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1/2020 March

SCHWEIZERISCHE NATIONALBANK
BANQUE NATIONALE SUISSE
BANCA NAZIONALE SVIZZERA
BANCA NAZIUNALA SVIZRA
SWISS NATIONAL BANK



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Quarterly Bulletin
Volume 38

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Monetary policy report

Report for the attention of the Governing Board of the Swiss National Bank for its quarterly assessment of March 2020

The report describes economic and monetary developments in Switzerland and explains the inflation forecast. It shows how the SNB views the economic situation and the implications for monetary policy it draws from this assessment. The first section ('Monetary policy decision of 19 March 2020') is an excerpt from the press release published following the assessment.

This report is based on the data and information available as at 19 March 2020. Unless otherwise stated, all rates of change from the previous period are based on seasonally adjusted data and are annualised.

1 Monetary policy decision of 19 March 2020

Swiss National Bank maintains expansionary monetary policy, raises negative interest exemption threshold, and is examining additional steps

Coronavirus is posing exceptionally large challenges for Switzerland, both socially and economically. Uncertainty has risen considerably worldwide, and the outlook both for the global economy and for Switzerland has worsened markedly. The Swiss franc is even more highly valued, and the world's financial markets are under strong pressure.

In these exceptional circumstances, the SNB's expansionary monetary policy is more necessary than ever for ensuring appropriate monetary conditions in Switzerland. It is keeping the SNB policy rate and interest on sight deposits at the SNB at -0.75% . The SNB is intervening more strongly in the foreign exchange market to contribute to the stabilisation of the situation. In so doing, it takes the overall exchange rate situation into account. Negative interest and interventions are necessary to reduce the attractiveness of Swiss franc investments and thus counteract the upward pressure on the currency.

The SNB is also working closely with the Federal Council with the aim of providing the best possible support to the economy.

The Swiss financial system has sufficient liquidity. The SNB will take additional steps to ensure liquidity as necessary. It is also providing liquidity as part of the

extended swap arrangements with other central banks, particularly in US dollars.

Banks' actions will play a key role in economic developments in Switzerland, especially in the near term. To strengthen the banks in this role, the SNB is raising the exemption threshold as of 1 April 2020, thus reducing the negative interest burden on the banking system. The threshold factor will increase from 25 to 30.

The banks have built up substantial capital and liquidity buffers in recent years. They are thus also equipped for difficult situations affecting the economy as a whole. With a view to further increasing the banks' room for manoeuvre, the SNB is examining whether a relaxation of the countercyclical capital buffer would be possible despite the risks on the mortgage and real estate markets.

In the current situation, it is extremely difficult to assess the economic outlook, and the forecasts are subject to an unusually high level of uncertainty. This is the case for growth and inflation alike.

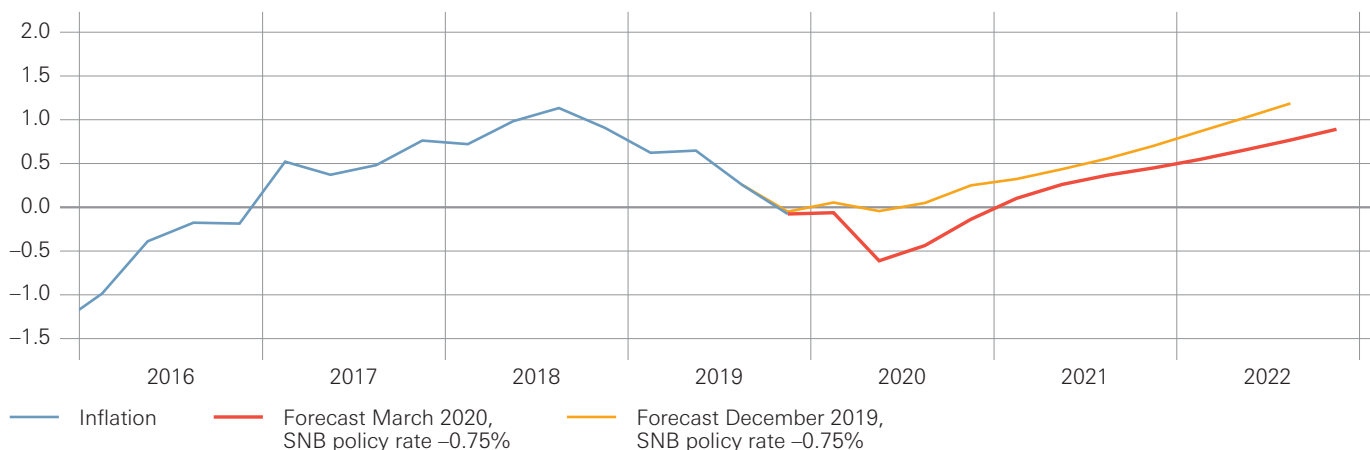
The new conditional inflation forecast is lower than in December (cf. chart 1.1). This is primarily due to lower oil prices, significantly weaker growth prospects and the stronger Swiss franc. The forecast for the current year is slightly in negative territory at -0.3% . The inflation rate is likely to be slightly positive in 2021 at 0.3% , before rising to 0.7% in 2022 (cf. table 1.1). The conditional inflation forecast is based on the assumption that the SNB policy rate remains at -0.75% over the entire forecast horizon.

The global economic outlook has changed abruptly in recent weeks. At the turn of the year, various surveys had initially pointed to an improvement in the world economy. The easing in international trade tensions fostered the expectation of a gradual pick-up in economic activity worldwide in the coming months. However, the global spread of coronavirus and the measures necessary to

Chart 1.1

CONDITIONAL INFLATION FORECAST OF MARCH 2020

Year-on-year change in Swiss consumer price index in percent



Sources: SFSO, SNB

contain the pandemic have interrupted this positive development and will result in significant economic declines.

In China, economic activity was already contracting strongly in broad areas of the country from January. Since mid-February, coronavirus has rapidly spread across the world, and in particular also to Switzerland's key trading partners in Europe and North America. Restrictions on public movement, interruptions in production, supply chain disruptions and curbed household consumption will weigh heavily on economic activity in all affected countries.

In this environment, the global economic outlook is extremely uncertain. Pronounced economic declines are to be expected in the first half of 2020. The speed with which the global economy subsequently recovers will hinge on

the combined impact of healthcare, fiscal and monetary policy measures.

Against the backdrop of the spread of coronavirus, the short-term outlook has also worsened markedly for Switzerland. In December, the SNB had still expected growth of between 1.5% and 2% for 2020. However, the downturn in the international economy and the measures to contain the virus will lead to a marked decline in economic activity in Switzerland as well in the first half of the year. As soon as the national and international containment measures can be lifted, economic activity is likely to return to normal, albeit gradually. Even under this assumption, however, GDP growth is likely to be negative for the year as a whole. The return to normality from the second half of the year onwards could thereafter be reflected in strong positive growth in 2021.

Monetary policy strategy at the SNB

The SNB has a statutory mandate to ensure price stability while taking due account of economic developments.

The SNB has specified the way in which it exercises this mandate in a three-part monetary policy strategy. First, it regards prices as stable when the Swiss consumer price index (CPI) rises by less than 2% per annum. This allows it to take account of the fact that the CPI slightly overstates actual inflation. At the same time, it allows

inflation to fluctuate somewhat with the economic cycle. Second, the SNB summarises its assessment of the situation and of the need for monetary policy action in a quarterly inflation forecast. This forecast, which is based on the assumption of a constant short-term interest rate, shows how the SNB expects the CPI to move over the next three years. As the third element in implementing its monetary policy the SNB sets the SNB policy rate, and seeks to keep the secured short-term Swiss franc money market rates close to this rate.

Table 1.1

OBSERVED INFLATION IN MARCH 2020

| | 2016 | | | | 2017 | | | | 2018 | | | | 2019 | | | | 2017 | 2018 | 2019 |
|-----------|------|------|------|------|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|------|------|------|------|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | | |
| Inflation | -1.0 | -0.4 | -0.2 | -0.2 | 0.5 | 0.4 | 0.5 | 0.8 | 0.7 | 1.0 | 1.1 | 0.9 | 0.6 | 0.6 | 0.3 | -0.1 | 0.5 | 0.9 | 0.4 |

Source: SFSO

CONDITIONAL INFLATION FORECAST OF MARCH 2020

| | 2019 | | | | 2020 | | | | 2021 | | | | 2022 | | | | 2020 | 2021 | 2022 |
|---|------|----|----|----|------|------|------|------|------|-----|-----|-----|------|-----|-----|-----|------|------|------|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | | |
| Forecast December 2019, SNB policy rate -0.75% | | | | | -0.1 | 0.1 | 0.0 | 0.0 | 0.3 | 0.3 | 0.4 | 0.6 | 0.7 | 0.9 | 1.0 | 1.2 | 0.1 | 0.5 | |
| Forecast March 2020, SNB policy rate -0.75% | | | | | -0.1 | -0.6 | -0.4 | -0.1 | 0.1 | 0.3 | 0.4 | 0.5 | 0.5 | 0.7 | 0.8 | 0.9 | -0.3 | 0.3 | 0.7 |

Source: SNB

2 Global economic environment

The global economic outlook has changed abruptly in recent weeks. At the turn of the year, various surveys had initially pointed to an improvement in the world economy. The easing in international trade tensions fostered the expectation of a gradual pick-up in economic activity worldwide in the coming months.

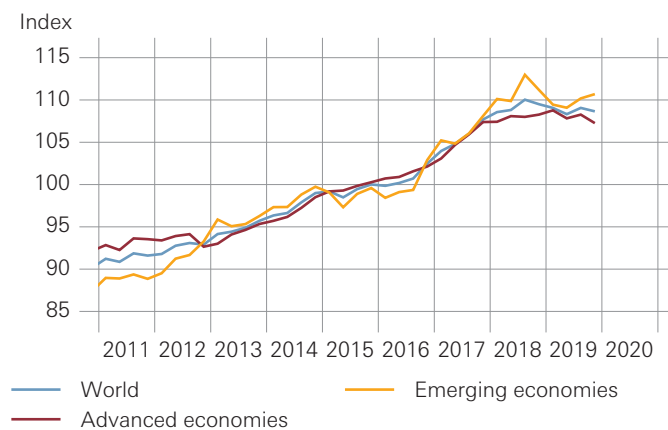
However, the global spread of coronavirus and the measures necessary to contain the pandemic have interrupted this positive development and will result in significant economic declines. In China, economic activity was already contracting strongly in broad areas of the country from January. Since mid-February, coronavirus has rapidly spread across the world, and in particular also to Switzerland's key trading partners in Europe and North America. Restrictions on public movement, interruptions in production, supply chain disruptions and curbed household consumption will weigh heavily on economic activity in all affected countries.

In this environment, the global economic outlook is extremely uncertain. Pronounced economic declines are to be expected in the first half of 2020. The speed with which the global economy subsequently recovers will hinge on the combined impact of healthcare, fiscal and monetary policy measures.

Chart 2.1

GLOBAL GOODS TRADE

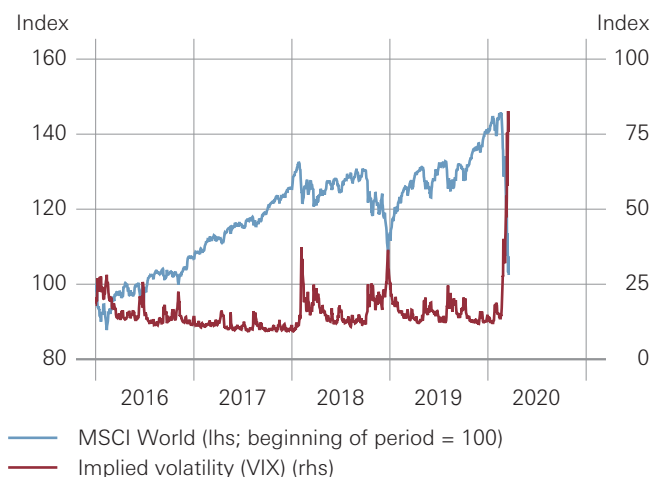
Average of depicted period = 100



Sources: CPB Netherlands Bureau for Economic Policy Analysis, Thomson Reuters Datastream

Chart 2.2

STOCK MARKETS



Source: Thomson Reuters Datastream

Chart 2.3

INTERNATIONAL LONG-TERM INTEREST RATES

10-year government instruments

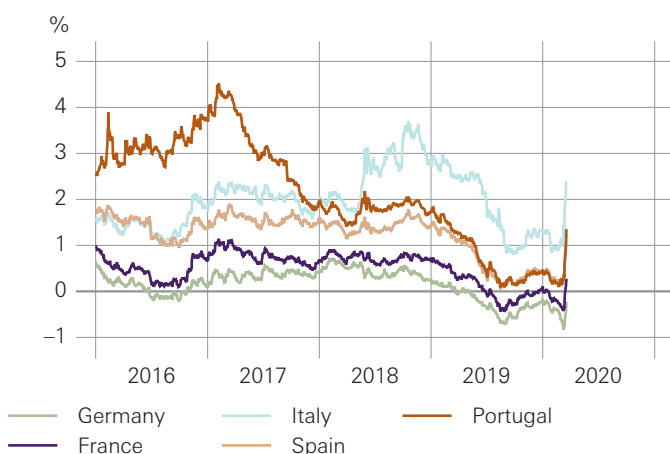


Source: Thomson Reuters Datastream

Chart 2.4

EUROPEAN LONG-TERM INTEREST RATES

10-year government instruments



Source: Thomson Reuters Datastream

INTERNATIONAL FINANCIAL AND COMMODITY MARKETS

From mid-December, financial market developments were initially dominated by the trade agreement between the US and China ('phase one' trade deal), which temporarily supported market sentiment at the beginning of the year. However, this was soon overshadowed by growing concerns over coronavirus. Sentiment first started to deteriorate as news of the virus outbreak in China made headlines in mid-January and it subsequently crumbled when the virus began to spread across the globe. The implied volatility of US stocks as measured by option prices (VIX) surged, hitting values last seen during the 2008 financial crisis (cf. chart 2.2). Against this backdrop, risk premia on corporate bonds also widened.

Stock prices around the world fell sharply. The major share indices have suffered double-digit percentage losses on a daily basis since 21 February. The global share price index MSCI World latterly stood at the same level as at the beginning of 2017. The dramatic downturn in the global economic outlook also led to a significant reaction in capital market interest rates. Between mid-January and the beginning of March, yields on ten-year government bonds fell by around half a percentage point; they have recently risen again abruptly in various countries (cf. charts 2.3 and 2.4). There was initially a particularly marked decline in yields in the US, which temporarily hit a record low. In certain euro area member states such as Italy and Spain, where coronavirus spread rapidly and public finances are fragile, yield differentials versus German government bonds widened.

The Japanese yen and Swiss franc appreciated noticeably from the end of February. The euro and the US dollar were also somewhat firmer on a trade-weighted basis, while the pound sterling lost value (cf. chart 2.5).

Oil prices fell substantially. Having initially declined due to the deteriorating global growth outlook given the temporary standstill in economic activity in many parts of China and the subsequent worldwide spread of the virus, oil prices dropped again sharply in March when OPEC and other oil-producing countries failed to reach agreement on continuing to restrict output. In mid-March, oil prices stood at USD 26, compared to USD 65 three months earlier. Given the muted growth prospects, prices for industrial metals also fell sharply (cf. chart 2.6).

UNITED STATES

Up until the spread of coronavirus, the US economy was in robust shape. At 2.1%, GDP continued to expand in line with potential in Q4 2019 (cf. chart 2.7). Although private consumption slowed, it was still the main growth driver. Corporate investment, meanwhile, contracted further. Employment growth remained solid in recent months. Because the employment rate increased slightly, unemployment was unchanged in February at 3.5% (cf. chart 2.10).

According to the monthly indicators, the sound economic momentum at the beginning of the year initially continued. As the virus quickly spread, however, the short-term outlook deteriorated markedly. In mid-March, the US government and certain US states took measures to contain the spread of the virus. These included a one-month ban on travel from Europe as well as the closure of restaurants and schools in some US states, and partial lockdowns. To counter the negative effects on economic activity, the government passed an aid package, comprising paid sick leave for employees, enhanced unemployment benefits as well as free coronavirus testing. Overall, a marked drop in economic activity is to be expected in the first half of the year.

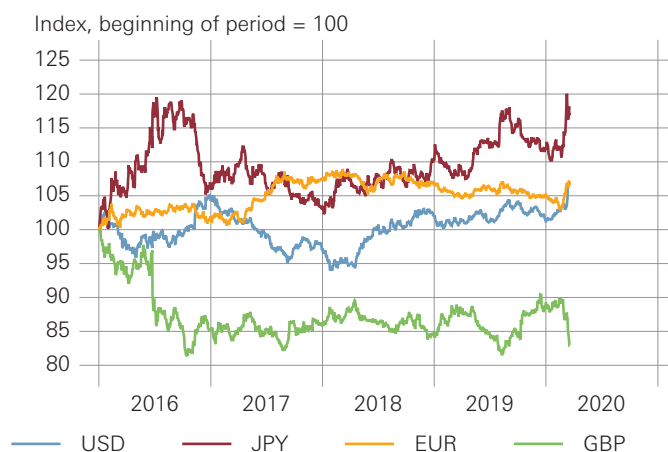
Amid rising energy price inflation, annual inflation as measured by the consumer price index (CPI) climbed to 2.3% in February (cf. chart 2.11), while core inflation remained stable at 2.4% (cf. chart 2.12). Core inflation as measured by the personal consumption expenditure deflator index has recovered in recent months, but was still below the US Federal Reserve's target in January at 1.7%.

Given the spread of coronavirus and the associated risks for the US economy, the Fed cut the target range for its policy rate by half a percentage point at the beginning of March in an unscheduled move, bringing it to 1.0–1.25%; it then lowered it further by a full percentage point to 0.0–0.25% in mid-March (cf. chart 2.13). Moreover, it is planning a USD 700 billion Treasury and mortgage bond-buying programme in the coming months. These measures are aimed both at counteracting a tightening of financing conditions and at ensuring that the financial markets operate smoothly. The policy rate target range is expected to remain at this new level until the economy has weathered the latest events and is back on track.

Chart 2.5

EXCHANGE RATES

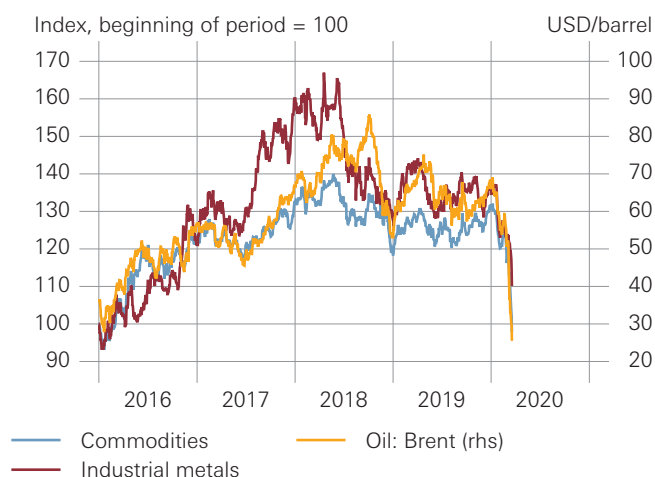
Trade-weighted



Source: Thomson Reuters Datastream

Chart 2.6

COMMODITY PRICES

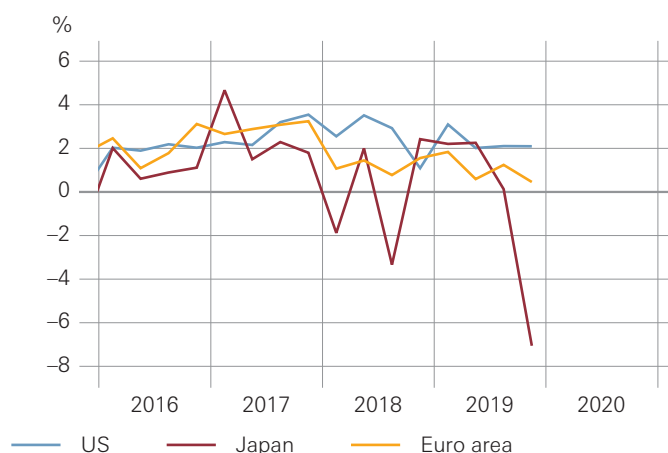


Source: Thomson Reuters Datastream

Chart 2.7

REAL GDP: ADVANCED ECONOMIES

Change from previous period

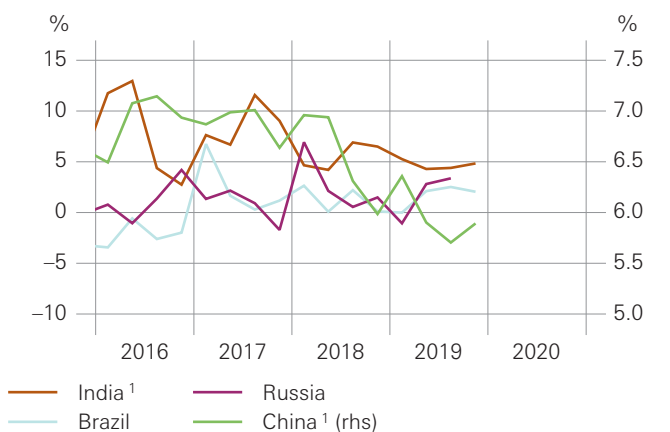


Source: Thomson Reuters Datastream

Chart 2.8

REAL GDP: EMERGING ECONOMIES

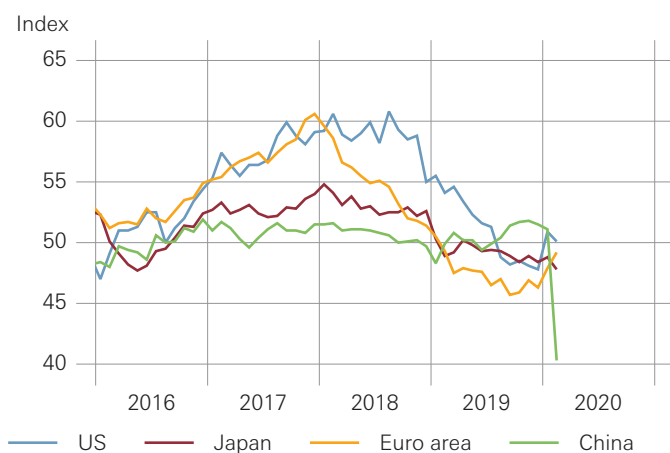
Change from previous period



1 Seasonal adjustment: SNB
Sources: CEIC, Thomson Reuters Datastream

Chart 2.9

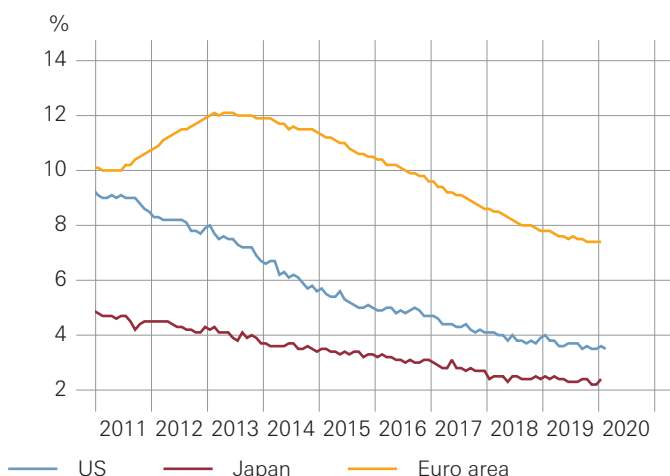
PURCHASING MANAGERS' INDICES (MANUFACTURING)



Sources: Institute for Supply Management (ISM), Markit Economics Limited

Chart 2.10

UNEMPLOYMENT RATES



Source: Thomson Reuters Datastream

EURO AREA

In the euro area, GDP grew by only 0.5% in the fourth quarter, following 1.2% in Q3 2019 (cf. chart 2.7). While activity in the services sector underpinned growth, manufacturing activity receded further. GDP expanded by 1.2% in 2019, the lowest rate since the end of the sovereign debt crisis in 2013. Despite the weak growth, employment rose slightly in the fourth quarter, while unemployment remained at 7.4% in January, its lowest level in over ten years (cf. chart 2.10).

Coronavirus is gradually spreading throughout Europe. Italy was greatly affected from mid-February, and its government thus introduced increasingly restrictive measures to help stem the spread of the virus. These include closing restaurants, shops and schools, as well as imposing partial lockdowns. In the course of March, most European countries took similar measures. In addition, the movement of people across borders has been heavily restricted. This raft of measures is aimed at slowing the spread of the virus and preventing the healthcare system from being overwhelmed by the increasing number of patients. These preventive measures, however, severely hamper economic activity. Many countries therefore also announced support measures specifically intended to prevent companies from experiencing liquidity bottlenecks and households from suffering losses in income.

Overall, a marked decline in economic output is to be expected in the first half of the year. If the measures adopted to fight the spread of the virus are successful and the situation for households and companies returns to normal, the economy should visibly recover in the second half of the year.

Consumer price inflation in the euro area rose slightly in recent months and stood at 1.2% in February, while core inflation remained almost unchanged at 1.2% (cf. charts 2.11 and 2.12).

The ECB decided on a package of measures in March. It is expanding its asset purchase programme of EUR 20 billion a month with an additional asset purchase envelope totalling EUR 870 billion until the end of the year. The ECB is prepared to increase the extent of its asset purchases as required. Additional longer-term refinancing operations will be conducted, temporarily, to provide banks with sufficient liquidity. It also eased the conditions for targeted longer-term refinancing operations (TLTRO) in order to encourage lending to the real economy. It kept its key rates unchanged, and plans to maintain them at their present levels or lower until inflation dynamics are sufficiently robust.

JAPAN

In Japan, GDP contracted by 7.1% in the fourth quarter, following solid growth in the previous quarters, as shown in chart 2.7. The sharp decline is primarily due to the consumption tax hike and the severe typhoons that hit the region. Private consumption dropped considerably despite the introduction of fiscal compensatory measures. Exports and investment also weakened. However, at 0.7%, GDP growth in 2019 was in line with potential. Employment figures continued to move upwards in recent months, and unemployment remained historically low in January at 2.4%.

In December, the government approved an extensive stimulus package to help cushion the impact of the consumption tax hike. In the short term, however, the negative effects of coronavirus will overshadow all other factors. Consequently in February and March, the government put together initial financial aid packages for households and smaller businesses and is planning further support measures.

Consumer price inflation has risen slightly in recent months and stood at 0.4% in February, while core inflation was almost unchanged at 0.2% (cf. charts 2.12 and 2.13). Inflation is set to remain muted in the short term as a result of the government's free education programme. The longer-term inflation expectations derived from company surveys tended sideways, still remaining significantly below the Japanese central bank's inflation target of 2%.

Against the backdrop of coronavirus, the Bank of Japan adopted measures in mid-March to facilitate SME access to bank loans. Furthermore, it decided to boost its purchases of corporate bonds and exchange-traded funds. It left its key interest rates unchanged and announced that it was willing to take additional easing measures if necessary.

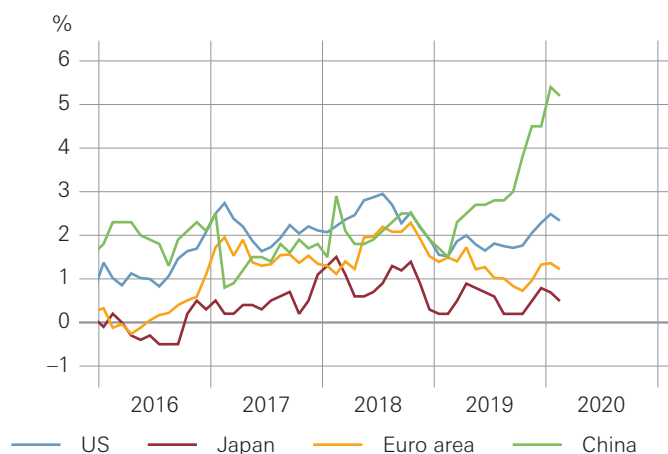
CHINA

China's GDP grew by 5.9% in Q4 2019 (cf. chart 2.8). At year-end, overall capacity utilisation was approximately normal. At 6.1%, GDP growth for the year as a whole was somewhat slower than in 2018, which mainly reflected weaker manufacturing output.

Chart 2.11

CONSUMER PRICES

Year-on-year change

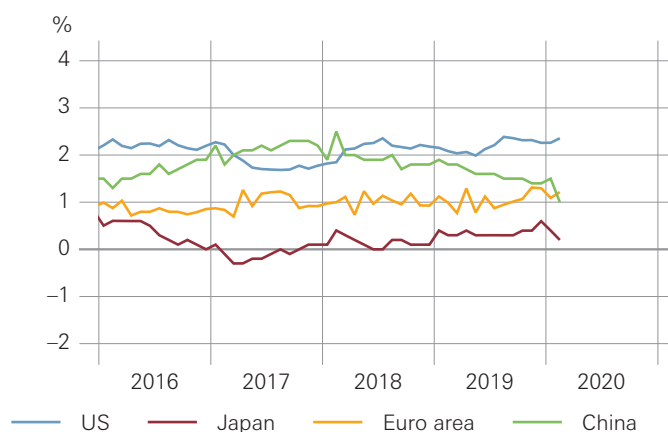


Source: Thomson Reuters Datastream

Chart 2.12

CORE INFLATION RATES ¹

Year-on-year change

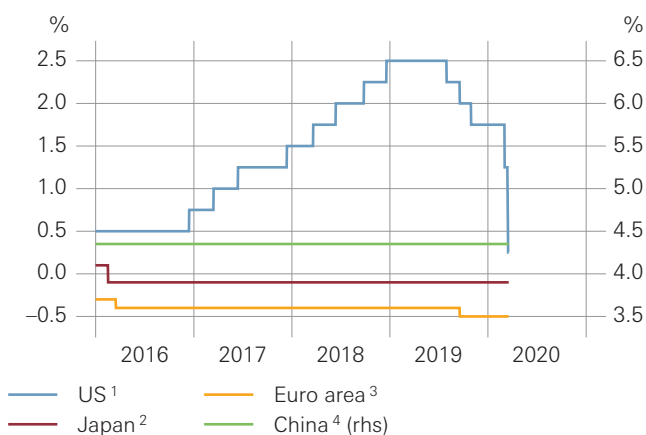


¹ Excluding food and energy.

Source: Thomson Reuters Datastream

Chart 2.13

OFFICIAL INTEREST RATES

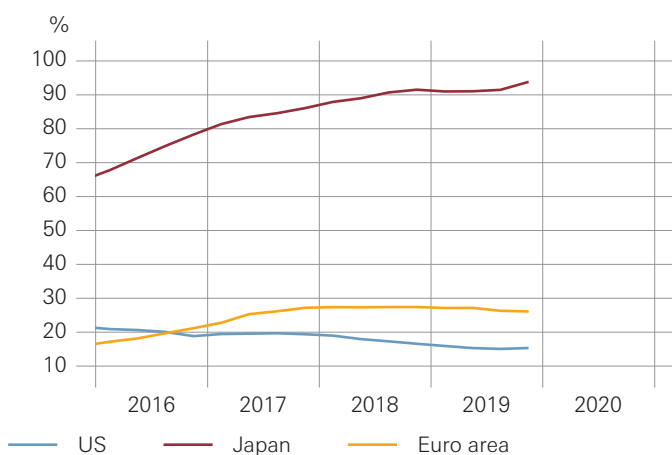


1 Federal funds rate (upper limit of target range) 3 Deposit facility rate
 2 Call money target rate 4 One-year lending rate
 Source: Thomson Reuters Datastream

Chart 2.14

MONETARY BASE

Relative to GDP



Source: Thomson Reuters Datastream

There was positive news with regard to US-China trade tensions. The ‘phase one’ trade agreement signed in January led to a slight reduction in US tariffs on Chinese exports. In return, China is set to increase imports of goods and services from the US. The agreement also addresses the protection of intellectual property and technology transfer.

Already in January, the spread of coronavirus led the government to introduce extensive quarantine measures. After peaking at the beginning of February, the number of new cases steadily declined thanks to these measures. As a result, indicators are signalling a very sharp decline in output for the first quarter. From the second half of February, there were signs of a gradual pick-up in economic activity.

Monetary and fiscal policy measures are expected to provide positive growth stimuli. In 2019, the government had already lowered taxes for companies and individuals; following the outbreak of the virus, it introduced various temporary tax relief measures for companies. Furthermore, in recent months – latterly also in response to coronavirus – the People’s Bank of China has provided commercial banks with additional liquidity, resulting in a decline in money market rates.

Consumer price inflation increased further and stood at 5.2% in February (cf. chart 2.11). This can be attributed to rising food prices, especially for pork, as a result of an outbreak of swine fever. Core inflation fell to 1.0% (cf. chart 2.12).

BRAZIL, INDIA AND RUSSIA

Fourth-quarter growth in Brazil remained robust, driven primarily by stronger consumption and a slight recovery in exports. In India, problems in the banking sector were again responsible for keeping GDP expansion below potential; banks’ reluctance to lend continued to weigh on investment and private consumption. As a result of weak growth in exports, Russia’s economy is likely to have practically stagnated.

All three economies will be affected by weaker foreign demand in the short term. Brazil’s economy is likely to benefit from expansionary monetary policy and economic reforms. In India, too, expansionary economic policy looks set to support the economy on the back of a considerable reduction in key rates and corporate taxes in 2019. In the short term, Russia will suffer from the effects of the marked drop in oil prices. Overall, the global declines in economic activity are also likely to have a significant impact on the emerging economies.

3 Economic developments in Switzerland

The Swiss economy continued to grow at a moderate rate in the fourth quarter. According to the initial estimate, GDP expanded by 1.3%. The provisional figures for 2019 put GDP growth at 0.9%, compared with 2.8% in 2018. However, this slowdown in growth is overstated due to the absence of major international sporting events.

The economy initially developed favourably at the beginning of the new year, with most indicators and sentiment surveys pointing to a gradual pick-up in growth. The situation on the labour market also remained positive.

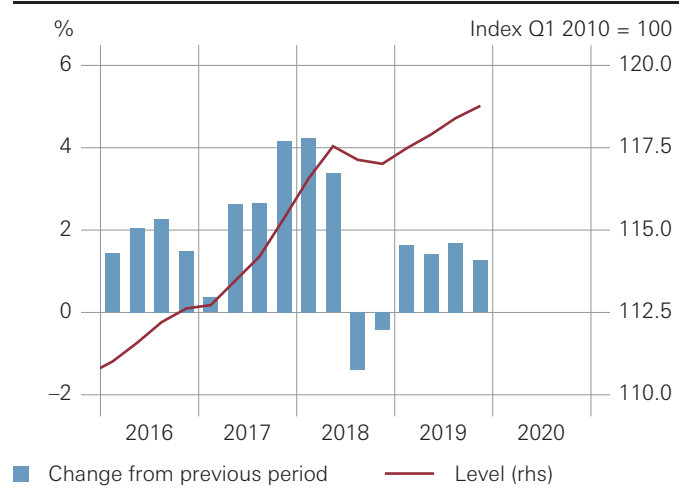
Due to the global spread of coronavirus, the short-term outlook has worsened considerably for Switzerland also. In December, the SNB had still expected growth of between 1.5% and 2% for 2020. However, the downturn in the international economy and the measures to contain the virus will lead to a marked decline in economic activity in the first half of the year. As soon as the national and international containment measures can be lifted, economic activity is likely to return to normal, albeit gradually. Even under this assumption, however, GDP growth is likely to be negative for the year as a whole. The return to normality from the second half of the year onwards could thereafter be reflected in strong positive growth in 2021.

OUTPUT AND DEMAND

The SNB takes a wide range of information into account when assessing the economic situation. In line with expectations, GDP growth was moderate in the fourth quarter of 2019. A more extensive analysis of the economic indicators suggests that momentum increased somewhat towards year-end and remained positive into early 2020. From March the situation changed dramatically. With the rapid spread of coronavirus, the tightening of containment measures against the virus and rising uncertainty, the pressure on Swiss companies has increased massively. The talks conducted by the SNB's delegates for regional economic relations held in the second week of March clearly reflected the growing concerns.

Chart 3.1

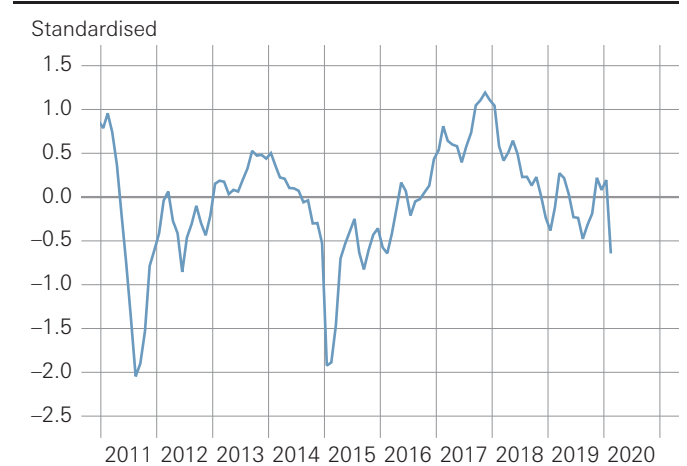
REAL GDP



Source: SECO

Chart 3.2

SNB BUSINESS CYCLE INDEX



Source: SNB

Chart 3.3

MANUFACTURING PMI AND KOF ECONOMIC BAROMETER



Sources: Credit Suisse, KOF Swiss Economic Institute

Moderate GDP growth in fourth quarter

According to the initial estimate by the State Secretariat for Economic Affairs (SECO), GDP increased by 1.3% in the fourth quarter (cf. chart 3.1). Services were the main growth driver, headed up by the wholesale and retail trade segments, which recently regained momentum somewhat. While value added also rose substantially in construction, it stagnated in manufacturing, having risen sharply in the previous quarters.

In the fourth quarter, growth was above all supported by domestic final demand. Expansion was strongest in equipment investment. By contrast, the pace of growth in foreign trade slowed; exports stagnated, while imports receded significantly.

With the Q4 estimate released, initial provisional annual figures for 2019 are available. According to these, annual average GDP grew by 0.9%, which is considerably less strong than in 2018 (2.8%). However, the slowdown in 2019 is overstated due to the absence of major international sporting events. Adjusted for sporting events, figures showed a year-on-year decline in growth from 2.3% to 1.4%. As in the previous year, manufacturing made the largest contribution to growth.

Favourable economic indicators prior to coronavirus outbreak

A wide range of information shows that, in late 2019 and early 2020, the economy was picking up once again, having slowed over the course of the last year. This is suggested, for instance, by the SNB's Business Cycle Index, which offers a comprehensive overview of economic momentum (cf. chart 3.2). In January, the index was close to zero, indicating an average pace of growth. However, in February it again dropped well below zero. The decline was attributable to a deterioration in foreign and financial market indicators as a result of coronavirus.

Up to early March, the talks held by the SNB's delegates for regional economic relations with companies suggested robust growth momentum (cf. 'Business cycle signals', pp. 28 et seq.). Similarly, the KOF Economic Barometer and the manufacturing purchasing managers' index (PMI) also showed positive developments (cf. chart 3.3). This notwithstanding, all of these indicators have yet to reflect the impact of coronavirus in Europe.

Contacts with companies from various sectors in the second week of March point to a dramatic deterioration in business performance within a short period of time. There has been a pronounced slump in turnover in tourism,

Table 3.1

REAL GDP AND COMPONENTS

Growth rates on previous period in percent, annualised

| | 2016 | 2017 | 2018 | 2019 | 2018 | | | | 2019 | | | |
|--|------------|------------|------------|------------|------------|------------|-------------|-------------|------------|------------|------------|------------|
| | | | | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Private consumption | 1.4 | 1.2 | 1.0 | 1.0 | 1.0 | 1.0 | 0.2 | 1.0 | 1.4 | 1.4 | 0.8 | 1.5 |
| Government consumption | 1.3 | 1.2 | 0.3 | 1.3 | -1.4 | 0.4 | -0.4 | 1.4 | 2.3 | 0.6 | 2.3 | 2.1 |
| Investment in fixed assets | 2.5 | 3.4 | 1.1 | 0.6 | 3.9 | -1.8 | -5.2 | -1.3 | 6.6 | -1.8 | 0.8 | 6.7 |
| Construction | -0.2 | 1.5 | 1.2 | 0.4 | -1.2 | 2.9 | -0.3 | -0.8 | 1.8 | -0.7 | 1.1 | 1.5 |
| Equipment | 4.3 | 4.6 | 1.1 | 0.8 | 7.0 | -4.5 | -8.0 | -1.6 | 9.5 | -2.4 | 0.7 | 9.9 |
| Domestic final demand | 1.7 | 1.8 | 0.9 | 0.9 | 1.5 | 0.1 | -1.4 | 0.4 | 2.9 | 0.4 | 1.0 | 3.0 |
| Change in inventories ¹ | -1.4 | 0.0 | 0.6 | -0.8 | -5.4 | 5.7 | -0.7 | -10.5 | 2.6 | 0.9 | 2.0 | -5.4 |
| Total exports ² | 6.5 | 3.8 | 4.5 | 2.5 | 16.2 | -6.2 | -8.3 | 21.7 | 2.3 | -1.8 | 1.3 | -0.2 |
| Goods ² | 5.9 | 5.2 | 5.9 | 4.7 | 20.6 | -5.9 | -13.0 | 40.6 | -0.3 | 1.9 | 2.6 | -1.8 |
| Goods excluding merchanting ² | 5.8 | 5.8 | 4.4 | 4.6 | 6.2 | 3.9 | -11.6 | 31.1 | 2.2 | 1.0 | 4.0 | -5.8 |
| Services | 7.6 | 1.1 | 1.6 | -1.9 | 8.0 | -6.9 | 1.7 | -9.2 | 8.0 | -9.2 | -1.4 | 3.4 |
| Total imports ² | 4.4 | 4.4 | 2.4 | 1.3 | 1.5 | -2.3 | -11.6 | 4.9 | 11.1 | -2.6 | 4.5 | -9.3 |
| Goods ² | 3.8 | 5.2 | 6.2 | 1.7 | 6.9 | 0.1 | -14.0 | 6.5 | 16.1 | -6.7 | 5.2 | -10.4 |
| Services | 5.5 | 2.8 | -4.3 | 0.6 | -8.0 | -7.0 | -6.4 | 1.8 | 1.6 | 6.3 | 2.9 | -6.9 |
| Net exports ³ | 1.6 | 0.2 | 1.4 | 0.8 | 8.3 | -2.5 | 0.5 | 9.7 | -3.5 | 0.1 | -1.2 | 4.0 |
| GDP | 1.7 | 1.8 | 2.8 | 0.9 | 4.2 | 3.4 | -1.4 | -0.4 | 1.6 | 1.4 | 1.7 | 1.3 |

1 Contribution to growth in percentage points (including statistical discrepancy).

2 Excluding valuables (non-monetary gold and other precious metals, precious stones and gems as well as works of art and antiques).

3 Contribution to growth in percentage points.

Source: SECO

hospitality, entertainment and leisure, the watchmaking industry, and bricks-and-mortar non-food retail. Other sectors expected their business to deteriorate due to indirect effects and further measures by the authorities.

LABOUR MARKET

Until the outbreak of coronavirus in Switzerland, the situation on the labour market remained favourable. The unemployment rate persisted at a low level, and employment figures rose further. According to SECO, applications for short-time working have risen sharply since the beginning of March.

Unemployment stable

The number of people registered as unemployed at the regional employment offices changed very little in recent months. Excluding seasonal fluctuations, around 106,000 people were recorded as unemployed at the end of February, while the seasonally adjusted unemployment rate published by SECO stood at 2.3% (cf. chart 3.4).

In addition, the Swiss Federal Statistical Office (SFSO) calculates unemployment figures in line with the International Labour Organization (ILO) definition, based on data provided by the Swiss Labour Force Survey (SLFS), a household survey conducted quarterly. This survey includes people who are looking for work but are not registered, or are no longer registered, as unemployed with the regional employment offices. The SFSO unemployment rate calculated in accordance with the ILO definition is therefore higher than the one published by SECO. The seasonally adjusted unemployment rate fell from 4.3% in the third quarter to 4.1% in the fourth quarter.

Average employment growth in fourth quarter

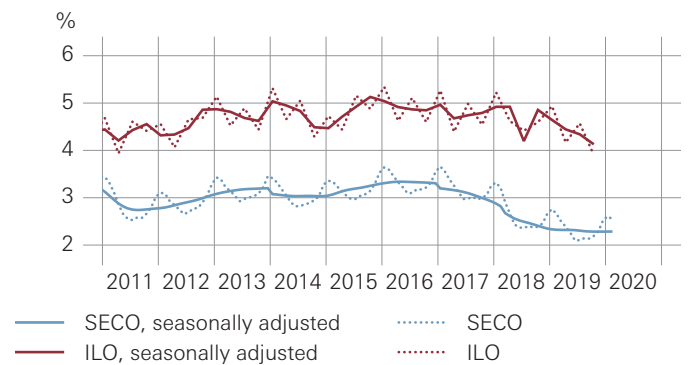
According to the Employment Statistics (ES), the seasonally adjusted number of persons employed rose moderately in the fourth quarter; at 0.7%, growth was below the long-term average of 1.1% (cf. chart 3.5). The ES measure the number of employed persons on the household side and are based primarily on SLFS data.

The national job statistics (JOBSTAT), by contrast, measure employment on the company side and are based on a survey of firms. According to these statistics, the number of full-time equivalent positions registered average growth in the fourth quarter. Employment rose in both services and construction, while in manufacturing, it dropped marginally (cf. chart 3.6).

According to anecdotal evidence, significantly more applications for short-time working have been made in recent weeks. It is to be expected that short-time working will increase strongly and on a broad basis in the coming months. To enable companies to implement short-time working as quickly as possible, the registration period has been reduced and the waiting period shortened to one day. During the financial crisis, short-time working proved

Chart 3.4

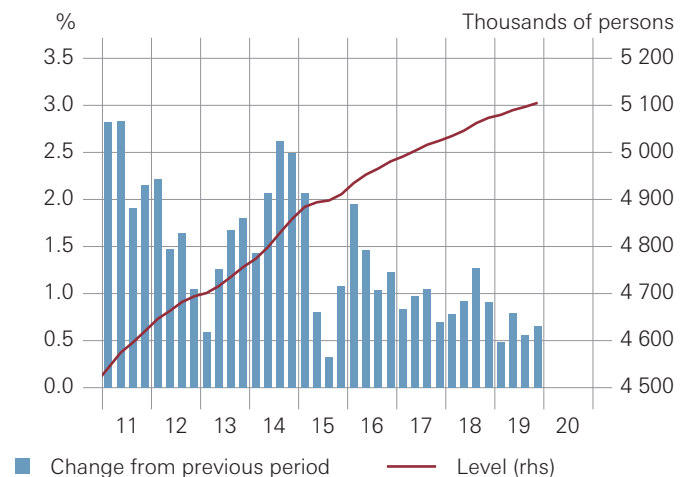
UNEMPLOYMENT RATE



SECO: Unemployed persons registered with the regional employment offices, as a percentage of the labour force (economically active persons). The number of economically active persons is based on the 2000 and 2010 censuses and the three-year averages of the 2012–2014 and 2015–2017 structural surveys.
ILO: Unemployment rate based on International Labour Organization definition.
Sources: SECO, SFSO

Chart 3.5

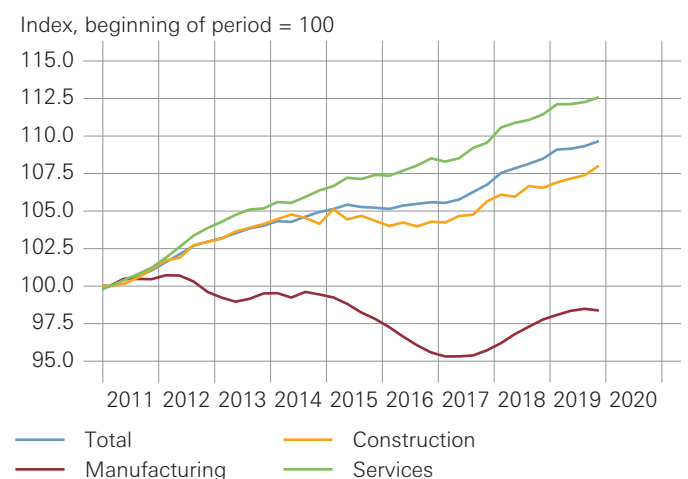
EMPLOYED PERSONS



Source: SFSO; seasonal adjustment: SNB

Chart 3.6

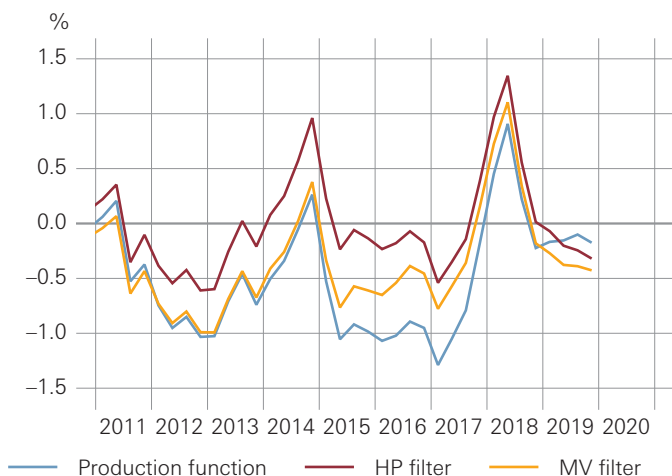
FULL-TIME EQUIVALENT JOBS



Source: SFSO; seasonal adjustment: SNB

Chart 3.7

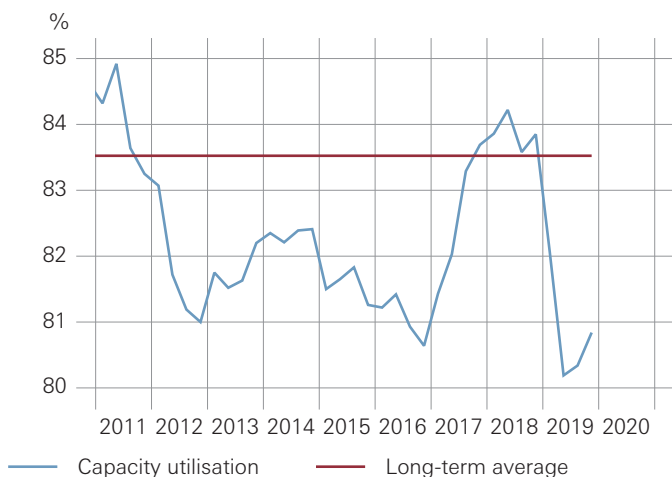
OUTPUT GAP



Source: SNB

Chart 3.8

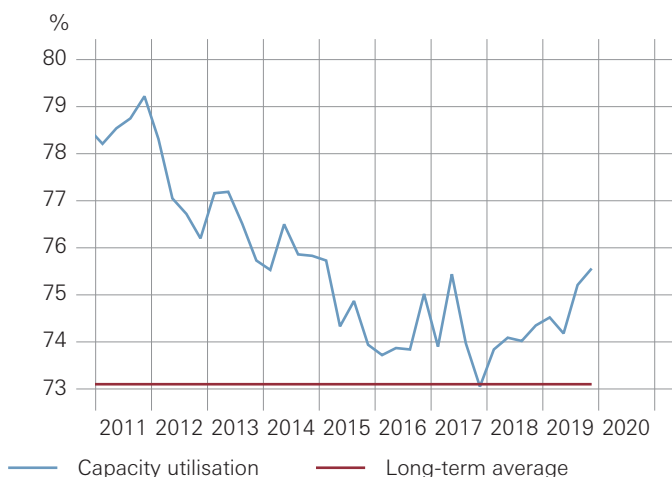
CAPACITY UTILISATION IN MANUFACTURING



Source: KOF Swiss Economic Institute

Chart 3.9

CAPACITY UTILISATION IN CONSTRUCTION



Source: KOF Swiss Economic Institute

to be an effective means of preventing a longer-term slump in employment.

CAPACITY UTILISATION

Closed output gap in fourth quarter

The output gap, which is defined as the percentage deviation of actual GDP from estimated aggregate potential output, shows how well the production factors in an economy are being utilised. Based on the quarterly figures for GDP, the estimates suggest a closed gap at the beginning of the year. Potential output as estimated by means of a production function shows an output gap of -0.2% for the fourth quarter of 2019, unchanged from the previous quarter. Estimates using other methods to establish potential output (Hodrick-Prescott filter and multivariate filter) confirm that the gap is practically closed at present (cf. chart 3.7).

Surveys continue to paint mixed picture

The various surveys on the utilisation of production factors again presented a very mixed picture for the fourth quarter. Overall, however, they suggested that capacity utilisation in the Swiss economy was at a normal level.

According to the KOF survey, utilisation of technical capacity in manufacturing rose slightly in the fourth quarter. Yet, at 80.8%, it was still considerably below the long-term average (cf. chart 3.8). Data from other sources do not confirm the low utilisation, however. The same KOF survey also asks companies for an assessment of current technical capacity. Respondents reported that technical capacity in the fourth quarter was adequate. Machine utilisation in construction advanced, thus remaining above its long-term average (cf. chart 3.9). In services, too, the surveys point to a slightly above-average level of technical capacity utilisation.

Staff shortages continued until the coronavirus outbreak. Surveys on the labour situation carried out in services and construction indicated that filling vacant positions had continued to be something of a challenge for companies. In manufacturing, meanwhile, the situation had eased somewhat in recent months.

OUTLOOK

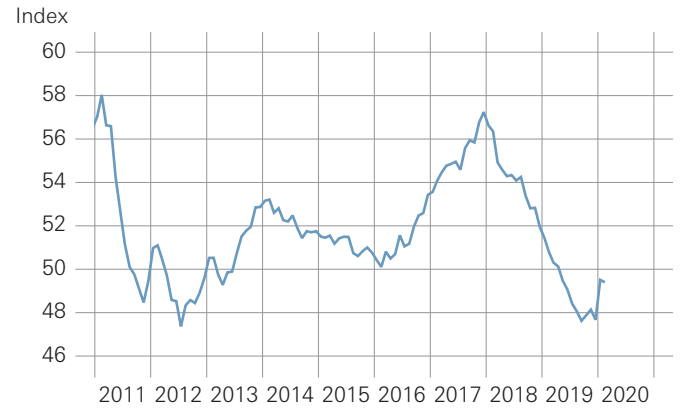
Due to the rapid spread of coronavirus, the short-term outlook has worsened markedly for Switzerland.

In December, the SNB had still expected growth of between 1.5% and 2% for 2020. However, the downturn in the international economy and the measures to contain the virus will lead to a marked decline in economic activity in Switzerland as well in the first half of the year. As soon as the national and international containment measures can be lifted, economic activity is likely to return to normal, albeit gradually. Even under this assumption, however, GDP growth is likely to be negative for the year as a whole. The return to normality from the second half of the year onwards could thereafter be reflected in strong positive growth in 2021.

Chart 3.10

MANUFACTURING PMI ABROAD

Export-weighted, 27 countries

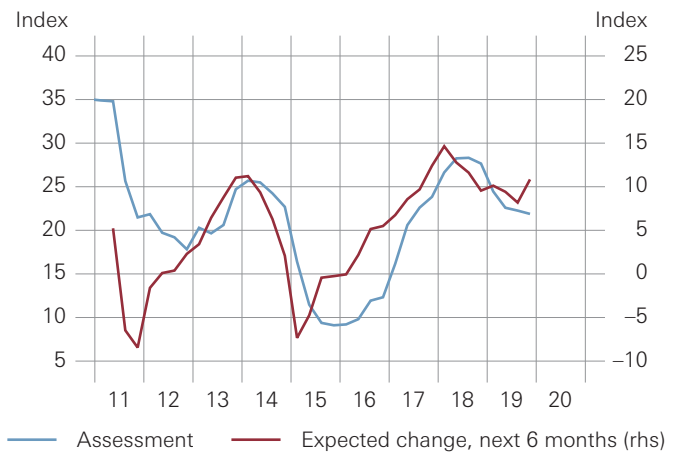


Sources: International Monetary Fund – Direction of Trade Statistics (IMF – DOTS), SNB, Thomson Reuters Datastream

Chart 3.11

BUSINESS SITUATION

Average across all KOF surveys

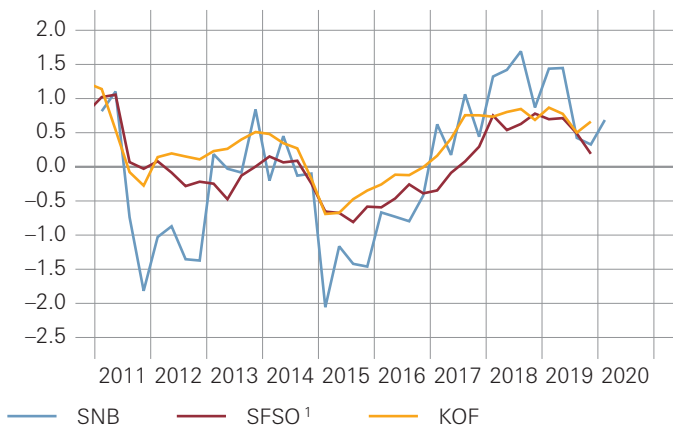


Source: KOF Swiss Economic Institute

Chart 3.12

EMPLOYMENT OUTLOOK

Seasonally adjusted, standardised



1 Seasonal adjustment: SNB

Sources: KOF Swiss Economic Institute, SFSO, SNB regional network

4

Prices and inflation expectations

The annual inflation rate as measured by the CPI stabilised close to zero in the first few months of 2020, having declined steadily since mid-2018. As in the previous quarters, core inflation rates were comparatively stable, remaining in low positive territory and above CPI inflation.

Short and longer-term inflation expectations were virtually unchanged in the fourth quarter of 2019, and remain within the range consistent with price stability, which the SNB equates to a rise in the CPI of less than 2% per year.

Both the available price data and the survey results reflect the impact of the global spread of coronavirus to only a limited degree.

CONSUMER PRICES

Low annual inflation rate

The annual CPI inflation rate hovered around zero during the last six months (cf. chart 4.1, table 4.1). It stood at 0.2% in January, but slipped back into negative territory in February (−0.1%). Private services and housing rents were the only components to make a positive contribution in February.

Negative inflation for imported products

Inflation for imported goods and services remained negative, with a figure of −1.0% recorded in February. Prices for both oil products and other imported products accounted for the negative contribution of imported products to the annual CPI inflation rate (cf. chart 4.1).

Inflation for domestic products slightly positive

Inflation for domestic goods and services remained slightly positive and stood at 0.2% in February (cf. chart 4.2). This was driven mainly by rent inflation. Inflation rates for domestic goods and for other domestic services stayed close to zero.

Table 4.1

SWISS CONSUMER PRICE INDEX AND COMPONENTS

Year-on-year change in percent

| | 2019 | 2019 | | | | 2019 | 2020 | |
|--|------------|------------|------------|------------|-------------|------------|------------|-------------|
| | | Q1 | Q2 | Q3 | Q4 | December | January | February |
| Overall CPI | 0.4 | 0.6 | 0.6 | 0.3 | −0.1 | 0.2 | 0.2 | −0.1 |
| Domestic goods and services | 0.5 | 0.6 | 0.7 | 0.4 | 0.3 | 0.4 | 0.3 | 0.2 |
| Goods | 0.6 | 0.9 | 0.9 | 0.5 | 0.0 | 0.2 | −0.2 | −0.4 |
| Services | 0.5 | 0.5 | 0.6 | 0.4 | 0.4 | 0.5 | 0.4 | 0.4 |
| Private services excluding housing rents | 0.7 | 0.7 | 0.9 | 0.5 | 0.5 | 0.6 | 0.5 | 0.4 |
| Housing rents | 0.5 | 0.4 | 0.5 | 0.5 | 0.8 | 1.0 | 1.0 | 1.1 |
| Public services | −0.3 | 0.1 | −0.1 | −0.4 | −0.6 | −0.6 | −0.9 | −0.8 |
| Imported goods and services | 0.0 | 0.7 | 0.6 | −0.1 | −1.2 | −0.7 | −0.2 | −1.0 |
| Excluding oil products | 0.4 | 0.6 | 0.7 | 0.4 | −0.3 | −0.3 | −0.5 | −0.7 |
| Oil products | −2.7 | 1.1 | 0.1 | −4.0 | −7.4 | −3.1 | 2.2 | −3.3 |

Sources: SFSO, SNB

Rent inflation higher, but reference interest rate declining

In February, rent inflation rose marginally to 1.1%. By contrast, the reference interest rate used for rent adjustments (calculated as a volume-weighted, average interest rate on domestic mortgage loans in Swiss francs at banks in Switzerland) decreased in March from 1.5% to 1.25% (cf. chart 4.3). A reduction in the reference interest rate normally has a dampening effect on the index for housing rent with a lag of several months.

Core inflation still above annual CPI inflation

Overall, core inflation rates have changed very little since autumn 2017. They are still above annual CPI inflation (cf. chart 4.4). In February, the trimmed mean calculated by the SNB (TM15) stood at 0.3%, with the only positive contribution to inflation coming from rents. The SFSO's core inflation rate (SFSO1) was marginally lower, at 0.2%.

The SFSO1 and TM15 rates are both based on the prices of a reduced basket of goods. When calculating SFSO1, energy and fuel as well as fresh and seasonal products are excluded. TM15 excludes the products with the most extreme price changes every month (15% at either end of the distribution curve of annual rates of change in product prices).

PRODUCER AND IMPORT PRICES

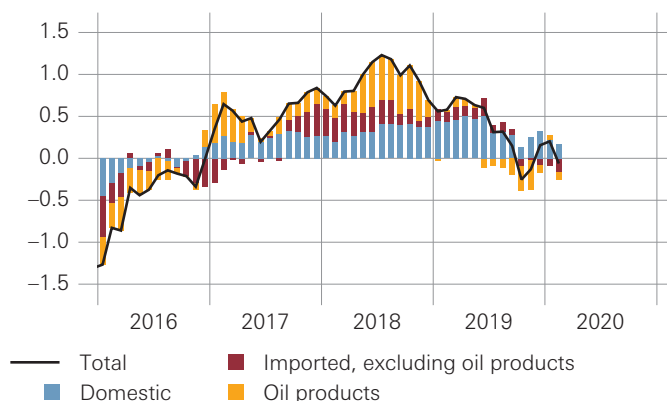
Low inflation for producer and import prices

Annual inflation for producer and import prices was -2.1% in February 2020, compared with -2.5% in November 2019 (cf. chart 4.5). This change mainly reflects developments in import prices. Producer prices stayed comparatively stable.

Chart 4.1

CPI: DOMESTIC AND IMPORTED GOODS AND SERVICES

Year-on-year change in CPI in percent. Contribution of individual components, in percentage points.

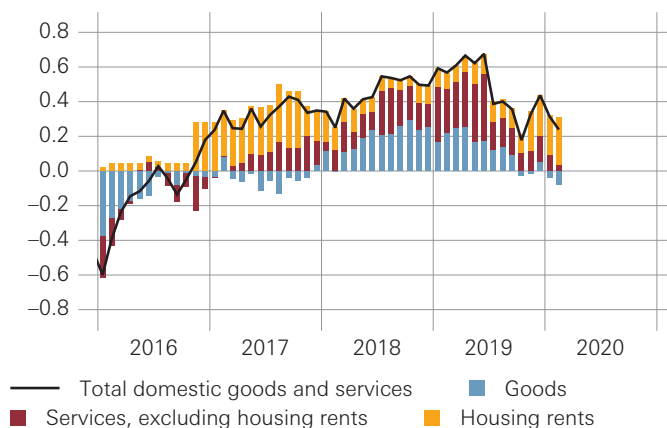


Sources: SFSO, SNB

Chart 4.2

CPI: DOMESTIC GOODS AND SERVICES

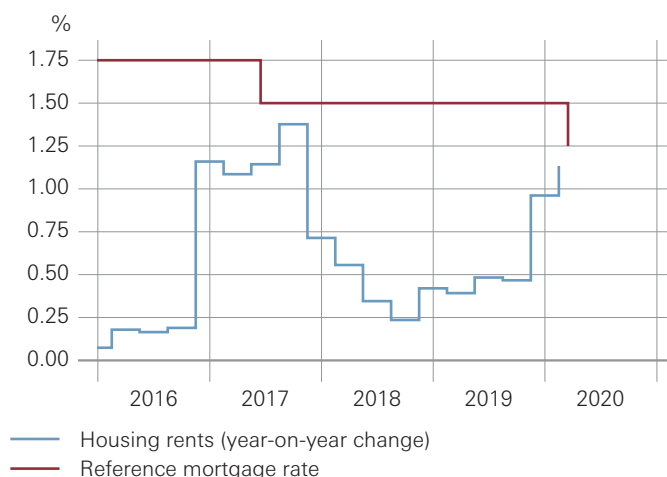
Year-on-year change in domestic CPI in percent. Contribution of individual components, in percentage points.



Sources: SFSO, SNB

Chart 4.3

HOUSING RENTS

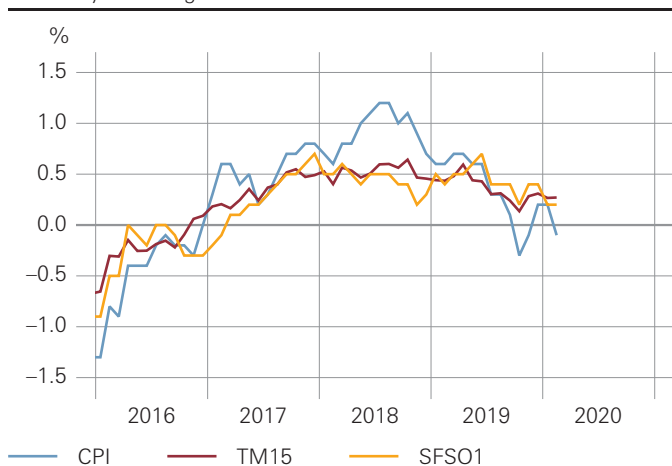


Sources: Federal Office for Housing (FOH), SFSO

Chart 4.4

CORE INFLATION RATES

Year-on-year change

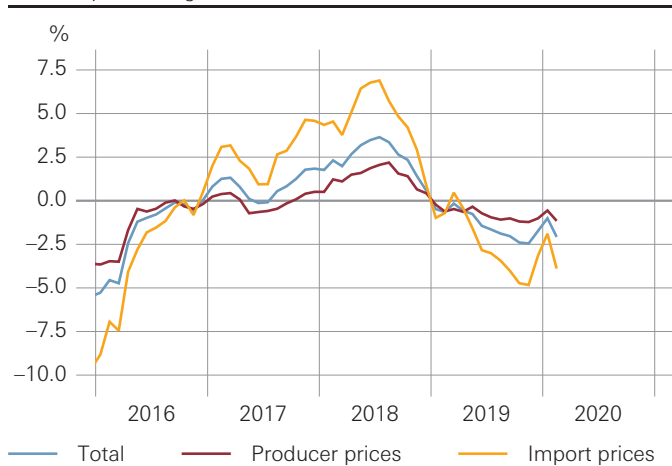


Sources: SFSO, SNB

Chart 4.5

PRODUCER AND IMPORT PRICES

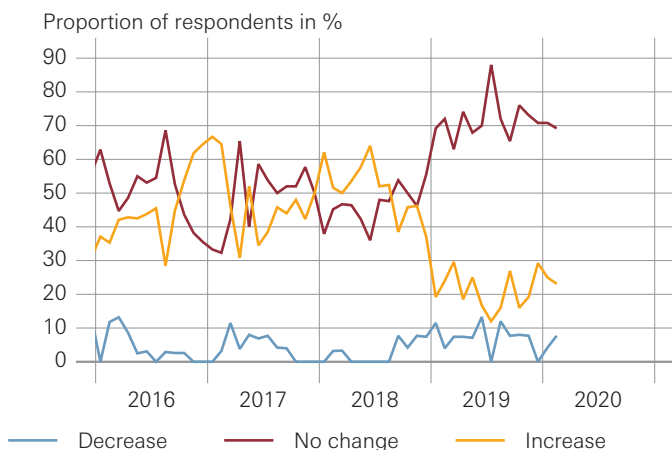
Year-on-year change



Source: SFSO

Chart 4.6

CS-CFA SURVEY: SIX-MONTH INFLATION EXPECTATIONS



Sources: CFA Society Switzerland, Credit Suisse

INFLATION EXPECTATIONS

Inflation expectations consistent with price stability

In recent months, short-term inflation expectations remained virtually unchanged and stayed in positive territory. Longer-term expectations were somewhat higher. According to surveys and the talks held by the SNB’s delegates for regional economic relations, inflation expectations continue to be consistent with the objective of price stability, which the SNB equates to a rise in the CPI of less than 2% per year. At the time the surveys and the talks with the delegates were conducted, the anticipated impact of coronavirus on economic developments in Switzerland was still very limited.

Short-term inflation expectations just in positive territory

According to the joint monthly financial market survey by Credit Suisse and the CFA Society Switzerland, the significant majority of analysts questioned in February 2020 expected inflation rates to remain unchanged in the next six months. Meanwhile, almost one-quarter of respondents anticipated a rise in inflation and only very few thought inflation rates would fall (cf. chart 4.6). Annual CPI inflation stood at 0.2% in January. The survey results suggest that respondents expected inflation rates to be in a similar range in the next six months.

The talks conducted by the SNB’s delegates for regional economic relations with companies from all sectors also point to short-term inflation expectations remaining unchanged in slightly positive territory. In the first quarter of 2020, company representatives expected an average annual inflation rate of 0.4% for the next six to twelve months (Q4 2019: 0.3%).

The quarterly survey of households conducted by SECO in January 2020 shows that somewhat more than half of the respondents anticipated a rise in prices over the next twelve months, while 41% expected them to remain unchanged. At just under 6%, the proportion expecting prices to fall was down slightly on the October survey.

Longer-term expectations slightly above short-term expectations

Longer-term inflation expectations are still slightly higher than short-term expectations. In the first quarter of 2020, company representatives interviewed by the SNB’s delegates thus put the inflation rate in three to five years at 0.7% on average, as they had in the previous quarter.

5

Monetary developments

At its quarterly assessment of 12 December 2019, the SNB left its policy rate unchanged and reaffirmed its policy stance. Its monetary policy thus continued to be based on the negative interest on sight deposits held by banks at the SNB and on the SNB's willingness to intervene in the foreign exchange market as necessary.

The global spread of coronavirus posed exceptionally large challenges, both socially and economically. The considerable rise in uncertainty led to a sharp decline in share prices and to volatility in capital market interest rates. On the foreign exchange market, the Swiss franc appreciated against the euro and the US dollar.

Growth rates for the M1 and M2 monetary aggregates declined over the last quarter. The growth rate of bank lending remained at a moderate level.

SUMMARY OF MONETARY POLICY SINCE THE LAST ASSESSMENT

Expansionary monetary policy remains unchanged

At its quarterly assessment of 12 December 2019, the SNB confirmed its expansionary monetary stance. It left unchanged, at -0.75% , the SNB policy rate and the interest rate on sight deposits held by banks and other financial market participants at the SNB which exceed a given threshold. Furthermore, the SNB reaffirmed that it will remain active in the foreign exchange market as necessary, while taking the overall currency situation into consideration.

The adjustment to the calculation of the exemption threshold on 1 November 2019 led to a considerable increase in the exemption thresholds for the banking system and to temporary upward pressure on short-term interest rates. As was already the case at the beginning of November, the SNB again conducted fine-tuning operations in the form of bilateral repo transactions at the end of December to ensure that the secured short-term money market rates remained close to the SNB policy rate.

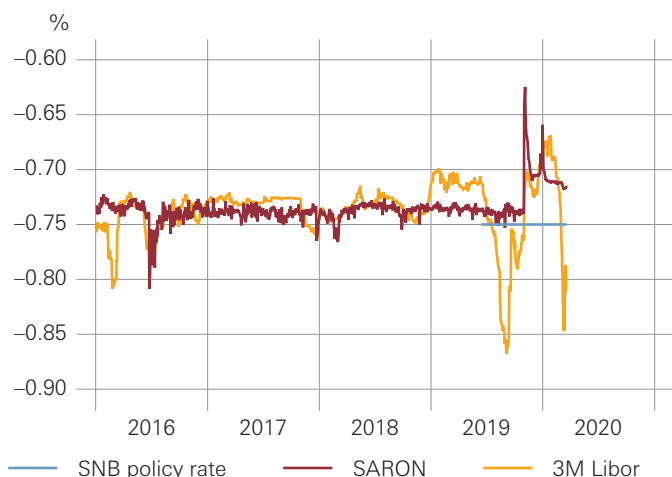
Higher sight deposits at the SNB

Since the monetary policy assessment of December 2019, total sight deposits held at the SNB have increased. In the week ending 13 March 2020 (last calendar week before the assessment of March 2020), they amounted to CHF 603 billion. This was higher than in the last calendar week preceding the assessment of December 2019 (CHF 587.8 billion). Between the assessments of December 2019 and March 2020, sight deposits at the SNB averaged CHF 590.9 billion. Of this amount, CHF 503.6 billion were sight deposits of domestic banks, and the remaining CHF 87.3 billion were other sight deposits.

Statutory minimum reserves averaged CHF 18.3 billion between 20 November 2019 and 19 February 2020. Overall, banks exceeded the minimum reserve requirement by CHF 491.3 billion (previous period: CHF 474.3 billion). Banks' surplus reserves thus remain very high.

Chart 5.1

SNB POLICY RATE AND MONEY MARKET RATES



Sources: Bloomberg, SIX Swiss Exchange Ltd, SNB

MONEY AND CAPITAL MARKET INTEREST RATES

Money market rates largely unchanged

Overall, money market rates have remained close to the SNB policy rate in the last three months. However, the adjustment to the way in which the negative interest exemption thresholds are calculated led to a slight increase in volatility in November and at year-end (cf. chart 5.1). SARON rose slightly in these periods in the short term, but at -0.71% is currently close to the SNB policy rate of -0.75% again.

Capital market interest rates volatile

Since the last monetary policy assessment in December, long-term interest rates fell sharply at times. They did recover in March, however, with the yield on ten-year Confederation bonds standing at around -0.5% at mid-month. It was thus at approximately the same level as in mid-December (cf. chart 5.2).

The fluctuations in Confederation bond yields primarily reflected global factors, in particular the financial market turbulence driven by concerns regarding the spread of coronavirus. This is also the case for government bonds of other major advanced economies.

Little change to yield curve

Since the monetary policy assessment of December, the yield curve for Confederation bonds has shifted downwards somewhat (cf. chart 5.3), and also flattened further at the long end. In mid-March, Confederation bond yields across all maturities covered remained in negative territory. Yields for maturities of less than four years were below the current SNB policy rate of -0.75% .

Real interest rates still low

Real interest rates are a determining factor in the saving and investment decisions of companies and households. These rates persisted at a very low level in the quarter under review, as nominal yields on Confederation bonds were clearly in negative territory, while survey measures of inflation expectations remained positive.

Chart 5.2

10-YEAR SWISS CONFEDERATION BOND YIELD

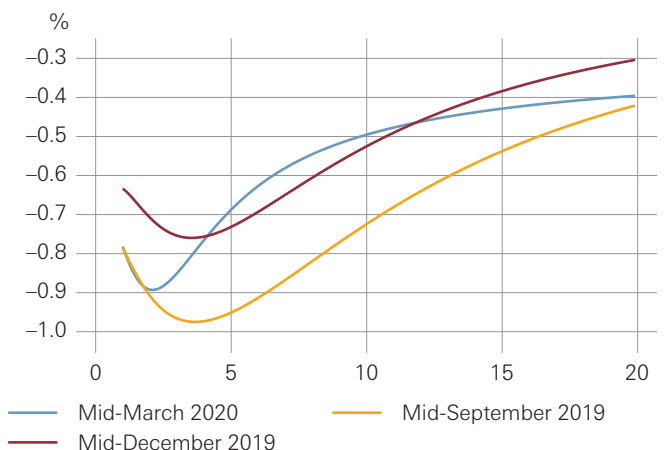


Source: SNB

Chart 5.3

TERM STRUCTURE OF CONFEDERATION BONDS

Years to maturity (hor. axis); Nelson-Siegel-Svensson method



Source: SNB

EXCHANGE RATES

Swiss franc appreciates against euro and US dollar

The Swiss franc has strengthened noticeably against the euro since the monetary policy assessment in December (cf. chart 5.4). In mid-March it stood at approximately 1.06 to the euro. One of the reasons for the franc's appreciation was the deterioration in risk sentiment in financial markets. During the last quarter, concerns over the spread of coronavirus were the main source of considerably heightened uncertainty in financial markets. Against this backdrop, share prices declined sharply, while the franc increased in value owing to its safe-haven status.

The Swiss franc fluctuated relatively little against the US dollar for most of the quarter under review. However, the US Federal Reserve's extraordinary cuts to the target range for its policy rate and further expansionary measures introduced in March contributed to the dollar's depreciation against the Swiss franc compared to the last monetary policy assessment in December.

Higher nominal external value of Swiss franc

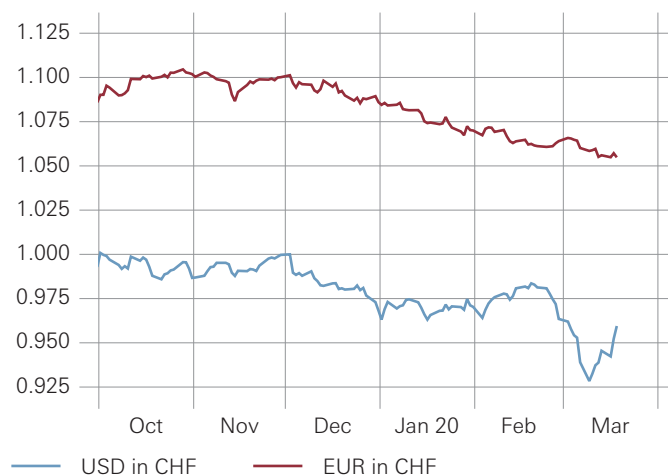
The nominal trade-weighted external value of the Swiss franc has increased significantly since the last monetary policy assessment (cf. chart 5.5). This trade-weighted appreciation reflected the franc's broad-based strength against almost all major currencies.

Real external value still high

With the Swiss franc appreciating in nominal terms, its real external value also increased and, in February, reached levels similar to those last seen in August 2019 (cf. chart 5.6). In a longer-term comparison, the Swiss franc is highly valued.

Chart 5.4

EXCHANGE RATES



Source: SNB

Chart 5.5

NOMINAL EXTERNAL VALUE OF SWISS FRANC



Source: SNB

Chart 5.6

REAL EXTERNAL VALUE OF SWISS FRANC



Source: SNB

Chart 5.7

SHARE PRICES AND VOLATILITY



Sources: Bloomberg, Thomson Reuters Datastream

Chart 5.8

SELECTED SPI SECTORS

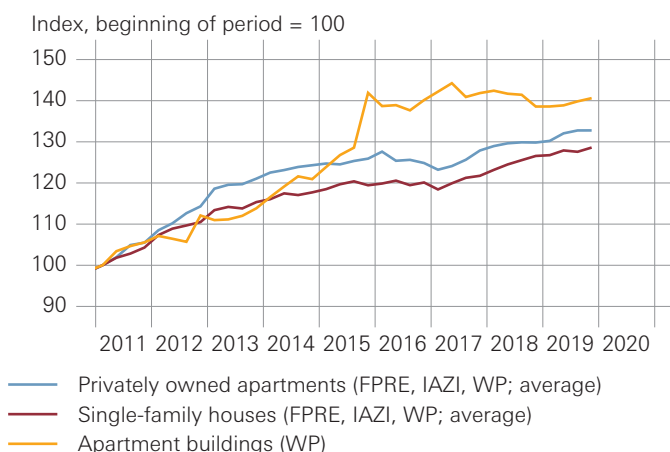


Source: Thomson Reuters Datastream

Chart 5.9

HOUSING TRANSACTION PRICES

Nominal (hedonic)



Sources: Fahländer Partner Raumentwicklung (FPRE), IAZI, Wüest Partner (WP)

SHARE AND REAL ESTATE PRICES

Share prices reflect global risks

In early 2020, share prices of the largest Swiss companies resumed the positive momentum from the previous year. In February, the Swiss Market Index (SMI) temporarily reached a new all-time high (cf. chart 5.7). However, at the end of February, deterioration in risk sentiment owing to the spread of coronavirus resulted in a sharp decline in prices. Share prices fell dramatically in March. In mid-March, the SMI was around 19% lower than at the time of the December 2019 assessment.

Heightened market uncertainty

The volatility index derived from options on SMI futures contracts is an indicator of how investors gauge uncertainty on the stock market (cf. chart 5.7). Having followed a flat course earlier in the quarter, the index registered a sharp, abrupt increase in February. This movement reflects a typical pattern: rising share prices tend to go hand in hand with decreasing uncertainty, while falling share prices are generally associated with growing uncertainty.

Movements in sectoral indices mixed

Chart 5.8 shows the movements of important sub-indices in the broad-based Swiss Performance Index (SPI), which already began to drift apart when initial concerns over the impact of coronavirus on global supply chains started to emerge. Share prices of industrial companies declined early on and were most severely affected, while those of healthcare companies performed best compared to the other sectors.

Moderate growth in residential real estate prices

In the fourth quarter of 2019, transaction prices for residential real estate grew moderately overall (cf. chart 5.9). Looking back over a longer period, transaction prices for single-family houses and privately owned apartments continued their uptrend, albeit at a slower pace. In contrast, prices for apartment buildings remained at around the same level as at end-2015 amid growing vacancy rates and an increase in supply.

MONETARY AND CREDIT AGGREGATES

Little change to monetary base

The monetary base, which consists of banknotes in circulation and sight deposits of domestic banks held at the SNB, has increased marginally since November 2019, averaging CHF 584.8 billion in February 2020 (cf. chart 5.10).

Other sight deposits held at the SNB have changed little since November. Total sight deposits at the SNB saw little change from November to February.

Slowdown in growth of broad monetary aggregates

Growth rates for the broad monetary aggregates have slowed in recent months. In February 2020, M1 (currency in circulation, sight deposits and transaction accounts) was 0.3% lower year-on-year (cf. table 5.1). In the same period, M2 (M1 plus savings deposits) fell by 0.8%, while M3 (M2 plus time deposits) remained practically unchanged.

After several years of stronger growth in monetary aggregates than in lending, money supply growth slowed considerably in the fourth quarter of 2019. This slowdown is consistent with movements in long-term interest rates, as money supply growth reacts more sensitively than lending growth to changes in long-term interest rates. In the first half of 2019, falling interest rates resulted in stronger money supply growth, while rising interest rates in the second half of the year caused money supply growth to weaken.

Virtually unchanged lending growth

Bank lending (domestic bank offices, all currencies) was up 3.3% year-on-year in the fourth quarter of 2019, compared to 3.4% in the previous quarter. Lending growth thus remained largely unchanged (cf. table 5.1).

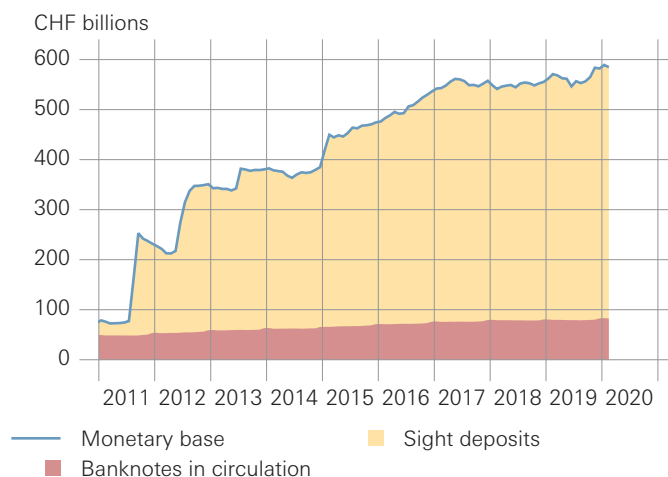
Banks' mortgage loans, which make up roughly 85% of all bank lending to domestic customers, were 3.3% higher than in Q4 2018. Growth in mortgage lending has thus slowed marginally since mid-2019 (cf. chart 5.11).

Demand for mortgages continues to be supported by low mortgage interest rates. The ten-year mortgage interest rate has fallen further since autumn 2018 and, at 1.2% in January 2020, was only just above the all-time low recorded in August 2019.

Other loans are significantly more volatile than mortgage loans (cf. chart 5.12). They grew 3.7% year-on-year in the fourth quarter of 2019 (Q3 2019: 3.4%). This slight increase is attributable to the rise in secured other loans. Meanwhile, growth in unsecured other loans slowed.

Chart 5.10

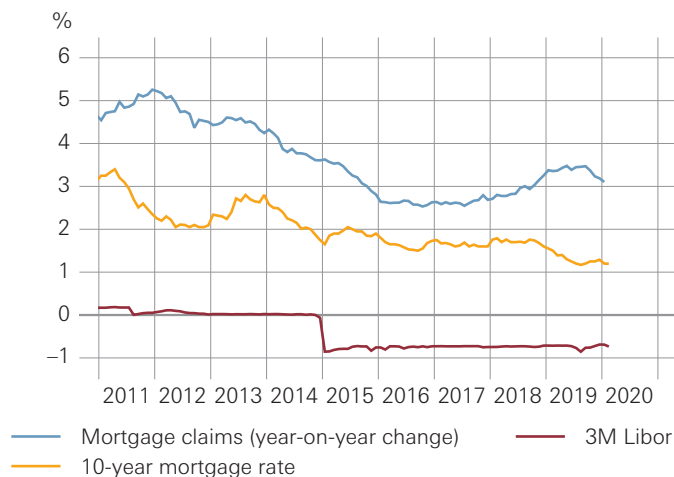
MONETARY BASE



Source: SNB

Chart 5.11

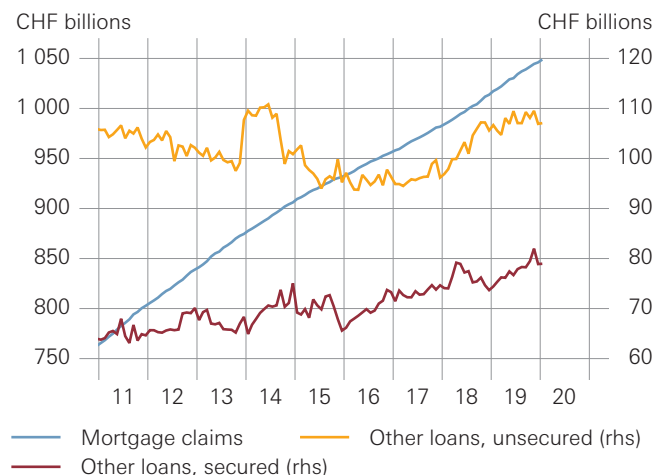
MORTGAGE CLAIMS AND INTEREST RATES



Sources: Bloomberg, SNB

Chart 5.12

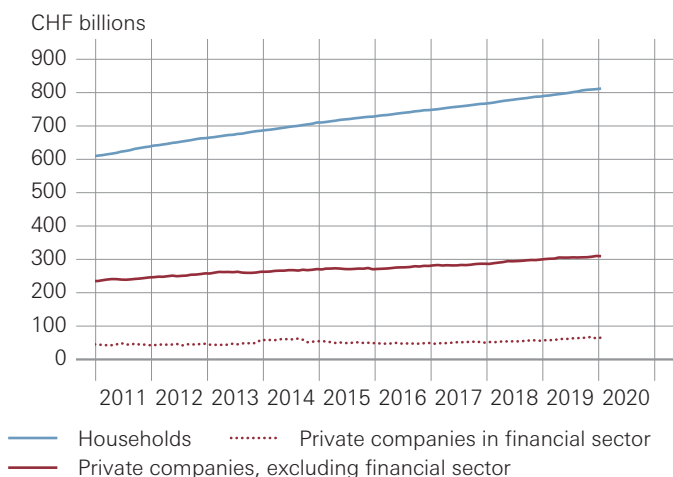
MORTGAGE CLAIMS AND OTHER LOANS



Source: SNB

Chart 5.13

LOANS TO HOUSEHOLDS AND COMPANIES



Source: SNB

Lending growth by sector

Both households and non-financial companies have continued to benefit from favourable financing conditions. This is reflected in a steady rise in bank loans extended to these two important customer groups (cf. chart 5.13).

At the end of December 2019, loans to households – of which 95% are mortgage loans – recorded a year-on-year increase of CHF 22.1 billion (2.8%). Over the same period, loans to non-financial companies (of which, 78% mortgage loans) registered a rise of CHF 10.8 billion (3.6%). Loans to financial companies (of which, 36% mortgage loans), which exhibit greater volatility at a significantly lower volume, grew by CHF 6.7 billion (11.9%).

Table 5.1

MONETARY AGGREGATES AND BANK LOANS

Year-on-year change in percent

| | 2019 | 2019 | | | | 2019 | 2020 | |
|---|------------|------------|------------|------------|------------|------------|-------------|-------------|
| | | Q1 | Q2 | Q3 | Q4 | December | January | February |
| M1 | 4.1 | 5.3 | 5.4 | 4.4 | 1.5 | 0.6 | -0.2 | -0.3 |
| M2 | 2.7 | 3.3 | 3.7 | 3.0 | 0.9 | 0.1 | -0.6 | -0.8 |
| M3 | 2.9 | 3.6 | 3.7 | 3.0 | 1.4 | 0.7 | 0.0 | 0.0 |
| Bank loans, total ^{1,3} | 3.4 | 3.6 | 3.3 | 3.4 | 3.3 | 3.3 | 3.0 | |
| Mortgage claims ^{1,3} | 3.4 | 3.4 | 3.4 | 3.5 | 3.3 | 3.2 | 3.1 | |
| Households ^{2,3} | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.7 | |
| Private companies ^{2,3} | 5.3 | 5.2 | 5.6 | 5.5 | 4.8 | 4.7 | 4.4 | |
| Other loans ^{1,3} | 3.6 | 4.6 | 2.7 | 3.4 | 3.7 | 3.6 | 2.7 | |
| Secured ^{1,3} | 2.0 | 0.7 | -2.1 | 2.8 | 7.1 | 7.1 | 6.1 | |
| Unsecured ^{1,3} | 4.8 | 7.6 | 6.5 | 3.8 | 1.4 | 1.3 | 0.4 | |

1 Monthly balance sheets (domestic bank offices, positions vis-à-vis domestic non-banks, all currencies).

2 Credit volume statistics (domestic bank offices, positions vis-à-vis domestic non-banks, all currencies).

3 Growth rates for the bank loans item and its components include information provided by banks on changes in their classification practices. Consequently, they may deviate from growth rates published on the SNB's data portal, data.snb.ch.

Source: SNB

Business cycle signals

Results of the SNB company talks

First quarter of 2020

Report submitted to the Governing Board of the Swiss National Bank for its quarterly assessment.

The appraisals presented here are based on discussions between the SNB's delegates for regional economic relations and company managers throughout Switzerland. In its evaluation, the SNB aggregates and interprets the information received. A total of 243 company talks were conducted between mid-January and the beginning of March.

Regions

Central Switzerland
Eastern Switzerland
Fribourg/Vaud/Valais
Geneva/Jura/Neuchâtel
Italian-speaking Switzerland
Mittelland
Northwestern Switzerland
Zurich

Delegates

Gregor Bäurle
Urs Schönholzer
Aline Chabloz
Jean-Marc Falter
Fabio Bossi
Roland Scheurer
Daniel Hanimann
Rita Kobel

Key points

- The talks were held between 15 January and 2 March. The spread of coronavirus only became an issue in the discussions during the final week of February, and there was then a correspondingly marked increase in the level of uncertainty expressed by company representatives. However, there was no discernible impact on turnover at that point.
- According to the information from the discussions, the Swiss economy gained momentum somewhat through to the end of February.
- Thanks to higher turnover volumes, the pressure on profit margins eased back slightly.
- Overall, utilisation of technical capacity and of infrastructure was at normal levels through to the end of February. In manufacturing, capacity utilisation remained slightly below average.
- Up until the last week of February, representatives expected moderate growth in both turnover and staff levels for the next two quarters. Coronavirus fears subsequently cast a pall over the assessments. The fragile global economy and exchange rate developments also gave rise to uncertainty.
- Addendum: Additional talks held with companies and associations between 10 and 13 March revealed that coronavirus had led to a dramatic deterioration in the situation in certain industries in a very short period of time. Other industries not directly affected expected there to be a marked worsening in business in the coming weeks (see further information on the additional survey regarding the impact of coronavirus on page 31).

CURRENT SITUATION

Solid economic development until coronavirus outbreak

Numerous companies reported that business was faring well at the beginning of the year. Information from the discussions with representatives through to the beginning of March showed that the Swiss economy had gained momentum somewhat in the first two months of 2020. However, as coronavirus spread worldwide, uncertainty over developments going forward increased markedly as the period covered by the talks drew to a close.

To the surprise of some representatives, real turnover grew more strongly in the initial months of the year than in the preceding quarter (cf. chart 1; for guidance on interpreting the charts, refer to the relevant section at the end of this report). The year-on-year comparison was also positive, and this was the case for the services, manufacturing and construction sectors alike.

Companies focused on the domestic market reported a discernible improvement in consumer sentiment in the period under review. As regards exports, representatives said business remained good with the US and also with Europe. Exports to the emerging economies likewise developed well. However, business with China was hit hard by the coronavirus epidemic and the protests in Hong Kong.

Utilisation of production capacity normal

Utilisation of technical capacity was at a normal level overall in the initial months of the year (cf. chart 2). Utilisation remained above average in the construction sector, but capacity was said to be still underutilised in manufacturing.

Some companies expected bottlenecks and delays in deliveries from China or other countries affected by coronavirus at that time.

Appropriate staffing levels

According to the company representatives, staff numbers were roughly in line with needs, with levels reported as being somewhat low in the construction and services sectors.

In many industries and in most regions, recruitment was still said to be difficult. The lack of specialists was mentioned roughly as frequently as in the previous quarter, and posed a key challenge for many companies. Demand remained particularly strong for IT and other technical specialists, and for building site managers. Many of the representatives attach great importance to in-house training.

Improved profit margins

Pressure on profit margins eased at the beginning of the year, this being attributable to higher turnover volumes coupled with cheaper components, intermediate products and raw materials. For the most part, margins were reported as being at 'sustainable' to 'comfortable' levels. That said, certain companies mentioned that their margins were suffering on account of the stronger Swiss franc.

Chart 1

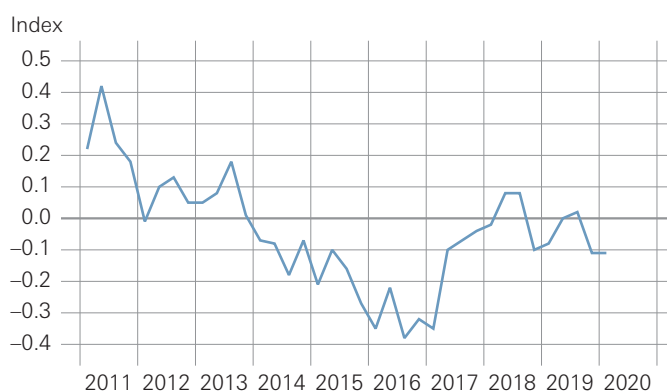
TURNOVER COMPARED TO PREVIOUS QUARTER



Developments in real turnover compared to the previous quarter. Positive (negative) index values signal an increase (decrease).
Source: SNB

Chart 2

CAPACITY UTILISATION



Current utilisation of technical capacity / business infrastructure compared to a normal level. A positive (negative) index value signals utilisation is higher (lower) than normal.
Source: SNB

Additional survey conducted from 10 to 13 March 2020 on the impact of coronavirus

In light of the rapid developments associated with coronavirus, the delegates for regional economic relations conducted additional talks with some 100 companies and associations between 10 and 13 March. These discussions thus took place before the Federal Council's decision on 16 March to close businesses nationwide.

The talks confirmed that the business situation in the sectors already hardest hit by the coronavirus crisis had drastically deteriorated within a very short time. Furthermore, the impact is also increasingly being felt by sectors that had previously been unaffected. Given this environment, companies are watching the development of the exchange rate with great concern.

Tourism, hospitality, entertainment and leisure, the watchmaking industry and bricks-and-mortar non-food retail all experienced a pronounced slump in turnover. As an initial measure, many companies are looking to introduce short-time working in order to counter impending liquidity bottlenecks. Further steps include reducing temporary staff, overtime and holiday

entitlement. Some companies have also introduced a hiring freeze and are reviewing or postponing investment projects. Working from home has been broadly implemented and is being expanded.

The retail trade is seeing a massive increase in the demand for food, protection and hygiene items, as well as fuel. Online distribution channels are experiencing a significant upturn and increased expansion. Pressure on the healthcare sector has grown considerably. By contrast, large sections of the manufacturing, construction and services sectors are, for the time being, only indirectly or slightly affected.

Supply and delivery bottlenecks have not yet been reported on a broad basis, with the exception of some antiviral protective items as well as, in certain instances, electronic components and metal deliveries from Asia. Companies which operate or work together with factories in China are, however, noticing that production there is gradually picking up again.

The closure of schools and borders is exacerbating the situation for companies with regard to staff management.

DEVELOPMENTS IN INDIVIDUAL INDUSTRIES

According to the company talks, real turnover in the trade sector was up on the previous quarter, particularly in retail, yet infrastructure remained underutilised in wholesale and retail trade alike. Online sales channels mostly showed high growth rates, and there was increased willingness to use or expand these. Certain companies said cross-border shopping had risen again slightly owing to the strong Swiss franc.

In the financial sector – i.e. among banks, insurers and asset managers – business volumes were markedly higher both quarter-on-quarter and year-on-year. Banks profited from market volatility and the attendant increase in transaction volumes. The interest margin business and the competitive environment were still regarded as being challenges.

Infrastructure was underutilised in the tourism and hospitality industries. Certain regions reported bookings being cancelled by Asian tour groups on account of coronavirus. The companies expected that business development would be impacted by the cancellation/postponement of a wide range of events.

Turnover in the ICT industry was said to be clearly higher both quarter-on-quarter and year-on-year, this driven by digital transformation, cybersecurity requirements and rising demand from the fintech area. Specialist staff were still in short supply. ICT companies were already experiencing delays in hardware deliveries from China.

Companies in the healthcare sector reported dynamic business performance.

In manufacturing, turnover was higher in all industries with the exception of machinery. Companies in the plastics production and processing, pharmaceuticals, and metals manufacturing and processing industries fared particularly well in this regard. In the case of machinery manufacturers, however, turnover stagnated. Utilisation in the machinery industry was lower than normal, and profit margins were under considerable pressure. In the watchmaking industry, demand was down markedly on account of coronavirus. Suppliers to the automotive industry continued to feel the impact of the uncertainties stemming from technological change and heightened environmental awareness.

In construction, seasonally adjusted turnover was higher quarter-on-quarter, this being in part due to weather-related factors. Business was particularly dynamic in the finishing trade and civil engineering, but turnover declined in the case of building construction.

The talks held during the current quarter indicate continuing signs of an impending slowdown in new residential building activity. Rising vacancy rates in the case of new-build apartments are also driving demand for the renovation of older buildings. A number of building construction and civil engineering companies are increasingly shifting the focus of their activities towards civil engineering as well as infrastructure projects with a view to improving margins.

OUTLOOK

Cautious optimism despite high level of uncertainty

Through towards the end of the review period, companies still said they expected turnover to be higher in the coming two quarters (cf. chart 3). However, in the final week there were increasing concerns over the impact of coronavirus. The representatives indicated that the rapid developments in connection with this epidemic were making it difficult to assess the outlook.

That said, the impact of coronavirus was unanimously regarded as being a temporary phenomenon. Companies said they expect there to be catch-up effects in certain instances.

In keeping with the slightly improved turnover expectations, through to the end of the quarter company representatives anticipated increased utilisation of their technical production capacity and infrastructure (cf. chart 4).

Caution regarding investment

Companies' willingness to invest remained modest. Firms in the manufacturing and services sectors intended to leave their expenditures on equipment investment and construction at existing levels in the next twelve months. For their part, construction firms planned to increase their spending slightly. Just under 30% of the companies surveyed said they intend to use their investments primarily to expand their production capacity. The low interest rate environment is continuing to support investment, which is focused above all on rationalisation projects as well as the expansion and modernisation of IT.

Stable price expectations

Representatives from the manufacturing and services sectors said they expected purchase and sales prices to be stable over the next two quarters, whereas construction firms anticipated declines. However, the companies had difficulty in assessing the impact the coronavirus epidemic will have on purchase prices. On the one hand, prices could rise as a result of shortages, but on the other they could fall as a result of a slowing global economy.

Chart 3

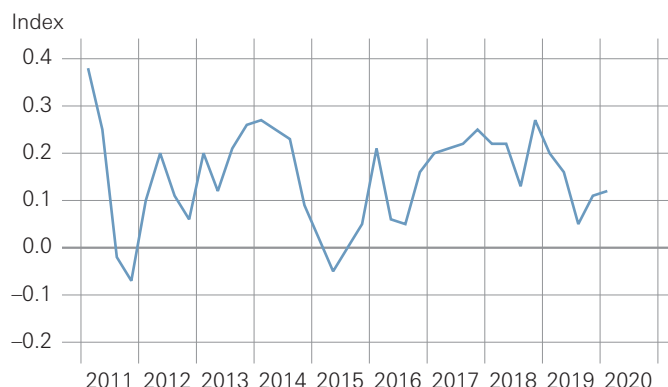
EXPECTED TURNOVER



Expected developments in real turnover over the coming two quarters. Positive (negative) index values indicate turnover is expected to be higher (lower).
Source: SNB

Chart 4

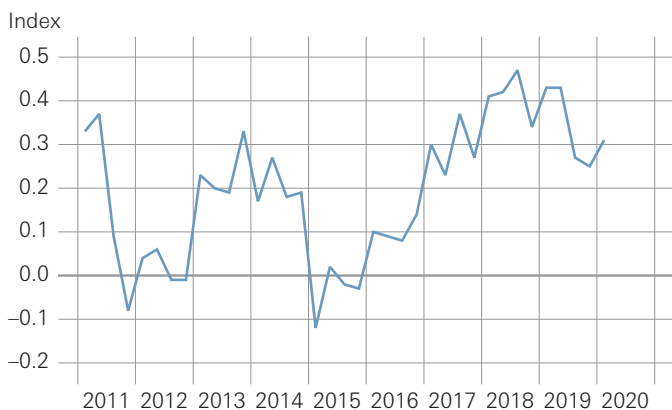
EXPECTED CAPACITY UTILISATION



Expected developments in utilisation of technical capacity / business infrastructure over the coming two quarters. Positive (negative) index values indicate utilisation is expected to be higher (lower).
Source: SNB

Chart 5

EXPECTED EMPLOYMENT



Expected developments in staff numbers over the coming two quarters. Positive (negative) index values indicate an expected increase (decrease). Source: SNB

Planned expansion in staff numbers

Representatives said their companies intend to further increase staff numbers over the coming two quarters (cf. chart 5). Just under 40% of companies planned to hire more staff. These included, in particular, firms in areas such as ICT, architecture and engineering, real estate, facility management services, healthcare, pharmaceuticals and the finishing trade. Meanwhile wholesale companies said they planned to reduce staff levels slightly.

Based on the answers available, companies have increased wages by an average of 1.25% this year or plan to do so.

ENVIRONMENT AND RISKS

The uncertainty is currently very high on account of coronavirus. When the company talks were conducted, representatives had difficulty in assessing the implications. Concerns over the strength of the Swiss franc also increasingly came back to the fore.

Representatives remained concerned about the fragile global economy, protectionist tendencies and regulatory changes, as well as the persisting low interest rate environment. However, the low interest rates are also welcomed as they facilitate investment and help counter the Swiss franc’s tendency to appreciate. Uncertainty was fuelled further by delays in drawing up the institutional framework agreement with the EU and by the imbalances in the housing market.

The issue of sustainability was also brought up in many discussions. Companies recognise potential for new fields of business and are seeking to position themselves accordingly.

Many firms are engaging in digitalisation efforts aimed at rationalising and modernising their operating procedures. Numerous companies stressed the significance of cyber risks.

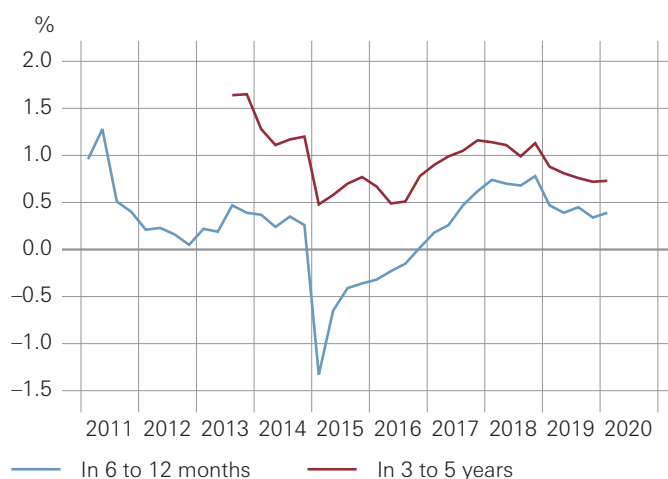
INFLATION EXPECTATIONS

The delegates also ask company representatives about their short and long-term inflation expectations as consumers.

Short-term inflation expectations – measured in terms of the consumer price index – were essentially unchanged. The average for the next six to twelve months is 0.4% (blue line in chart 6), compared to 0.3% in the previous quarter. Over the medium term – i.e. with a time horizon of three to five years (red line in chart) – the average is unchanged at 0.7%.

Chart 6

EXPECTED INFLATION



Source: SNB

About this report

Approach

Each quarter, the SNB's delegates for regional economic relations hold talks with managers of companies throughout Switzerland. The main results of these discussions are summarised in the 'Business cycle signals' report.

Approximately 240 companies are visited every quarter. The selection of companies reflects the industrial structure of the Swiss economy based on GDP and employment. Industries subject to stronger cyclical fluctuations are somewhat over-represented, while the public sector and agriculture are not taken into consideration. Different companies are visited from one quarter to the next.

In the talks, the SNB's delegates capture primarily qualitative information. The discussions are nevertheless structured in such a way as to allow the delegates to grade part of the qualitative information received according to a numeric scale. This enables the results to be aggregated and represented graphically.

The five-tier scale ranges from 'substantially higher' or 'much too high' (+2), 'slightly higher' or 'somewhat high' (+1), 'the same' or 'normal' (0), 'slightly lower' or 'somewhat low' (-1), to 'substantially lower' or 'much too low' (-2).

Interpreting the charts

The charts are to be regarded as a numeric summary of the qualitative information received. The index value shown represents the average of the findings from all companies visited. When interpreting the curves, particular relevance should be attached to their overall development, rather than to their numeric level or individual changes.

Additional information

Further information on the 'Business cycle signals' report is available at www.snb.ch, *The SNB*, *SNB regional network*.

The response of the Swiss franc to SNB policy rate changes

Fabian Fink, Lukas Frei, Christian Grisse, Thomas Maag, Tanja Zehnder ¹

Abstract

What is the response of the Swiss franc to SNB policy rate changes? Standard economic theory suggests that a decrease in the policy rate weakens the exchange rate. But this effect is not always visible simply by observing interest rate and exchange rate movements. This is because exchange rates and interest rates reflect not just monetary policy but also other drivers such as safe-haven flows into the Swiss franc. Isolating the effect of monetary policy on the exchange rate therefore requires careful analysis. This article explains the mechanism by which a policy rate cut leads to an exchange rate depreciation, reviews the empirical evidence and summarises the results of two recent studies by SNB staff, which find that the Swiss franc does indeed depreciate following a decrease in the SNB policy rate. Theory and empirical evidence therefore suggest that lowering the policy rate into negative territory has weakened the Swiss franc. Conversely, an SNB policy rate hike would lead to an appreciation of the Swiss franc.

¹ We are grateful to Andreas Fuster, Petra Gerlach, Carlos Lenz, Thomas Nitschka, Jonas Stulz and Mathias Zurlinden for their useful comments.

1. INTRODUCTION

The exchange rate matters for the Swiss economy and inflation. Thus, it also matters for the monetary policy of the Swiss National Bank, whose mandate is to ensure price stability while taking due account of economic developments.

For a small open economy like Switzerland's, international trade plays a very important role.¹ Exchange rate movements affect the competitiveness of Swiss goods and services in international markets. A Swiss franc depreciation makes Swiss exports more competitive. This boosts economic activity not only in the export sector, but also throughout the economy. A booming economy, in turn, will put upward pressure on inflation. Moreover, because many goods and services consumed in Switzerland are imported, and because they become more expensive when the Swiss franc depreciates, a depreciation will also directly boost inflation in Switzerland.²

SNB monetary policy decisions influence the exchange rate. The SNB's monetary policy statements have regularly emphasised monetary policy's influence on the exchange rate. For example, in its December 2019 monetary policy assessment, the SNB stated that negative interest rates 'counteract the attractiveness of Swiss franc investments and thus ease the upward pressure on the currency'. When Swiss interest rates fall, investors move out of Swiss franc investments and into foreign currency investments, causing the Swiss franc to depreciate.

This article explains the effect of monetary policy rates on exchange rates and summarises the empirical evidence supporting the theoretical assertion that the Swiss franc depreciates when the SNB lowers its policy rate.

2. THEORY

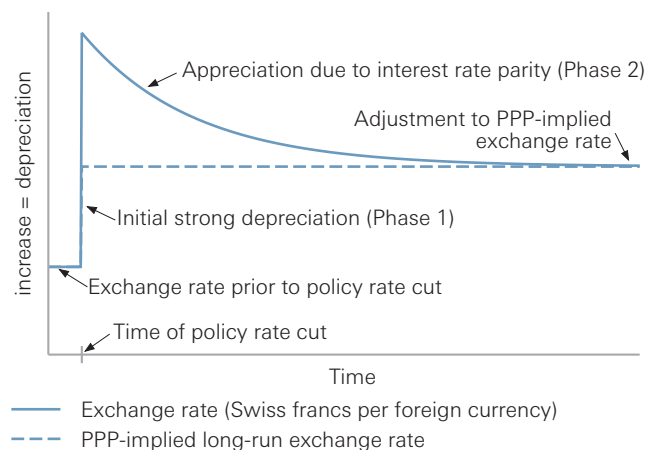
Two key economic principles explain the link between the central bank policy rate and the exchange rate: purchasing power parity (PPP) and interest rate parity.³ To explain the exchange rate response to a policy rate cut, it is easiest to start with the long-run effect of the rate cut, and then discuss the adjustment of the exchange rate towards its new long-run level.

PPP determines the exchange rate in the long run. PPP says that a given amount of money should buy the same goods in Switzerland and abroad. That is, the price of Swiss and foreign goods should be equal when converted into the

same currency.⁴ When the SNB cuts its policy rate, this easing of monetary policy boosts economic activity in Switzerland, which eventually leads to higher prices. With unchanged prices abroad, PPP requires a weaker Swiss franc in the long run (cf. dashed line in chart 1). This means that people get more Swiss francs for one unit of foreign currency and hence can pay the higher Swiss prices.

Chart 1

STYLISED EXCHANGE RATE RESPONSE TO CENTRAL BANK POLICY RATE CUT



Source: SNB

Interest rate parity explains how the exchange rate adjusts to policy rate changes in the short run. It states that Swiss franc and foreign currency investments should yield the same expected return, so that investors are equally willing to hold them.⁵ Measured in foreign currency, the expected return on a Swiss franc investment is the Swiss interest rate plus the expected Swiss franc appreciation. The return on foreign currency investments is simply the foreign interest rate. To illustrate how interest rate parity works, suppose that SNB and foreign policy rates are initially equal, with investors expecting a stable Swiss franc in line with interest rate parity. After the SNB cuts its policy rate, the interest rate is lower in Switzerland than abroad, so that investors must expect the Swiss franc to appreciate, in order to compensate them for the lower interest rate in Switzerland.

1 For example, in 2018 Swiss trade (exports + imports) amounted to 120% of GDP.

2 For information on the effect of exchange rates on the Swiss economy, cf., for example, Baurle and Steiner (2015). Stulz (2007) and Bonadio, Fischer and Sauré (2018) present empirical evidence for the pass-through of exchange rate changes to Swiss prices.

3 A more detailed discussion of the mechanism outlined in this section can be found in many economic textbooks, such as for example Krugman, Obstfeld and Melitz (2018), chapters 14–16.

4 This is how the literature defines 'absolute' PPP. In practice there are deviations from absolute PPP, for example because trade costs may make it unprofitable to take full advantage of PPP deviations. The weaker 'relative' PPP theory states that the price of domestic goods in terms of foreign goods – the real exchange rate – should be stationary (rather than constant to one, as absolute PPP requires). In practice, there are persistent deviations from relative PPP in the short run, although it does appear to hold in the long run (cf., for example, Rogoff (1996)). In fact, neither absolute nor relative PPP is needed to arrive at the conclusion that policy rate cuts weaken the nominal exchange rate in the long run. The weaker condition – that nominal variables (such as the SNB's policy rate) do not affect real variables (such as the Swiss franc real exchange rate) in the long run – is sufficient. An easing of monetary policy leads to higher inflation and a weaker nominal exchange rate, compensating for the inflation differential versus foreign countries and leaving the real exchange rate unchanged in the long run.

5 This is referred to as 'uncovered' interest parity (UIP) in the literature (as opposed to 'covered' interest parity, which does not entail exchange rate risk). In practice, there may be deviations from UIP. This is the subject of a large body of empirical literature (cf. Engel (2014)). These UIP deviations do not imply, however, that policy rate cuts do not weaken the exchange rate.

Together, PPP and interest rate parity imply that the Swiss franc depreciates immediately after an SNB policy rate cut (Phase 1). An immediate and strong depreciation after the interest rate cut is needed to be compatible with an appreciation in Phase 2 and a weaker long-run exchange rate. This is known as ‘overshooting’ (cf. chart 1).

Economic theory thus suggests that the Swiss franc depreciates markedly following a cut in the SNB policy rate, and remains weaker than before the cut in the long run. Several other theoretical considerations are important as well. First, the effects described here do not depend on the interest rate level. Cutting interest rates below zero depreciates the Swiss franc in the same way as when interest rates are positive. When it comes to assessing the exchange rate effects of rate cuts in negative territory, it is therefore instructive to examine the effects of policy rate changes on the exchange rate before the global financial crisis, when Swiss interest rates were well above zero.

Second, the effects of domestic and foreign interest rate changes on the exchange rate are symmetric. If policy rates abroad are raised, the bilateral Swiss franc exchange rate depreciates in the same way as it does when the SNB cuts its policy rate. If interest rates are cut in both Switzerland and abroad at the same time and by the same amount, the exchange rate should stay stable. What matters for the value of the Swiss franc is the differential between Swiss interest rates and interest rates abroad. For instance, since the onset of the global financial crisis, the SNB has cut its policy rate several times, but ECB policy rates have come down even more strongly. The interest rate differential between ECB and SNB policy rates has therefore narrowed. It is not surprising, then, that the Swiss franc has appreciated against the euro since the start of the crisis, despite the SNB’s policy rate cuts.

Chart 2

EURCHF EXCHANGE RATE AND EUR-CHF INTEREST RATE DIFFERENTIAL (3-MONTH LIBOR)

Daily data



Sources: ICE Benchmark Administration, SNB

Third, the exchange rate responds as soon as market participants start expecting a policy rate change. When, later on, the policy rate is actually changed, the response may be close to nil. To assess the relationship between interest rates and exchange rates, we need to look at longer-maturity market interest rates, rather than central bank policy rates. Market rates, such as the three-month Libor, reflect the current monetary policy stance and market participants’ expectations about future monetary policy. Suppose, for example, that the SNB cuts its policy rate, and that this decision comes as a surprise to markets. Because the rate cut is unexpected, market rates also decline, and the Swiss franc depreciates. By contrast, when an SNB rate cut is anticipated, market rates change when the anticipation is formed, but do not change subsequently when the rate cut is announced. Consequently, empirical analyses typically rely on market interest rates.

3. A FIRST LOOK AT THE DATA

The raw data appear to show no clear relationship between the Swiss franc exchange rate and interest rate differentials. Chart 2 plots EURCHF – the price of one euro in Swiss francs – against the differential between euro area and Swiss short-term interest rates (three-month Libor), using daily data since 2000.⁶ According to theory, the Swiss franc should depreciate (move up in the chart) when the Swiss interest rate declines relative to the euro area interest rate (the interest rate differential moves up in the chart). On average over the long run, this co-movement is visible, but the relationship is weak; and in the short run, EURCHF and the interest rate differential have often not moved in the same direction.

Why do we not see the expected effect of changes in the interest rate differential on the exchange rate? Because interest rate and exchange rate movements reflect not just monetary policy but also the effects of other drivers.

In principle, various types of economic news can move interest rates and exchange rates. For example, a data release showing that Swiss unemployment is higher than anticipated by markets is likely to be associated with lower Swiss interest rates and a weaker Swiss franc. This is because markets expect more expansionary monetary policy in response to worse-than-expected economic conditions.

⁶ We focus on three-month Libor because this was the reference rate for SNB monetary policy between 2000 and 2019. During this period, the SNB ensured that three-month Libor was within the target range set by the SNB. Within the range, three-month Libor was left free to move, reflecting expected future policy rate changes. The three-month Libor reflects the borrowing costs for three-month, unsecured loans on the interbank market.

By contrast, when safe-haven capital flows are the main driver of exchange rate movements, exchange rates and interest rate differentials move in opposite directions. Safe-haven capital inflows into Switzerland cause the Swiss franc to appreciate, putting downward pressure on economic activity and inflation. This may lead to expectations of SNB monetary policy easing, and thus lower interest rates. This is an example of lower Swiss interest rates being associated with a stronger Swiss franc.

To sum up: depending on the drivers, the franc may appreciate or depreciate when Swiss interest rates fall. An easing of monetary policy weakens the Swiss franc, but this effect can be eclipsed by other forces. It is therefore difficult to quantify the effect of interest rate changes on the exchange rate.

4. MEASURING THE EFFECT OF INTEREST RATE CHANGES ON THE EXCHANGE RATE

Empirical studies – including two new papers on Switzerland – have sought to estimate the impact of interest rate changes on the exchange rate by using econometric methods to isolate the causal effect of interest rates. Table 1 lists selected papers.⁷ These studies consistently find that the exchange rate depreciates in the short run following a decrease in the interest rate, as predicted by theory. The results of studies investigating the longer-term effects of more expansionary monetary policy show that, in the long run, the exchange rate remains weaker than before the policy rate change. These results hold both for the Swiss franc and for other major currencies.

Beyond these qualitative results, the papers listed in Table 1 arrive at different conclusions with respect to the estimated size of exchange rate responses to interest rate changes; the estimates range from about 1% to 25% exchange rate response for a 1 percentage point (pp) interest rate change. This wide range reflects differences in sample period, currency studied and methodology.

Table 1

| Studies for the Swiss franc | Studies for other currencies |
|-----------------------------|--|
| Cuche-Curti et al. (2009) | Bjørnland (2009) |
| Ferrari et al. (2017) | Eichenbaum and Evans (1995) |
| Fink et al. (2020) | Faust and Rogers (2003) |
| Grisse (2020) | Inoue and Rossi (2019) |
| Kugler (2020) | Kearns and Manners (2006) ⁹ |
| Lenz and Savioz (2009) | Kim et al. (2017) |
| Rinaldo and Rossi (2010) | Rogers et al. (2018) |
| Rudolf and Zurlinden (2014) | Scholl and Uhlig (2008) |

In particular, the time horizon for which the exchange rate response is estimated matters for the results: as explained in section 2, the exchange rate response to a policy rate cut is likely to be very different in the short run and the long run. Kearns and Manners (2006), for example, study US dollar exchange rates and find that an unexpected 1 pp policy rate cut is associated with a 1.4% depreciation in the first hour after the announcement. Similarly, Rinaldo and Rossi (2010) focus on the effect of Swiss interest rate changes on the Swiss franc in the first 20 minutes after SNB monetary policy announcements. They find that the Swiss franc depreciates by 0.7% in response to a 1 pp decrease in the Swiss franc three-month Libor.⁸ Kugler (2020) estimates that a 1 pp decrease in Swiss franc three-month Libor is associated with a 4% depreciation of the Swiss franc against the euro and the US dollar on the same day. Papers that study the long-run impact, such as Eichenbaum and Evans (1995), Scholl and Uhlig (2008), and Kim et al. (2017), often find that when monetary policy is loosened, the exchange rate depreciates not just in the short run but persistently, with a maximum exchange rate response reached only after about one to two years.⁹ Lenz and Savioz (2009) find that a 1 pp drop in the Swiss franc three-month Libor driven by more expansionary SNB monetary policy permanently weakens the Swiss franc against the euro by more than 25%.

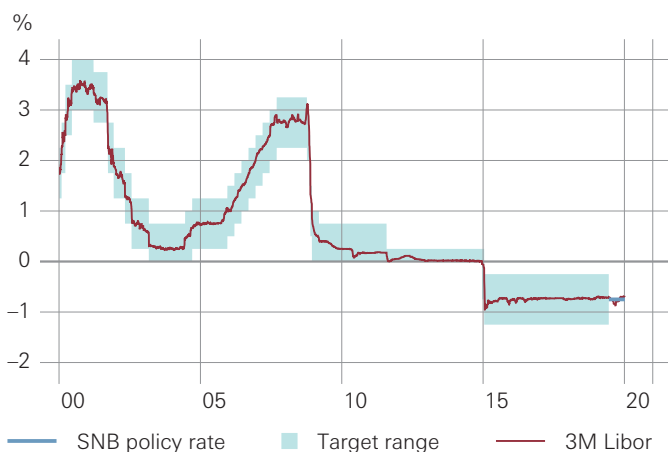
⁷ Papers were selected to cover a variety of estimation approaches, data frequencies, and currency pairs.

⁸ The estimate reported in Ferrari et al. (2017) for the Swiss franc response to Swiss interest rates, which is also based on intraday data, is much higher, at 25% for a 1 pp interest rate change. This estimate should be interpreted with care, however, since it is based on the period where the minimum exchange rate of Swiss franc 1.20 per euro was in effect.

⁹ There is no consensus on this so-called 'delayed overshooting puzzle' in the empirical literature. For example, Bjørnland (2009), Rogers et al. (2018), and Inoue and Rossi (2019) find that the exchange rate depreciates on impact when the central bank eases policy, typically begins to appreciate shortly thereafter, but remains weaker than before the monetary policy easing in the long run. This is in line with the theory-implied adjustment shown in chart 1.

Chart 3

TARGET RANGE FOR 3-MONTH LIBOR, SNB POLICY RATE, AND MONEY MARKET RATES



Sources: Bloomberg, SIX Swiss Exchange Ltd, SNB

Two recent studies by SNB staff, Fink et al. (2020) and Grisse (2020), confirm this finding using data on the Swiss franc three-month Libor and the Swiss franc exchange rate between January 2000 and August 2011. As chart 3 shows, two full SNB policy rate cycles occurred during this period, providing the variation in policy rates needed to estimate their effects on the Swiss franc.¹⁰

The studies do not use more recent data because, between September 2011 and January 2015, the minimum exchange rate of Swiss franc 1.20 per euro was in place. The SNB stood ready to enforce this minimum exchange rate with unlimited foreign exchange interventions, if necessary. Since the minimum exchange rate was discontinued in early 2015, the SNB has regularly emphasised its willingness to remain active on the foreign exchange market. Actual and expected interventions make it difficult to interpret Swiss franc movements in relation to changes in the interest rate differential over the entire period from 2000 until today.¹¹ Moreover, since September 2011, the SNB has effectively changed its policy rate only once, compared with 26 changes between January 2000 and August 2011.¹²

Fink et al. (2020) focus on days around SNB monetary policy assessment meetings. Their approach assumes that news about monetary policy is relatively more important on the days of an SNB monetary policy assessment meeting than on other days. This allows causal effects of policy rate changes on Swiss franc exchange rates to be estimated using daily data. The authors find that the Swiss franc depreciates against both the euro and the US dollar in response to decreases in the Swiss franc three-month Libor. A 1 pp decline yields a Swiss franc depreciation of approximately 2% on the same day.¹³

Grisse (2020) looks at weekly data for the Swiss franc, interest rates and stock prices over the entire 2000–2011 sample. Under plausible assumptions about the co-movement of stock prices and interest rates, the influence of monetary policy can be distinguished from that of other drivers, and monetary policy's effect on the exchange rate estimated.¹⁴ He finds that after a decrease in the Swiss franc three-month Libor, the Swiss franc depreciates immediately and remains permanently weaker than before the interest rate change. A 1 pp decline in Swiss franc three-month Libor is estimated to lead to a Swiss franc depreciation of about 4% against the euro and 3% against the US dollar within the first week. The Swiss franc remains weaker against both the euro and the US dollar in the long run.

5. IMPLICATIONS FOR MONETARY POLICY

With central banks around the world cutting their policy rates more strongly than the SNB in the aftermath of the global financial crisis, the traditional interest rate differential versus the Swiss franc has narrowed. Swiss interest rates have historically been lower than those abroad, in part because inflation has been lower in Switzerland, but also because investors value the Swiss franc as a safe-haven currency, particularly in times of high uncertainty. The SNB's decision to introduce a negative interest rate has helped to restore, at least in part, the historical interest rate differential versus other currencies, thereby reducing the attractiveness of holding Swiss franc investments.

¹⁰ In the SNB's monetary policy strategy, the target range for the three-month Libor was replaced by the SNB policy rate in June 2019. This change does not affect the conclusions regarding the response of the Swiss franc to an SNB interest rate change.

¹¹ The SNB also intervened in the foreign exchange market in 2009 and 2010. This does not affect the analysis in Fink et al. (2020), however, because they focus on the effect of interest rates on the Swiss franc around the time of SNB monetary policy assessment meetings. The analysis in Grisse (2020) is robust to using a shorter sample ending in 2007.

¹² The SNB announced a negative interest rate of -0.25% on 18 December 2014, effective 22 January 2015. This interest rate was reduced further to -0.75% on 15 January 2015 (again effective 22 January 2015).

¹³ Many empirical studies suggest that the strongest exchange rate response to an interest rate change occurs after a certain time lag.

¹⁴ For instance, tighter monetary policy – or the market expectation of monetary policy tightening – is associated with higher interest rates and lower stock prices. Disappointing economic news is associated with lower stock prices as well, but also with lower interest rates as central banks are expected to loosen monetary policy in a downturn.

The analysis presented in this article shows that SNB rate cuts weaken the Swiss franc. According to economic theory, this mechanism continues to work when policy rates are taken into negative territory. Moreover, globally, the impact of monetary policy on the exchange rate is found to have strengthened in recent years (Ferrari et al. (2017)).¹⁵ Thus, the impact of a change in the policy rate on the exchange rate is likely to be at least as strong today as it was in the past. Empirical studies also show that the more surprised markets are, the greater the effect of policy rate changes on the exchange rate.¹⁶ Hence, if the SNB were to raise its policy rate unexpectedly, the Swiss franc would appreciate markedly.

¹⁵ Ferrari et al. (2017) argue that as interest rates have declined globally, the effective lower bound on nominal interest rates has become increasingly binding so that the exchange rate bears a larger share of the adjustment to policy rate changes.

¹⁶ Cf., for example, Ferrari et al. (2017), Kearns and Manners (2006), and Rinaldo and Rossi (2010).

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Chronicle of monetary events

The chronicle summarises the most recent monetary events. For events dating further back, please refer to SNB press releases and the *Annual Report* at www.snb.ch.

At its quarterly assessment of 19 March, the SNB leaves its policy rate and the interest rate on sight deposits with the SNB at -0.75% . However, it increases the threshold factor from 25 to 30, thus raising the exemption threshold. In so doing, the SNB strengthens the banks so that they can perform their key role in the economy. The SNB is intervening more strongly in the foreign exchange market. The Swiss franc is even more highly valued, and the world's financial markets are under strong pressure. Negative interest and the interventions serve to counteract the attractiveness of Swiss franc investments and thus ease pressure on the currency. In this way, the SNB stabilises price developments and supports economic activity.

March 2020

At its quarterly assessment of 12 December, the SNB leaves its policy rate and the interest rate on sight deposits with the SNB at -0.75% . The SNB reaffirms that it will remain active in the foreign exchange market, as necessary. In the SNB's view, the Swiss franc is highly valued, and the situation on the foreign exchange market is still fragile. Negative interest and the willingness to intervene serve to counteract the attractiveness of Swiss franc investments and thus ease pressure on the currency. In this way, the SNB stabilises price developments and supports economic activity.

December 2019

At its quarterly assessment of 19 September, the SNB leaves its policy rate and the interest rate on sight deposits with the SNB at -0.75% . The SNB also adjusts the basis for calculating negative interest, thereby raising the exemption threshold for the banking system and reducing negative interest income for the SNB. The SNB reaffirms that it will remain active in the foreign exchange market, as necessary. In the SNB's view, the Swiss franc is highly valued, and the situation on the foreign exchange market is still fragile. Negative interest and the willingness to intervene serve to counteract the attractiveness of Swiss franc investments and thus ease pressure on the currency. In this way, the SNB stabilises price developments and supports economic activity.

September 2019

At its quarterly assessment of 13 June, the SNB leaves the interest rate on sight deposits with the SNB at -0.75% . The SNB reaffirms that it will remain active in the foreign exchange market, as necessary. In the SNB's view, the Swiss franc is highly valued, and the situation on the foreign exchange market is still fragile. The negative interest rate and the SNB's willingness to intervene in the foreign exchange market as necessary are intended to keep the attractiveness of Swiss franc investments low and ease pressure on the currency. The expansionary monetary policy aims to stabilise price developments and support economic activity.

June 2019

On 13 June, the SNB introduces the SNB policy rate and announces that it will use this rate in taking and communicating its monetary policy decisions going forward. The SNB policy rate replaces the target range for the three-month Libor. Interest on sight deposits held by banks at the SNB currently corresponds to the SNB policy rate and remains at -0.75% . The SNB will seek to keep the secured short-term Swiss franc money market rates close to the SNB policy rate.

At its quarterly assessment of 21 March, the SNB leaves the interest rate on sight deposits with the SNB at -0.75% and its target range for the three-month Libor at between -1.25% and -0.25% . The SNB reaffirms that it will remain active in the foreign exchange market, as necessary. In the SNB's view, the Swiss franc is highly valued, and the situation on the foreign exchange market is still fragile. The negative interest rate and the SNB's willingness to intervene in the foreign exchange market as necessary are intended to keep the attractiveness of Swiss franc investments low and ease pressure on the currency. The expansionary monetary policy aims to stabilise price developments and support economic activity.

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