



KOF Bulletin

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EDITORIAL

Dear readers,

The strong Swiss franc has been keeping Swiss enterprises on their toes for decades. Calm was established for a few years by the intervention of the Swiss National Bank (SNB) in September 2011 and the introduction of a euro-franc exchange rate floor. However, this was seriously disrupted on 15 January 2015 when the SNB removed the floor. We all know what happened next. Now various researchers, including three teams with KOF involvement, have been commissioned by the State Secretariat for Economic Affairs (SECO) to examine the effects to date of the increase in the value of the franc. Whilst the effects of the dynamic on the Swiss economy were, all things considered, practically neutral prior to the franc shock (2001–2014) thanks to cheaper imports, after the exchange rate floor was removed there was some shedding of jobs, in particular in the industrial sector, whilst investment and R&D spending by businesses with a strong focus on exports also came under significant pressure. These KOF studies do not cover the tourism sector, even though it is heavily influenced by the exchange rate. Following a long series of negative reports from this sector, current forecasts are rather most optimistic, owing in particular to an increase in tourist numbers from China. At the same time, the discussion concerning the Swiss franc must not overlook the fact that developments are underway within the currency system that may pose a fundamental challenge to the classic currencies, specifically due to the increasing presence of crypto-currencies using blockchain technology. However, it remains to be seen whether these have what it takes to turn into a new world currency.

We hope you enjoy your read,

David Iselin

ECONOMY AND RESEARCH

The Saga of the Swiss Franc: The Increase in the Value of the Franc and its Implications



The State Secretariat for Economic Affairs (SECO) has commissioned six external studies to investigate the effects of the increase in the value of the Swiss franc on the structure of exports, employment, investment and R&D spending. These studies also include three KOF studies, which show how the increase in the value of the franc has impacted on the competitiveness of the economy as a whole, including specifically employment, prices for industrial goods, investment and spending on research and development by exporters.

Minimal effects on competitiveness

In a core study, Peter H. Egger (KOF), Johannes Schwarzer (CEP – Council on Economic Policies) and Anirudh Shingal (World Trade Institute) looked at the effects of the increase in the value of the franc on employment within Swiss municipalities over the years 2001 to 2014. The study focused on three central forms of impact of the increase in the value of the franc. First, heavy pressure on prices from foreign competitors increased competitive pressure on the national market. Secondly, exporters have been experiencing increased competitive pressure on foreign markets. Thirdly, competitive pressure on national sellers operating on the domestic market and foreign markets has been eased by a fall in the prices of foreign input products.

In theoretical terms, it may be assumed that the first two forms of impact result in a compression of national and foreign demand for Swiss goods and services, while the third dynamic operates in the opposite direction and has a positive effect on the Swiss economy. The net effect of the three dynamics is dependent upon how strongly foreign demand responds to changes in the prices of Swiss products, how changes in prices impact the consumption of foreign products, and how intensively foreign input products are used by national industry.

However, a summary consideration of the employment trend in more than 2,200 Swiss municipalities does not confirm the correlations mentioned above for the period covering 2001 to 2014: if the median change is considered,

the number of persons employed only fell over the period 2001 to 2005, a period of relative currency stability. However, the summary overview masks the international integration with the local economy. If a trade-weighted exchange rate specific to the municipality is used, the hypotheses set out above are confirmed: employment fell by 1.1 per cent as a result of the first factor, and by 1.2 per cent as a result of the second. On the other hand, employment increased as a result of the third factor, due to cheaper foreign inputs, by more than 2.1 per cent.

Overall, the variations in the exchange rate led to average employment losses within Swiss municipalities between 2001 and 2014 of around 0.14 per cent. Cheaper foreign inputs more than offset the competitive pressure on exports. The franc shock therefore has to be treated in more nuanced terms: the increase in value has had an effect not only on exports but also on imports. However, the investigation ended in 2014, meaning that the effects of the January 2015 shock are not covered. Instead, the two other KOF studies address the post-January 2015 period.

Negative effects on industry

In a second KOF study, Daniel Kaufmann (University of Neuenburg and KOF Research Professor) and Tobias Renkin (University of Zurich and KOF) investigated the effects of the ‘franc shock’ of 15 January 2015 on prices and employment within the industrial sector. The study shows that the prices of products sold on the national market, as well as the prices of exports denominated in Swiss francs, fell only slightly. On the other hand, the prices of exports denominated in euros fell, as did import prices, even faster and more significantly (in terms of their value in Swiss francs). A reason for this differential development may be that prices do not change much in the currency in which they are set. This is an indication of so-called price rigidities.

It is apparent from an analysis of the effects on employment that, two years after the increase in value, industrial businesses had reduced employee numbers by more than 4 per cent. The gradual fall in employment was associated with an immediate fall in the number of vacant positions. This means that businesses have reduced employment

primarily through natural fluctuation and not by large-scale dismissals. On the other hand, the authors did not find any indications that sectors or firms with low productivity had been especially affected by the increase in value. This appears to refute the view that the shock caused by the appreciation in value led above all to a reduction in employment by unproductive firms, and thus an increase in average productivity.

Negative effects on research and development expenditure

Productivity was also investigated in the third KOF study, which also examined in particular the effects of the increase in value on spending on research and development, investment and business demographics. In order to investigate the correlations, the team of authors comprised of Boris Kaiser (B,S,S.), Michael Siegenthaler, Andrin Spescha and Martin Wörter (all from the KOF) relied on the fact that the impact of an increase in the value of the currency on a firm’s innovation and investment is dependent upon the so-called net exposed position, i.e. the difference between exports and imports as a proportion of turnover.

The authors estimate that the franc shock at the start of 2015 reduced investment in 2015 and 2016 by firms with a positive net exposed position by around 12 to 15 per cent on average. Exposed firms held back on investing both in construction and equipment as well as in research and development (R&D). In particular medium and large-scale investment projects of small and medium-sized enterprises were specifically affected. That exchange rate fluctuations have a strong negative effect on spending on R&D by exposed firms, as also confirmed in an analysis based on various KOF innovation surveys over a period of twenty years (1996–2015). For example, enterprises with an average net exposure reduced their R&D spending by 17 per cent as a result of an increase in the value of the franc of 10 per cent. This means that growth in R&D spending in Switzerland would have been higher in recent years had the franc shock not occurred.

Overall, the studies show that increases in the value of the franc have a short-term negative effect both on investment and also on R&D spending by exposed firms. Over the

medium term, this is likely to impact the competitiveness of the firms affected. The negative effect of increases in the value of the franc on R&D spending is apparent for major firms with international exposure. Since this segment is of particular significance for the economy as a whole, extended periods of appreciation could thus impair the attractiveness of Switzerland as a location for businesses. Since manufacturers are suffering from above-average exposure, extended periods of appreciation could also accelerate de-industrialisation.

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More detailed contributions concerning the studies may be found on the SECO website:

www.dievolkswirtschaft.ch/de/schwerpunkte/schweizer-volkswirtschaft-und-der-harte-franken-11-2017 →

The individual studies may be found here:

www.seco.admin.ch/seco/de/home/Publikationen_Dienstleistungen/Publikationen_und_Formulare/Strukturwandel_Wachstum/Strukturwandel.html →

The Increasing Significance of Chinese Visitors for Swiss Tourism

Boom in Chinese tourism. The country has become the most important market of origin for the international tourism sector in terms of spending by tourists. Chinese visitors are also becoming increasingly important for the Swiss tourist regions, a trend which is also expected to continue into the coming months, as is shown by the most recent KOF Tourism Forecast commissioned by the SECO.

Strong economic growth in China over recent decades has led to a veritable boom in the tourism sector, which has been supported by the country's opening up towards international markets, improved flight connections and the easing travel restrictions. The number of outgoing tourists from China ¹ increased over the ten-year period from 2005 to 2015 from 31 million to 116.9 million. Over this period, China became the most important market of origin worldwide for international tourism in terms of spending by tourists. In 2016, Chinese tourists spent 261 billion US dollars worldwide on holidays and tourist services, which corresponds to a share of 21 per cent of global spending on cross-border tourism. This strong growth is naturally also being felt in Switzerland (see G 1).

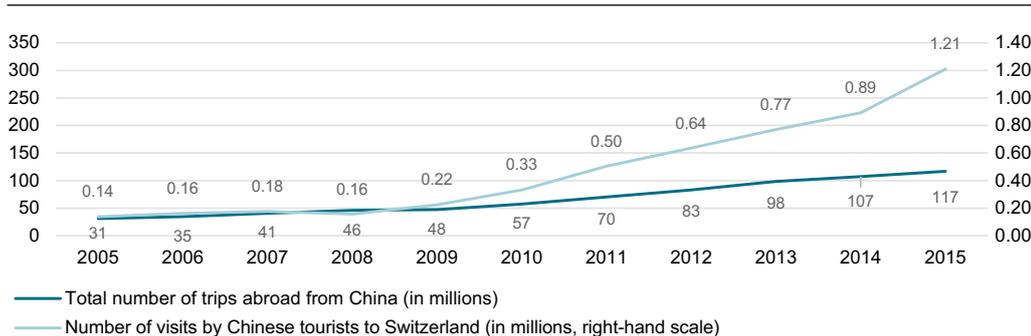


Nǐ hǎo Horu!

¹ China including Hong Kong.

G 1: Number of Trips Abroad by Chinese Tourists and Number of Visits to Switzerland

(in millions, hotel stays: sources: UNWTO, FSO)



Strong increase in Chinese visitors to Switzerland ...

The number of Chinese guests staying at Swiss hotels has increased over the last ten years with double-digit growth rates. 2015 saw 1.2 million stays, accounting for a market share of around 1 per cent of trips abroad from China. In 2016, due to adjustments to the policy on issuing visas and security concerns following the terrorist attacks in Europe, numbers fell by 20 per cent, although demand is recovering again this year (Jan-Aug +10.5 per cent compared to the previous year). Within a short space of time, Chinese tourists have become the fifth most important country of origin for Swiss tourism, behind Switzerland itself, the USA, and the United Kingdom. Daily spending was high, with an average of Swiss franc 330 per person: large numbers of watches were bought, although spending on overnight accommodation was comparably low. Chinese tourists stayed for the shortest periods of time, with an average of 1.3 nights, which can be accounted for by the high proportion of travelling tour groups.

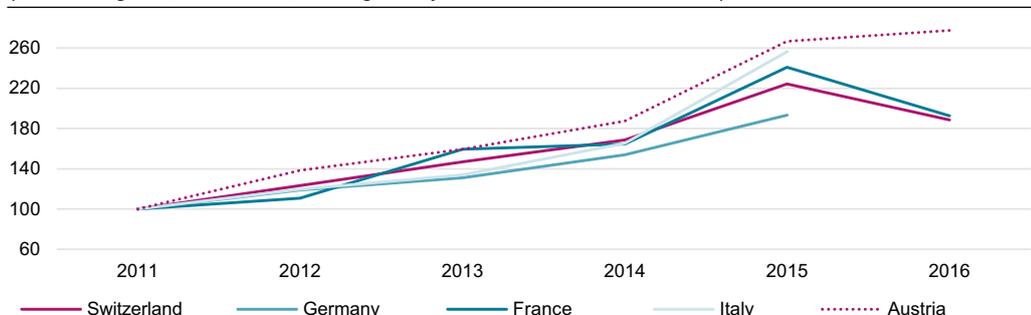
Most overnight stays by Chinese nationals occurred in the tourist regions of central Switzerland (share: 31 per cent), specifically in Bern (25 per cent) and Zurich (17 per cent). As is apparent from monthly figures for accommodation statistics, the summer months of July and August are the most popular for Chinese tourists. Demand during winter months is moderate, in contrast to the other countries of origin. October is particularly popular on account of the Golden Week, a Chinese national holiday, which accounts for approximately the equivalent number of overnight stays as the whole of September.

... and in neighbouring European countries

China has become an important country of origin for the tourist economy not only in Switzerland but also in the neighbouring European countries. Graph G 2 shows the trend in overnight stays in hotels and similar businesses in Switzerland and neighbouring European countries between 2011 and 2015. The number of overnight stays by Chinese

G 2: Overnight Stays by Chinese Guests in Selected Countries

(Indexed figures, 2011=100, overnight stays in hotels; source UNWTO)



T 1: Chinese Tourists to Switzerland and Neighbouring Countries, 2015

	Switzerland	Germany	France	Italy	Austria
Visitors (in 100,000s)	1210	1346	1937	3153	689
- Proportion of foreign visitors	13%	4.3%	5.5%	7.3%	3.5%
Overnight stays (in 100,000s)	1519	2401	3552	4860	908
- Proportion of foreign visitors	7.8%	3.6%	4.8%	3.8%	1.4%
Number of overnight stays (Ø)	1.3	1.8	1.8	1.5	1.3

Figures relate to the year 2015; source: UNWTO

tourists approximately doubled over this period, in Switzerland and in neighbouring countries. Austria proved to be the most dynamic country and Germany the least. In 2016, the fall in the number of visitors to France following the terrorist attacks also affected Switzerland, since the two countries are often visited during the same trip. Large numbers of tourists chose to travel to destinations in Eastern Europe instead.

When compared with the neighbouring European countries, it is apparent that Chinese nationals account for the highest share of foreign visitors, with 13 per cent of visits and 7.8 per cent of overnight stays (see T 1). The reason for this is that Switzerland has been one of the most popular destinations for Chinese tourists since the outset and was already posting strong growth rates prior to 2011. To a certain extent however, this also reflects weak demand amongst other foreign visitors against the backdrop of the strong franc. However, alongside Austria, Switzerland also has the shortest stays in comparable terms.

High growth relates forecast also in future

High growth in the numbers of Chinese tourists is also expected over the coming years. Although economic growth in China is slowing, consumer spending is increasing strongly in the most populous country in the world as part of the transition to a service-oriented economy. In addition,

the number of first-time visitors amongst current tourists is very high and the average age is low. The Chinese market remains huge, especially when considering that in 2014 only 6 per cent of the population had a passport. Against this backdrop, the KOF is forecasting growth in overnight stays by Chinese nationals of 20 percent and 15 percent during tourism years 2018 and 2019. Respectively. Therefore, the significance of Chinese tourists for the Swiss tourism market will increase further, as growth will remain high compared to other destinations.

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The KOF tourism forecasts are prepared on behalf of the State Secretariat for Economic Affairs (SECO). SECO is in a position to finance tourism forecasts via the Swiss Federal Act on the promotion of innovation, cooperation and the expansion of expertise in the tourism sector (Innotour). The primary addressees of the tourism forecasts are the tourist sector and the cantons. The study here can be found here (in German):

www.kof.ethz.ch/prognosen-indikatoren/prognosen/kof-tourismusprognose →

Bitcoin: Flavour of the Month or Tomorrow's World Currency?

A conventional currency functions as a 'medium of exchange', a 'store of value', and a 'unit of account'. Blockchain based cryptocurrencies such as Bitcoin satisfy only the first two of those criteria. So far, the use of bitcoin has been limited to a medium of exchange, but that could change.

In May 2010, a developer bought two pizzas using 10,000 bitcoins. The value of 10,000 bitcoins today is more than USD 64 million, making that pizza the most expensive food in history. Despite the meteoric rise of the bitcoin in 2017, economists are divided on the topic of cryptocurrencies. Some regard bitcoin as a passing fad, call its lofty valuation 'a bubble', or regard its anonymity aspect as 'fraud', while others believe that cryptocurrencies will continue to evolve and take over. Demand for bitcoin has been growing rapidly, partly helped by geopolitical tensions, and partly by its widening acceptance in retail trade, especially in countries like Japan.

Bitcoin and Blockchain

Compared with conventional payment systems where consumers settle payments via a trusted financial institution's ledger, the cryptocurrency systems operate on a proof-of-work basis that allows its participants to maintain a decentralized network (public ledger). In contrast to electronic money, bitcoin does not represent a legal tender. Bitcoins are held in 'digital wallets', which are comparable to bank accounts, with the main difference being that other users know how much is in an account but do not know the holder's identity. Bitcoin transactions are collected into 'blocks' by specialized users called 'miners'. With the help of cryptographic software, they subsequently verify the anonymous transaction blocks that are connected into a chain ('blockchain'), a public ledger that contains all the transactions. Miners are rewarded by the system through the issuance of new bitcoins, which increases the supply of bitcoins. The system is governed by an exogenous money supply limit; the maximum number of bitcoins that can ever be

issued (21 million) is to be reached by 2040. Bitcoin is currently the largest blockchain network, followed by Ethereum, Bitcoin Cash, Ripple and Litecoin. We focus on bitcoin as it has the highest market capitalisation (USD 100bn) and longest data history.

Bitcoin in Switzerland

Switzerland is regarded as a frontrunner in adoption of financial innovations. Being a major hub for the Fintech sector, a lot of cryptocurrency businesses are located in Zug, a.k.a. Switzerland's 'Crypto Valley'. There have also been efforts by Swiss authorities to test the technology through various channels: The Zug municipality ran a six-month pilot project last year, where bitcoin payments of up to Swiss franc 200 were accepted for standard government services. Albeit small, the pilot project was heavily criticized because people cannot (yet) pay taxes with bitcoin. Another initiative was the launch of bitcoin ATMs by SBB, Switzerland's national railway company, as part of a two-year experiment. Ironically, bitcoins cannot (yet) be used to purchase a rail ticket. Recently, Switzerland's financial markets regulator, FINMA, approved a Swiss private bank for bitcoin asset management, signalling that digital currencies are here to stay.

Economics of Bitcoin

A conventional currency functions as a 'medium of exchange', a 'store of value', and a 'unit of account', but bitcoin satisfies only the first two of those criteria. So far, it has been a limited medium of exchange mostly in the US, China and Japan. Despite its high volatility, bitcoin is emerging as 'digital gold'. Implications for central banks

would result if any of the cryptocurrencies would become a global ‘unit of account’. For example, the ‘seigniorage’ benefit (the difference between the face value of money and the cost of printing) would disappear. A Swiss franc banknote on average costs about 30 cents to produce. The difference between the face value of the note and its cost can be used to purchase assets and is partly transferred to the federal government. In developing countries with high inflation and less independent central banks, these revenue transfers can be a significant source of government revenue. Given that the cryptocurrency supply is determined by its miners, the management of business cycles via monetary policy would become a challenging task for central banks.

Graph G 3 shows the development of the Bitcoin/Swiss franc versus the Special Drawing Rights (SDR)/Swiss franc exchange rate. We choose to compare the two due to comments by Christine Lagarde, head of the IMF, about the possibility of the IMF developing its own cryptocurrency by incorporating the blockchain technology into SDR. SDR was created by the IMF from a basket of currencies (the US dollar [42%], euro [31%], Yuan [11%], Yen [8%], and Pound sterling [8%]) to replace the dollar as the world’s reserve currency, accommodating the growth of world trade. Bitcoin also has an appeal as a global currency because it is free from government and central bank influence. Like SDR, bitcoin is universal, but unlike SDR, it can be accessed by private companies and consumers.

G 3: Bitcoin/Swiss Franc and SDR/Swiss Franc Exchange Rate

(source: Datastream)



New world currency?

Weekly and monthly return correlations between Bitcoin/Swiss franc and SDR/Swiss franc data are positive (a range of .2 to .3). The monthly return correlations between Bitcoin/Swiss franc and the price of gold are close to zero, making us sceptical about bitcoin’s safe-haven status.

Before Bretton Woods, John Maynard Keynes devised an ambitious plan in 1942 to set up an International Currency Union, with a gold-backed international unit of account named ‘bancor’ (not to be confused with ‘Bancor the cryptocurrency’). At the SNB’s Karl Brunner lecture in Zurich, guest speaker John B. Taylor emphasized the need to reform the international monetary system, arguing that competitive devaluations can be a source of instability in the global economy. It remains to be seen if the IMF will use the blockchain technology to establish a world currency in the spirit of bancor, but with the added advantages of bitcoin. Such efforts would paradoxically go against the *raison d’être* of bitcoin, which was originally created as a decentralised ‘peer-to-peer network’ avoiding any institutional intervention.

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KOF INDICATORS

KOF Employment Indicator: The Recovery Continues

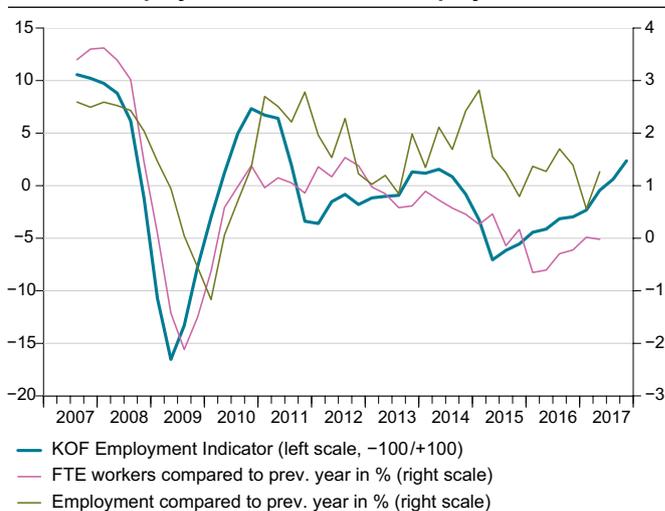
Swiss businesses are feeling the positive dynamic in the world economy. The KOF Employment Indicator has climbed to a level that was last reached shortly before the franc shock (see G 4). The Employment Indicator is in positive territory in the industry sector for the first time since the middle of 2011.

The KOF Employment Indicator is continuing along its upward trajectory. At the start of 2017 the Indicator was still at –2.3 points. In the 3rd quarter of 2017 it climbed to 0.6 points. In the 4th quarter 2017 the Indicator is now at 2.4 points. Last time that the KOF Employment Indicator reached this height was at the end of 2014 – shortly before the franc shock in January 2015. The improvement has been driven in particular by businesses' employment expectations: increasing numbers of firms plan to expand employee numbers over the coming months. However, the assessment of staffing levels is somewhat more restrained. The KOF Employment Indicator has been overhauled.

Exporters with the wind in their sails

The increase in the Indicator has been powered by export-oriented sectors. The mood has improved in particular in the manufacturing sector. For the first time in more than six months, the Employment Indicator for industry is in positive territory, albeit only just. In other words, the number of industrial enterprises that plan to create more jobs is slightly higher than the number that intend to cut back on employment. The recovery in the level of the Indicator for the industry sector has been assisted not only by the positive economic climate throughout the European economies but also by the depreciation of the Swiss franc over the last few months. Compared to the position at the start of the year, the Employment Indicator has also improved in the construction, hotel and catering sectors as well as for banks, wholesalers and other service providers (which include amongst others the information and communications sectors along with transport). On the other

G 4: KOF Employment Indicator and Employment



hand, the Employment Indicator for retailers is barely making any headway and remains in negative territory.

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Further information concerning the Indicator and the methodology used as well as the data from which the Indicator is obtained may be downloaded here:

www.kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-employment-indicator →

KOF Economic Barometer: Prospects for the Swiss Economy Continue to Brighten Up

The KOF Economic Barometer rose by 3.0 points in October. This is the second upward movement in succession (see G 5). The indicator reached 109.1 points in October (after revised 106.1 in September). Autumn is welcoming the Swiss economy with a tailwind.

In October 2017, the KOF Economic Barometer rose to a new reading of 109.1 points, its highest level since September 2010. The upward tendency is mainly driven by the banking and manufacturing indicators. However, the prospects for exports and the accommodation and food service activities are also somewhat better than before. The indicators for domestic consumption are stagnating, and the indicators for the further development of the construction sector have declined somewhat.

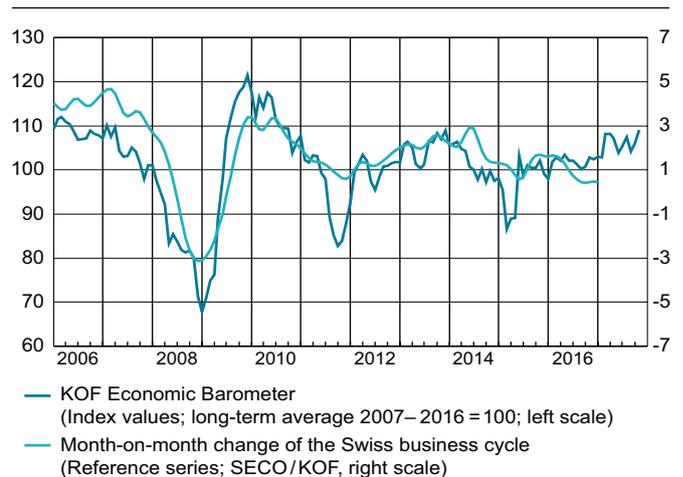
Within manufacturing, the indicators for machinery, metal, electrical equipment, paper and other manufacturing industries are pointing upwards. The indicators for the textile industry remain virtually unchanged. However, data on the food, wood and chemicals industries dampened the otherwise generally positive development.

In the goods producing sector (manufacturing and construction), employment indicators have brightened and the competitive situation of firms has improved. In contrast, the indicators for production and demand have declined.

KOF Economic Barometer and reference time series: annual update

In September 2017, the scheduled annual update of the KOF Economic Barometer took place. The annual update of the Barometer concerns the following steps: redefinition of the pool of indicators that enter the selection procedure, update of the reference time series and renewed execution of the variable selection procedure. The updated reference series is the smoothed continuous growth rate of the Swiss Gross Domestic Product (GDP) according to the new System of National Accounts ESVG 2010, released in early September 2017, which takes into account the release of

G 5: Economic Barometer and Reference Series



the previous year's annual GDP data by the Swiss Federal Statistical Office. As a result of the indicator variable selection procedure, the updated KOF Economic Barometer is now based on 273 indicators (instead of 272 as in the previous vintage) from a pool of almost 500 potential indicator series. They are combined using statistically determined weights.

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For detailed information on the KOF Economic Barometer, visit our website:
www.kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-economic-barometer →

AGENDA

KOF Events

KOF Swiss Economic Forum

OECD Economic Survey of Switzerland:
Boosting productivity for long-term growth
Welcome and introduction Prof Jan-Egbert Sturm,
Director of KOF, ETH Zurich
with lectures from Christine Lewis,
Head of the Indonesia/Switzerland Desk, OECD
Patrice Ollivaud, Economist, OECD

ETH Zurich, Wednesday, 15 November 2017,
10.00 –11.30 a.m.

www.kof.ethz.ch/news-und-veranstaltungen/event-calendar-page/kof-wirtschaftsforum →

KOF Research Seminar:

www.kof.ethz.ch/en/news-and-events/event-calendar-page/kof-research-seminar →

KOF-ETH-UZH International Economic Policy Seminar:

www.kof.ethz.ch/en/news-and-events/event-calendar-page/kof-eth-uzh-seminar →

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