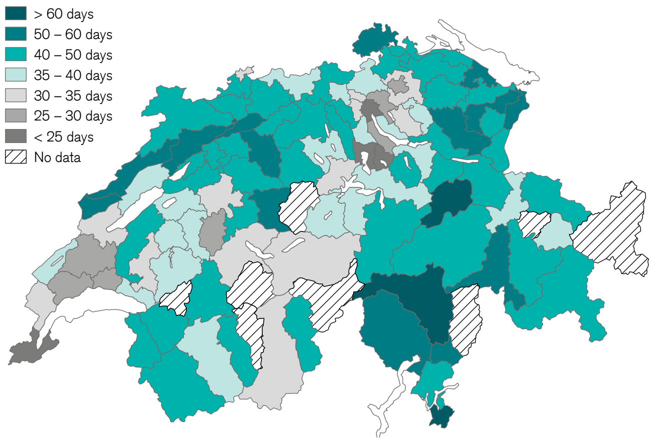
**Patience required when marketing**

Duration of advertising for apartments on the market, 2019




Source: Meta-Sys AG, Credit Suisse, Geostat; last data point: Q4 2019

### Office property

The higher demand for office space in recent years has impacted positively on rental prices. Following a prolonged period of sideways movement, office rents recorded a rise in 2019 in the regions of Bern (+7.6%), Basel (+7.5%), and the city of Zurich (+5.8%). A trend reversal is likewise discernible in the major urban centers of French-speaking Switzerland, where office rents recorded a sharp decline between 2013 and 2018: Last year, rents increased by 7.2% in the city of Geneva and by 4.0% in the city of Lausanne.

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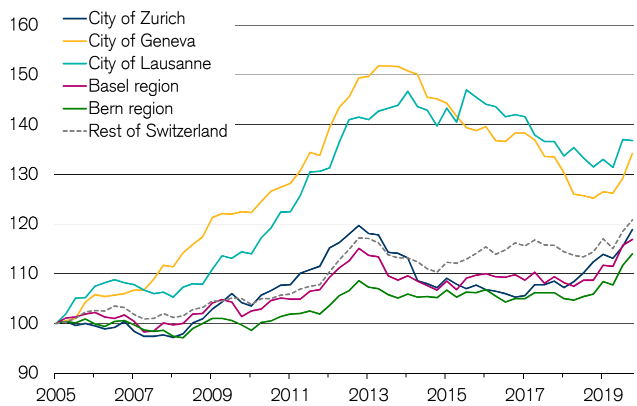
**Reversal of trend in regional rents**

Hedonic rental price index on the basis of signed contracts, index: 2005 = 100




Source: Wüest Partner, Credit Suisse; last date point: Q4 2019

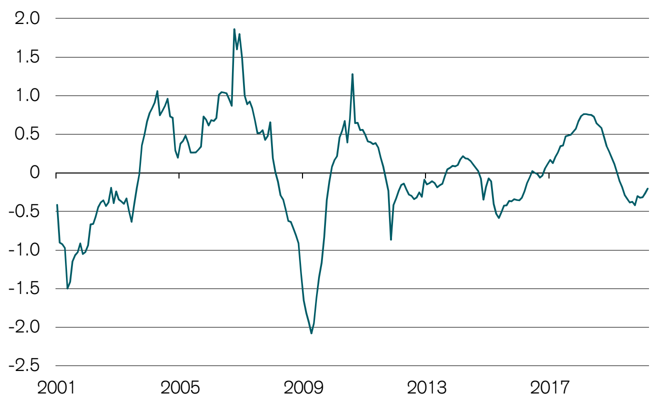
# Credit Suisse Leading Indicators

#### Purchasing Managers' Index (PMI)

Purchasing managers stand at the beginning of the production process. The PMI uses this forward-looking feature to forecast the level of economic activity. The index is based on a monthly survey conducted by procure.ch, the industry body for purchasing and supply management. Purchasing managers respond to eight questions on output, backlog of orders, purchasing volumes, purchase price, delivery times, stocks of purchases, stocks of finished goods, and employment. They indicate whether activity levels are higher, the same, or lower than in the preceding month. The percentage share of responses stating "higher" and "no change" are used to calculate the sub-indices, though only half of the "no change" share of responses is included. The PMI lies between 0 and 100, with a figure of more than 50 indicating an expansion of activity compared with the previous month.

#### Industrial Activity

PMI index > 50 = growth




Source: procure.ch, Credit Suisse

#### Credit Suisse Export Barometer

The Credit Suisse Export Barometer takes as its basis the dependence of Swiss exports on foreign export markets. In constructing the export barometer, we have drawn together important leading industry indicators in Switzerland's 28 most important export markets. The values of these leading indicators are weighted on the basis of the share of exports that goes to each country. The export barometer consolidates this information to produce a single indicator. Since the values in question are standardized, the export barometer is calibrated in standard deviations. The zero line corresponds to the growth threshold. The long-term average growth of Swiss exports of approximately 5% is at 1.

#### Exports

In standard deviation, values > 0 = growth

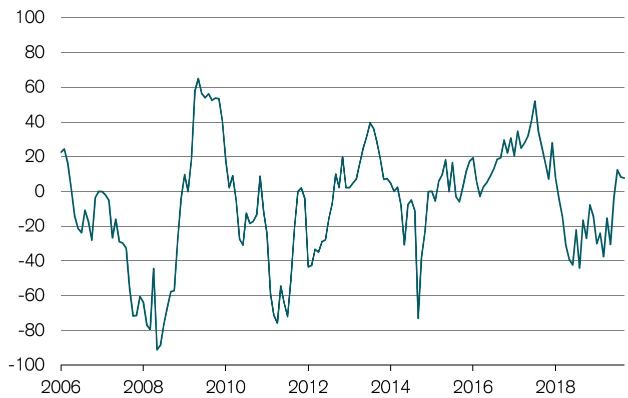

Source: PMIPremium, Credit Suisse

#### CS CFA Society Switzerland Index

Financial analysts have their finger on the pulse of the economy. Since 2017, we have been conducting a monthly survey of financial analysts jointly with CFA Society Switzerland under the heading Financial Market Test Switzerland[1]. Analysts are questioned not only about their assessment of the current and future economic situation as well as the rate of inflation but also about financial market issues such as equity market performance and interest rate forecasts. The CS CFA Society Switzerland Index represents the balance of expectations regarding the development of Swiss economic activity over the coming six months.

#### Economic Activity

Balance of expectations, values > 0 = growth




Source: CFA Society Switzerland, Credit Suisse

[1] Published as the Credit Suisse ZEW Index from 2006 until 2016

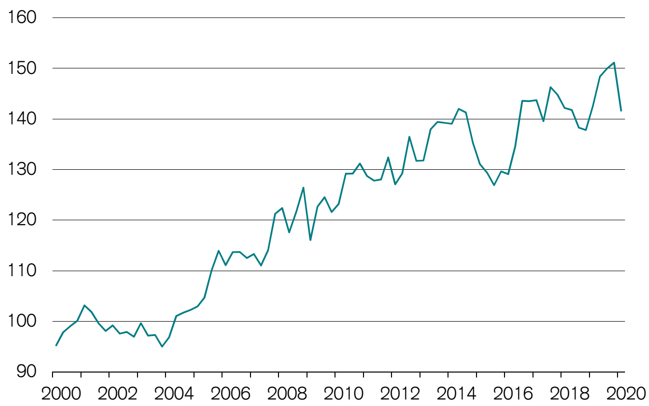
# Credit Suisse Leading Indicators

### Swiss Construction Index

The Swiss Construction Index is published once a quarter jointly by Credit Suisse and the Swiss Contractors' Association (SCA). It serves as a leading indicator for the state of Switzerland's construction sector by forecasting the volume of work in the core construction business in the coming quarter. The indicator is calculated by Credit Suisse and is based mainly on a quarterly survey conducted by the SCA among its members. Additional data is provided by the Swiss Federal Statistical Office and Baublatt. The Construction Index was launched in the first quarter of 1996.

**Construction Industry Climate**

1st quarter 1996 = 100



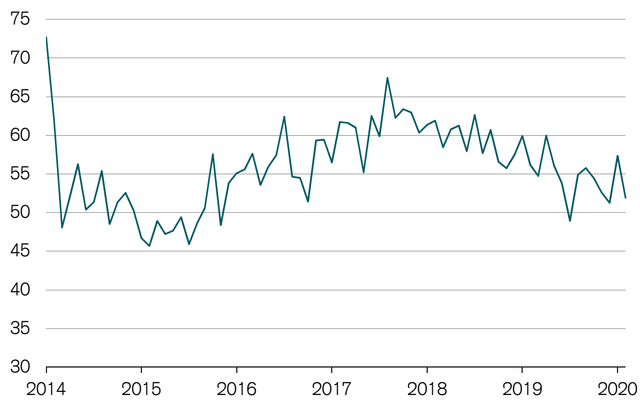

Source: Swiss Contractor's Association, Credit Suisse

### PMI Services

Procure.ch, the professional association for purchasing and supply management and Credit Suisse launched a PMI for the services sector in 2014. The Services PMI is structured in exactly the same way as its industry counterpart. Values over 50.0 points mean expansion. It is based on a survey of purchasing managers from Swiss service providers. There are six subcomponents: type of business, new orders, order book, purchasing prices, sales prices and number of employees.

**Activity in the services sector**

PMI Services index > 50 = growth

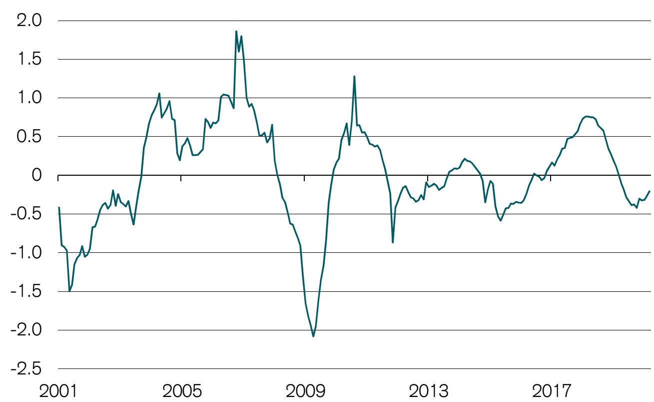



Source: procure.ch, Credit Suisse

### Macro Momentum Indicator

The Credit Suisse Macro Momentum Indicator (MMI) condenses the current performance of key Swiss economic data to a single figure. Data from economic surveys, consumption, the labor market, lending and the export economy are used to calculate a standardized momentum that is then weighted with the applicable correlation to GDP development. Values above (below) zero point toward an acceleration (slowdown) of the Swiss economy in the last three months compared with the past six months.

**Economic Activity**




Source: Datastream, Credit Suisse

# Forecasts and Indicators

### Forecasts for the Swiss Economy

| | 2020P | 2020P | 2020P | 2020P | 2021P | 2021P | 2021P | 2021P | 2020P | 2021P |
|---|---|---|---|---|---|---|---|---|---|---|
| | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | | |
| GDP (YoY, in %) | 1.1 | -0.6 | -1.5 | -0.7 | 0.3 | 2.2 | 3.2 | 2.5 | -0.5 | 2.0 |
| Consumer spending | 0.5 | -10.0 | 0.0 | 5.8 | 2.0 | 2.0 | 2.0 | 2.0 | -0.9 | 2.0 |
| Government expenditure | 3.0 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | 2.0 |
| Gross capital investment | -0.6 | -0.7 | -0.8 | -0.7 | 2.2 | 2.2 | 2.2 | 2.2 | -0.7 | 2.2 |
| Construction investment | -0.5 | -0.5 | -0.5 | -0.5 | 0.7 | 0.7 | 0.7 | 0.7 | -0.5 | 0.7 |
| Investment in plant and equipment | -1.0 | -1.0 | -1.0 | -1.0 | 3.0 | 3.0 | 3.0 | 3.0 | -1.0 | 3.0 |
| Exports (goods and services) | -1.0 | -1.0 | -1.0 | -1.0 | 5.0 | 5.0 | 5.0 | 5.0 | -1.0 | 5.0 |
| Imports (goods and services) | -0.5 | -0.5 | -0.5 | -0.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | 0.0 |
| Inflation (in %) | -0.1 | -0.6 | -0.4 | -0.2 | 0.1 | 0.6 | 0.6 | 0.5 | -0.3 | 0.5 |
| Unemployment (in %) | 2.3 | 2.4 | 2.6 | 2.9 | 3.1 | 3.0 | 2.9 | 2.7 | 2.5 | 2.9 |
| Employment growth FTEs (YoY, in %) | 0.5 | 0.0 | -1.0 | -1.3 | -0.2 | 0.2 | 0.8 | 1.2 | -0.5 | 0.5 |
| Net immigration (in thousands) | | | | | | | | | 37 | |
| Nominal wage growth (YoY, in %) | | | | | | | | | 0.5 | 0.1 |
| Public debt (in % of GDP) | | | | | | | | | -0.5 | 2.0 |

Source: Federal Statistics Office, State Secretariat for Economic Affairs SECO, Credit Suisse

### Interest Rates and Monetary Policy Data

| | Current | 3-month | 12-month | | Current | Prev. mth. | Prev. year |
|---|---|---|---|---|---|---|---|
| SNB target range (in %) | -0.75 | -0.75 | -0.75 | M0 money supply (CHF bn) | 562.7 | 568.4 | 548.0 |
| 10-year government bond yields (in %) | -0.50 | -0.8 | -0.6 | M1 money supply (%, YoY) | 5.1 | 5.2 | 6.9 |
| | | | | M2 money supply (%, YoY) | 3.6 | 3.6 | 3.7 |
| | | | | M3 money supply (%, YoY) | 3.5 | 3.6 | 3.3 |
| | | | | Foreign currency reserves (CHF bn) | 788.0 | 767.7 | 787.4 |

Source: Datastream, Bloomberg, Credit Suisse

# Important Information

This report represents the views of the Investment Strategy Department of CS and has not been prepared in accordance with the legal requirements designed to promote the independence of investment research. It is not a product of the Credit Suisse Research Department even if it references published research recommendations. CS has policies in place to manage conflicts of interest including policies relating to dealing ahead of the dissemination of investment research. These policies do not apply to the views of Investment Strategists contained in this report.

# Risk warning

Every investment involves risk, especially with regard to fluctuations in value and return. If an investment is denominated in a currency other than your base currency, changes in the rate of exchange may have an adverse effect on value, price or income.

For a discussion of the risks of investing in the securities mentioned in this document, please refer to the following Internet link:
https://investment.credit-suisse.com/gr/riskdisclosure/

This document may include information on investments that involve special risks. You should seek the advice of your independent financial advisor prior to taking any investment decisions based on this document or for any necessary explanation of its contents. Further information is also available in the information brochure "Special Risks in Securities Trading" available from the Swiss Bankers Association.

**Past performance is not an indicator of future performance. Performance can be affected by commissions, fees or other charges as well as exchange rate fluctuations.**

**Financial market risks**
Historical returns and financial market scenarios are no reliable indicators of future performance. The price and value of investments mentioned and any income that might accrue could fall or rise or fluctuate. Past performance is not a guide to future performance. If an investment is denominated in a currency other than your base currency, changes in the rate of exchange may have an adverse effect on value, price or income. You should consult with such advisor(s) as you consider necessary to assist you in making these determinations.

Investments may have no public market or only a restricted secondary market. Where a secondary market exists, it is not possible to predict the price at which investments will trade in the market or whether such market will be liquid or illiquid.

**Emerging** markets
Where this document relates to emerging markets, you should be aware that there are uncertainties and risks associated with investments and transactions in various types of investments of, or related or linked to, issuers and obligors incorporated, based or principally engaged in business in emerging markets countries. Investments related to emerging markets countries may be considered speculative, and their prices will be much more volatile than those in the more developed countries of the world. Investments in emerging markets investments should be made only by sophisticated investors or experienced professionals who have independent knowledge of the relevant markets, are able to consider and weigh the various risks presented by such investments, and have the financial resources necessary to bear the substantial risk of loss of investment in such investments. It is your responsibility to manage the risks which arise as a result of investing in emerging markets investments and the allocation of assets in your portfolio. You should seek advice from your own advisers with regard to the various risks and factors to be considered when investing in an emerging markets investment.

**Alternative investments**
Hedge funds are not subject to the numerous investor protection regulations that apply to regulated authorized collective investments and hedge fund managers are largely unregulated. Hedge funds are not limited to any particular investment discipline or trading strategy, and seek to profit in all kinds of markets by using leverage, derivatives, and complex speculative investment strategies that may increase the risk of investment loss.

Commodity transactions carry a high degree of risk, including the loss of the entire investment, and may not be suitable for many private investors. The performance of such investments depends on unpredictable factors such as natural catastrophes, climate influences, hauling capacities, political unrest, seasonal fluctuations and strong influences of rolling-forward, particularly in futures and indices.

Investors in real estate are exposed to liquidity, foreign currency and other risks, including cyclical risk, rental and local market risk as well as environmental risk, and changes to the legal situation.

**Private Equity**
Private Equity (hereafter "PE") means private equity capital investment in companies that are not traded publicly (i.e. are not listed on a stock exchange), they are complex, usually illiquid and long-lasting. Investments in a PE fund generally involve a significant degree of financial and/or business risk. Investments in private equity funds are not principal-protected nor guaranteed. Investors will be required to meet capital calls of investments over an extended period of time. Failure to do so may traditionally result in the forfeiture of a portion or the entirety of the capital account, forego any future income or gains on investments made prior to such default and among other things, lose any rights to participate in future investments or forced to sell their investments at a very low price, much lower than secondary market valuations. Companies or funds may be highly leveraged and therefore may be more sensitive to adverse business and/or financial developments or economic factors. Such investments may face intense competition, changing business or economic conditions or other developments that may adversely affect their performance.

**Interest rate and credit risks**
The retention of value of a bond is dependent on the creditworthiness of the Issuer and/or Guarantor (as applicable), which may change over the term of the bond. In the event of default by the Issuer and/or Guarantor of the bond, the bond or any income derived from it is not guaranteed and you may get back none of, or less than, what was originally invested.

# Investment Strategy Department

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