



# KOF Bulletin

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## EDITORIAL

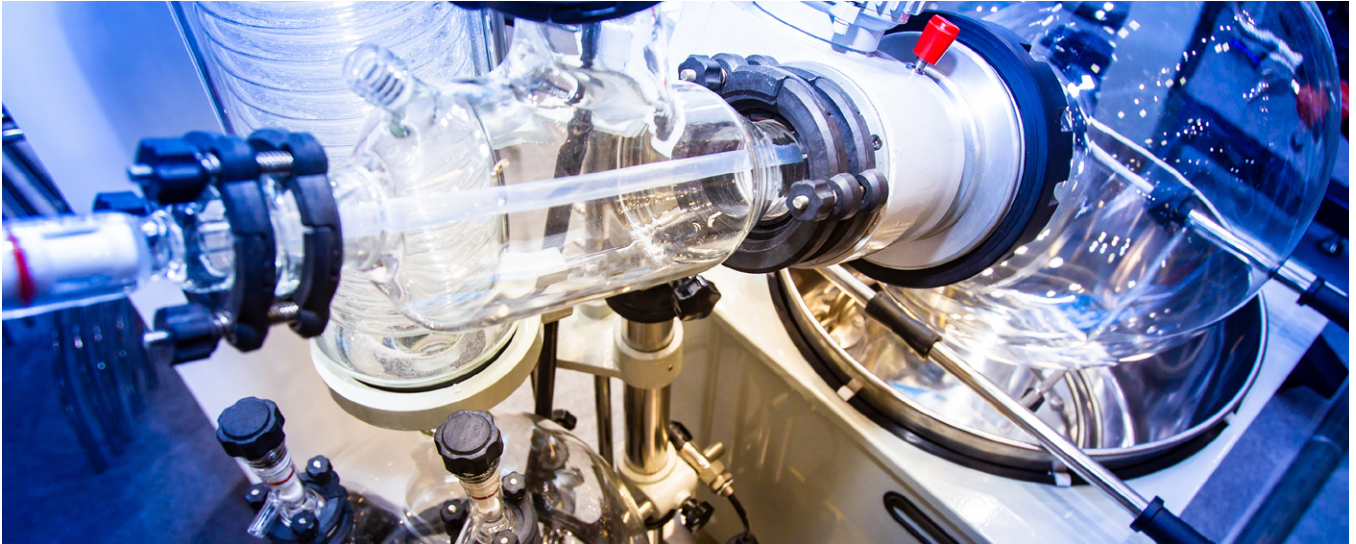
In this Bulletin, we would like to give you an outlook for the Swiss economy. However, not in the form of an economic forecast as in the January issue, but on the basis of surveys. The willingness of companies to invest is an important indicator for economic development. The first article deals with the results of a survey on the investment plans of Swiss companies, their nature and also the question of the probability of realization of the investments. The second article takes a somewhat broader look at the Swiss economy: KOF regularly asks more than 9,000 companies from industry, construction and the service sector how they assess their business, earnings and employment situation, and what they expect in terms of their business development. It turns out: The headwind is blowing stronger. The last two contributions deal with the topic of innovation – an important prerequisite for a country's competitiveness. How does knowledge flow between countries in a globalized world? Researchers at KOF have pursued this question – read more about it in the third article. The fourth article deals with a topic that is increasingly pushing its way into our consciousness: data security. As part of the innovation survey, KOF took stock of the question of data security and the follow-up costs of security problems caused by 'data theft'.

We wish you a good read,

Anne Stücker and Solenn Le Goff

# ECONOMY AND RESEARCH

## Investment Dynamics Lower This Year



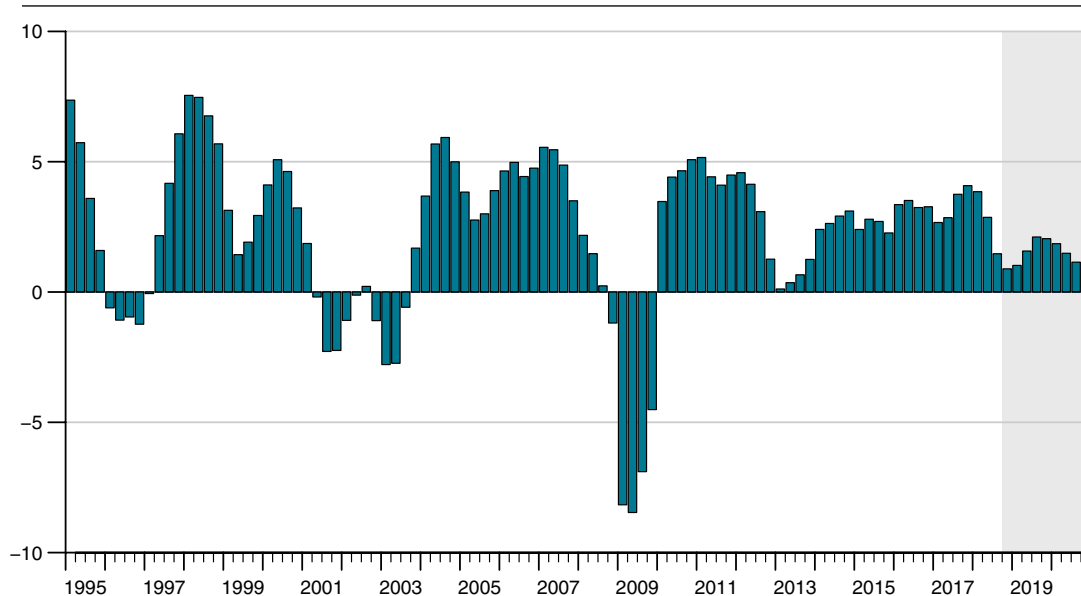
**Total investment in Switzerland is set to lose momentum this year, as shown by the results of the semi-annual KOF Investment Survey. Although the respondents once again intend to increase their investment activities in the current year, they plan to do so to a lesser extent than in the last few years.**

The Swiss economy has seen brisk investment activities for quite some time now. Although rather flat in historic comparison, the current investment cycle, which started in 2013, has been a remarkably long one and was still going in the first half of 2018 (see G 1). However, growth gradually slowed down over the second half of 2018. According to the KOF Economic Forecast, the investment cycle will come to an end in the current year. For 2018, for which definite figures are not yet available, KOF predicts a 2.3% increase in capital investments. In 2019, KOF expects a further decline in dynamics. All in all, KOF forecasts a real increase in capital investments of 1.7% for 2019. This projection is supported by the results of the current KOF Investment Survey.

The resilience of the current investment cycle is remarkable, especially its continuation throughout 2015 – the year in which Swiss companies were confronted with the suspension of the Swiss franc minimum exchange rate. There are two main reasons why, despite declining margins, companies were able to increase their capital investments by 2.3% during the year the minimum cap was abolished. Firstly, the share of imported capital goods is relatively high, allowing companies to implement lower-cost investment projects thanks to cheaper goods from abroad. Secondly, the appreciation of the Swiss franc pushed up the price of labour in relation to the price of capital. This made it more attractive for companies to invest in rationalisation and save costs. As a result, the relative share of

**G 1: Capital Investments (KOF Forecast)**

(in %, yoy growth rate, smooth component)



companies investing in rationalisation increased substantially in 2015. By contrast, investments in capacity expansion played a comparably minor role.

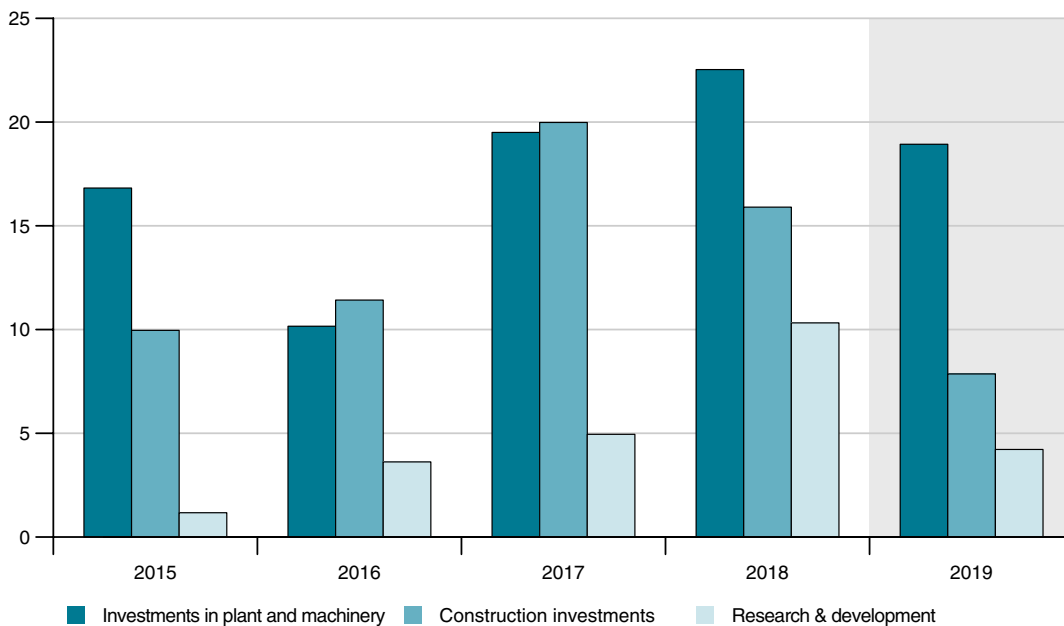
In 2016 and 2017, capital investments generally picked up speed. According to current estimates of the Swiss Federal Statistical Office (FSO), total capital investments rose by 3.4% in 2016. In 2017, Switzerland recorded a similar increase (3.3%). In terms of investment type, companies shifted their focus during these two years: According to the respondents of the KOF Investment Survey, the relative importance of rationalisation investments declined continuously throughout 2016 and 2017, while the share of companies engaging in expansion investments increased successively. This trend continued in 2018: Investment activities were dominated by expansion investments in 2018, while rationalisation investments played a minor role. The current results of the KOF Investment Survey indicate a trend reversal in the present year, with rationalisation investments once again gaining importance.

**Companies confirm expectations**

The Investment Survey conducted in autumn 2018, which has now been completed, provides the second set of figures indicating the trend in corporate investments in 2019. According to the current results, companies' expectations have hardly changed compared to the first survey in spring. As during the spring 2018 survey, the companies still expect investment momentum to slow down in 2019, with respondents anticipating lower dynamics in investments in plant and machinery as well as construction. Moreover, the companies believe that R&D expenditure will grow at a slower pace than previously (see G 2). Broken down according to size, the survey results show that smaller companies expect the most pronounced slowdown in investment dynamics. Big companies are capable of maintaining their expansion speed and can even increase it in some cases.

**G 2: Qualitative Investment Trends**

(Balance)

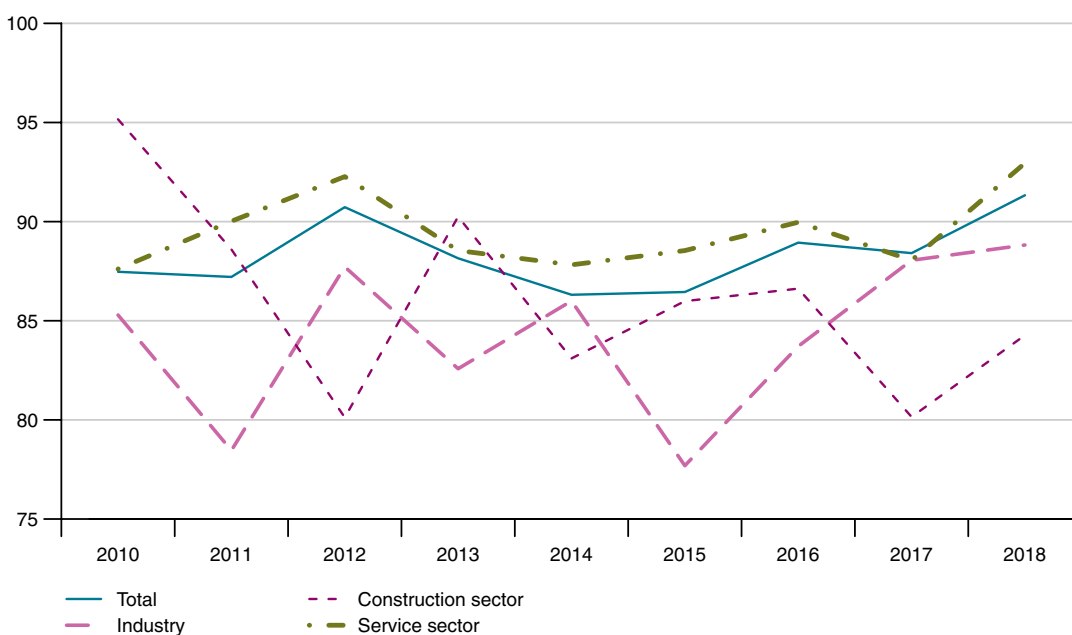


The investment tendencies compiled for the year 2019 are based on the companies' plans, which are generally not yet of a definite nature. To determine the accuracy of the rate of change resulting from the plans, the companies were asked to assess the subjective certainty with which the planned investments will be carried out. In autumn 2018, 91.3% of the companies considered their investment plans

to be certain or very certain, while 8.7% were either uncertain or very uncertain about their investment plans. All in all, the certainty of implementation is thus slightly higher than in past autumn surveys (see G 3).

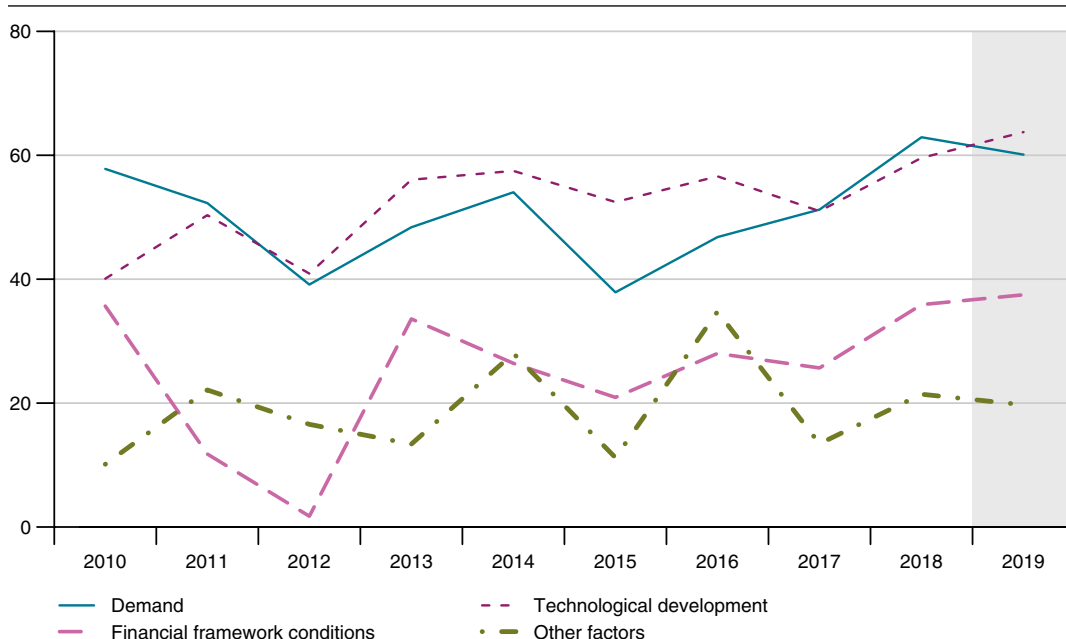
**G 3: Certainty of Implementation**

(Percentage of companies with 'certain and 'very certain' investment plans)



**G 4: Investment Drivers**

(Balance)



**Investments driven by technological development**

The results of the Investment Survey also shed light on the factors that affect companies’ investment decisions (see G 4). In 2018, investments were primarily driven by a positive demand trend. Demand will remain a driving force this year, although it has become slightly less relevant. According to the results of the KOF Investment Survey, technological developments are likely to be the main driver of investment in 2019. In 2018 and 2019, the companies are also benefiting from favourable financial framework conditions, which, according to the respondents, are having a positive effect on their investment activities. Analysis according to size categories shows that small and medium-sized companies benefit most from these favourable conditions.

**The survey**  
 The current KOF Investment Survey was conducted among a panel of over 14,000 companies chosen to reflect the structure of the Swiss economy. The public sector, semi-public enterprises and private households are not included in the calculation of the investment figures. A total of 3,600 companies took part in this survey.

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## Swiss Companies Face Headwinds

According to the results of the current KOF Business Tendency Surveys, which were conducted among 9,000 businesses, companies assess their current business situation as slightly less favourable than before. The KOF Business Situation Indicator has begun the year in the minus (see G 5). Companies are also less positive about their expected business trend. However, confidence about the future business development predominates. Nevertheless, companies are increasingly facing some headwinds.

The decline of the Business Situation Indicator results specifically from unfavourable trends in the wholesale and other services sectors. The business situation in the **wholesale sector** remains favourable, although it has slowed down for the first time in half a year. All in all, demand and sales rose only slightly. Since wholesalers also expect no more than a small rise in demand in the near future, they anticipate stable delivery times. Both purchase and selling prices are likely to go up less dynamically than before. In January, the business situation of the **other service providers** is no longer quite as good as in the preceding quarter. Corporate earnings are under pressure

since there is little room for price rises. Nevertheless, confidence still dominates companies' business expectations and employers once again plan to take on further staff.

In addition, the Business Situation Indicator shows slight setbacks in the manufacturing industry, the hotel and catering sector and the retail trade (see T 1). Although the trend in the **manufacturing industry** is currently less dynamic than in summer 2018, the business situation remains positive. Since, once again, companies had to make more concessions on selling prices, corporate earnings came under slight pressure. Order books are satisfactory

### G 5: KOF Business Situation Indicator

(Balance, seasonally adjusted)



and the companies are mostly confident about their future business development. The export expectations of companies are distinctly less optimistic than in the last few quarters, partly because their competitive position on the EU markets has deteriorated slightly. However, all in all, confidence regarding the business trend in the coming six months predominates among companies in the manufacturing industry.

In the hotel and catering sector, the business situation did not change much and corporate earnings are stable. Business prospects are mostly considered favourable. **Hotel businesses** recorded a smaller increase in the number of overnight stays by both Swiss residents and foreign visitors than in the preceding quarters. Despite a rather stagnant trend in room occupancy, businesses expect the number of overnight stays to pick up, especially due to additional stays by Swiss residents. **Catering businesses** posted slightly higher turnover than during the same period last year.



However, sales volumes of food and beverages changed very little. In terms of the future trend, catering businesses anticipate another slight increase in demand.

The business situation in the **retail sector** has worsened slightly for the second month in a row. Customer footfall was lower at the beginning of this year than at the start of 2018. Accordingly, sales of goods recorded a minor drop and inventory pressure went up. With retailers less positive about their future turnover trend than before, they plan to be more restrained when it comes to ordering fresh goods. In addition, the companies do not really expect to push through any further price rises. All in all, business expectations are therefore less confident than before.

The construction industry, the project engineering sector and the financial and insurance providers are all bucking the downward trend of the Business Situation Indicator, reporting either very little change in their business situation or even a slight improvement. The business situation in the construction-related **building and project engineering sectors** remains favourable. In the construction industry, capacity utilisation has gone up while the order backlog is at a normal level. However, with pressure on construction prices likely to rise, income prospects are slightly less favourable than before. Project engineering businesses are increasingly looking for additional staff as demand for their services is picking up. Nevertheless, they often state that it is very difficult to find suitable employees.



**T 1: KOF Business Situation for Switzerland (seasonally adjusted balances)**

	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18	Jul 18	Aug 18	Sep 18	Oct 18	Nov 18	Dec 18	Jan 19
<b>Private sector (overall)</b>	26.1	26.6	26.7	26.4	28.2	27.1	29.0	28.7	28.5	28.0	29.1	28.4	26.6
<b>Manufacturing</b>	20.8	21.8	22.4	21.4	26.8	24.3	27.1	28.4	26.0	22.6	27.1	26.7	25.3
<b>Construction</b>	30.2	30.2	27.9	30.2	29.7	28.7	29.2	27.6	27.7	29.5	28.5	28.5	28.5
<b>Project engineering</b>	45.6	48.8	50.4	48.3	47.0	47.0	45.4	46.6	45.6	46.0	44.5	45.3	45.9
<b>Retail trade</b>	2.0	7.7	5.5	0.6	7.9	7.3	10.1	7.9	9.4	6.5	8.2	6.4	5.4
<b>Wholesale trade</b>	28.6	-	-	27.0	-	-	32.8	-	-	33.5	-	-	28.0
<b>Financial services</b>	40.8	39.7	41.2	41.7	42.7	39.9	41.3	38.9	40.4	41.0	41.4	37.8	38.7
<b>Hotel and catering</b>	3.7	-	-	5.1	-	-	8.4	-	-	9.5	-	-	8.3
<b>Other services</b>	26.7	-	-	27.3	-	-	27.3	-	-	27.8	-	-	25.4

Answers to the question: We assess our business situation as good/satisfactory/bad. The balance is the percentage of 'good' answers minus the percentage of 'bad' answers.

The business situation remains positive for the **financial and insurance service providers**, even though the income trend has recently been slow-moving. According to the respondents, in the past three months, operating expenses rose more frequently than operating income. Nevertheless, the business prospects are positive, albeit less promising than at the end of last year. Demand among foreign customers is weaker and the banks are not expecting any impulses from this customers group in the near future. Demand among domestic customers is expected to increase further, although at a slower pace than before.

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You can find more information about the KOF Business Tendency Surveys on our website:

[www.kof.ethz.ch](http://www.kof.ethz.ch) →

## Sources of Knowledge Flow Between Developed and Developing Nations

**What is the trend in research and development (R&D) collaboration and technology sourcing between developed and developing nations? A new study shows that Europe is lagging behind the USA when it comes to the number of collaborations with developing nations.**

The research<sup>1</sup> conducted by the authors Gaétan de Rassenfosse and Florian Seliger is based on data quantifying joint regional patent activities (e.g. Europe in conjunction with South-East Asia). According to the data, there is a pronounced concentration of technological activities in the field of information and communication technology (ICT) by European and North American countries in conjunction with China on the one hand and with developing nations on the other.

### **Cross-border knowledge flow can expand knowledge bases in developing nations**

Emerging markets must catch up in the technological field if they want to follow higher technological development trajectories. However, the facilitation of learning processes, for instance, requires sufficient knowledge bases and infrastructure in the 'learning' countries (e.g. in the form of universities and highly-qualified engineers). Since collaboration involving individuals or companies generates knowledge flows between the parties involved, knowledge flows may, for instance, be expected to arise between Switzerland and India when Swiss companies enter into collaborations with Indian companies.



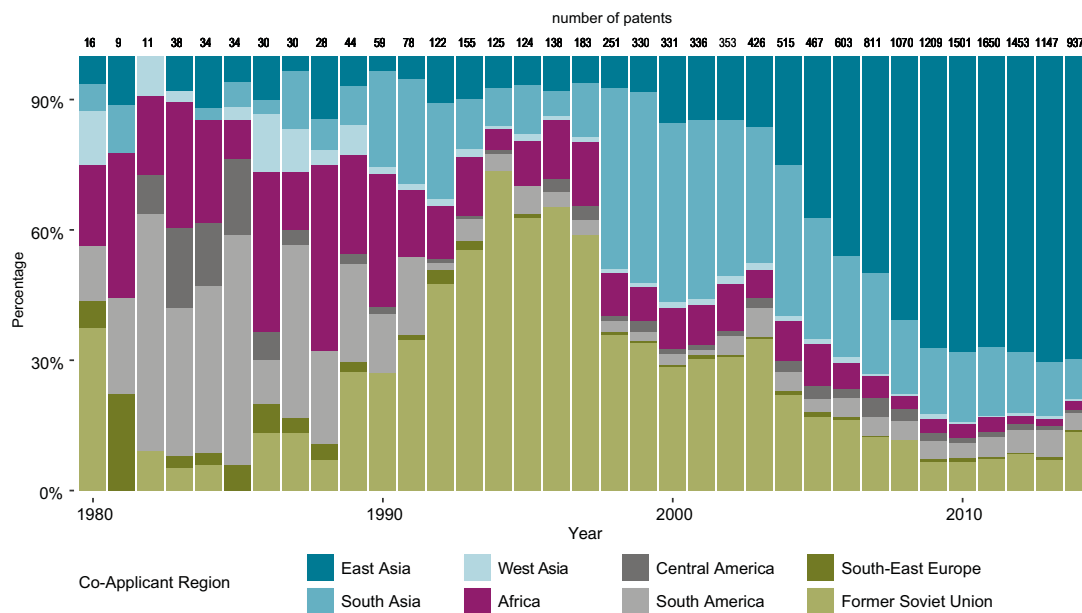
### **Measuring R&D collaboration and technology sourcing on the basis of patent data**

Patent applications contain important and useful information (applicant, patent inventor, country of residence, etc.). The authors have used this information to identify those patents that have at least one applicant from North America or Europe and at least one applicant from a developing country. Most likely, such patent applications are the result of a collaboration between companies from a western industrialised country and a developing country (so-called 'co-application', see G 6).

The same procedure was applied to identify patent applications involving an applicant from North America or Europe and an inventor resident in a developing nation. Provided these applications do not simultaneously originate from a further applicant in a developing nation (and are therefore not co-applications), they may serve as an indicator of 'technology sourcing' from developing nations (see G 7).

In most cases, these patent applications arise after a company from a developed nation establishes a R&D department in a developing nation, which is therefore the country of residence of the inventor. Frequently, R&D capacities are relocated to developing countries on cost grounds, although the establishment of R&D departments in industrialised countries may also result in greatly enhanced access to further local specialists. With developing nations offering large markets thanks to their growing populations, market access may be a further motive for launching local activities.

<sup>1</sup> The project was supported by a grant ('Globalization of R&D: Technology Cluster, Performance and Risk') awarded by the Swiss National Science Foundation.

**G 6: Co-applications Involving European Countries and Developing Countries, in %**

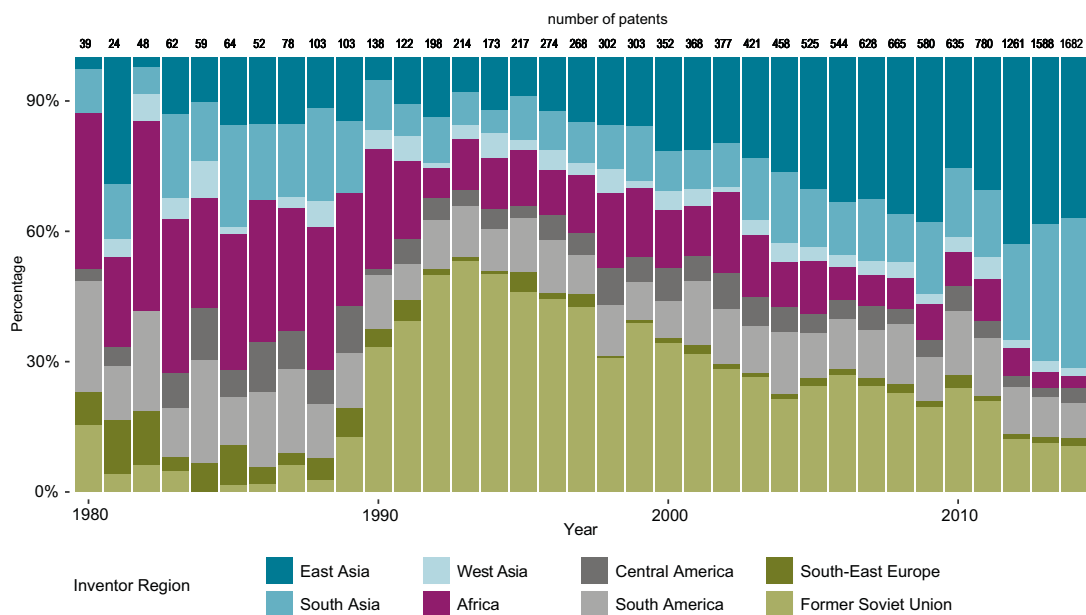
### Significant rise in R&D collaborations with developing countries – especially Asia

Between 1980 and 2010, the annual growth rate of co-applications involving Europe and developing countries was 16.3% (increase to 1,501 patents), while the growth rate of co-applications involving Europe and North America was as low as 8%. However, in the latter case, the absolute numbers are still much higher (2010: 5,000 patents). Compared to the number of R&D collaborations between the USA/Canada and developing nations, such collaborations are still relatively rare between Europe and the developing nations. In 2010, the number of co-applications involving North America and developing nations was 3,829 compared to 1,501 involving Europe and developing countries. This is all the more significant since the total number of patent applications by European countries exceeds the number of applications by North American countries.

Developing countries in Asia are the most prominent collaboration partners among the emerging markets regions. A high percentage of the growth in these collaborations is driven by collaborations with East-Asian, specifically Chinese, companies. The number of R&D collaborations with Russia and former Soviet republics is low. Although collaborations have increased slightly in Africa and in Central and South America, they are still at a very low level. The share of collaborations with non-Asian countries has dropped dramatically and is now as low as 17%.

The USA and Canada are following a similar trend to Europe, although they concentrated on Asia much earlier than Europe. On top of this, collaboration also focussed much earlier on the ICT area (USA & Canada: 29% of the collaborative patents involving developing countries in 2000 were ICT-based, Europe: 10.7% in 2000).

**G 7: Patents by European Applicants with Inventors from Developing Countries, in %**



**Substantial rise in technology sourcing in South and East Asia**

In the field of technology sourcing (whereby inventors based in a research centre in a developing country work for a European company), Asian countries also dominate over all other regions (see G 7). In many cases, European companies develop technologies (or have them developed) in India.

In East Asia, however, companies seem to focus more on collaborations. South Asia could offer significant cost savings, which may be one of the reasons why companies relocate their research activities to the region.

**Pronounced concentration of R&D activities both in regional and technological terms – significant potential for knowledge flows between China and the USA/Canada**

The authors’ analysis presents a consistent picture: First, technological activities involving developing countries concentrate significantly on East Asia and – to a slightly smaller extent – on South Asia. It may be assumed that China can benefit most from knowledge flows, while other developing countries might be crowded out of the technology race in the long term. However, since China also invests heavily in its own R&D, ‘reverse’, knowledge flows from China to established western industrialised countries

should also be expected. The results furthermore indicate that technological activities involving developing countries focus on the ICT area.

While patent activities involving Europe and Asia have expanded substantially in the last few years, Asian countries, especially China, have been key technology partners for North America for a much longer period. The USA and Canada therefore stand to benefit more from knowledge originating in China (‘reverse knowledge flow’) than Europe.

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**Literature**

De Rassenfosse Gaétan, Florian Seliger (2018): Sources of knowledge flow between developed and developing nations, KOF Working Papers, vol. 444, Zurich: KOF Swiss Economic Institute, ETH Zurich, 2018.

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This article provides a summary of one chapter of the forthcoming *Handbook on Trade in Knowledge* by the World Trade Organization (edited by Jayashree Watal).

## Data Theft: How Well Are Swiss Companies Protecting Their Data?

There are frequent reports in the news about data theft – with victims ranging from companies to politicians, as was recently the case in Germany. How well are Swiss companies protecting their data against attacks? Do bigger companies have better defences than smaller ones? The authors have followed up on these questions in the context of the KOF Innovation Survey.

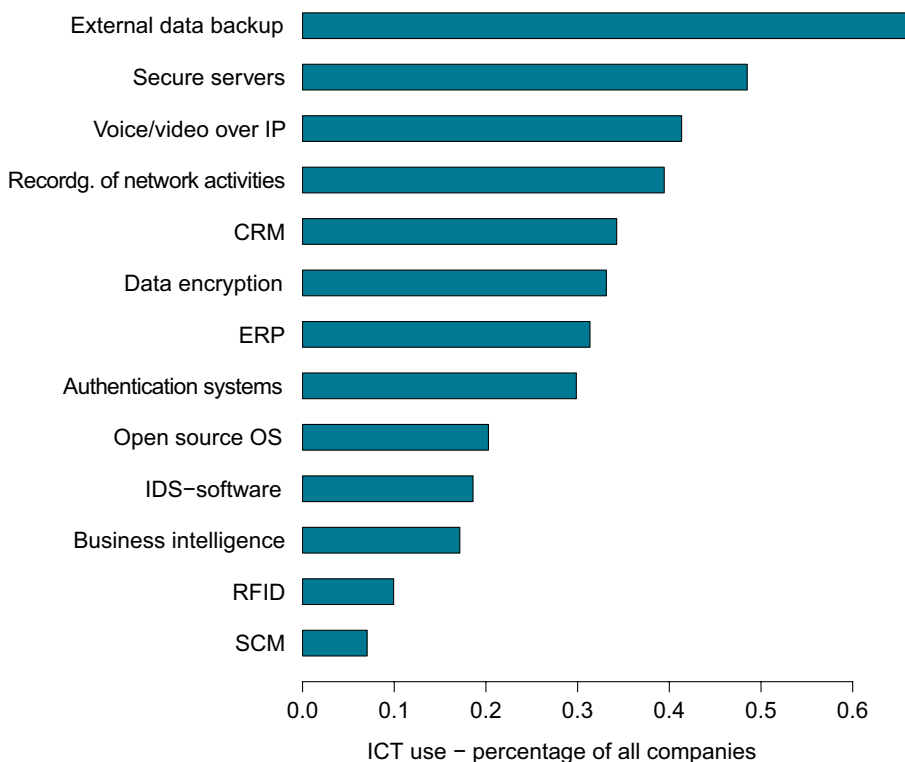
KOF has researched the innovation activities and the degree of digitalisation of the Swiss economy in the period from 2014 to 2016 on behalf of the Swiss State Secretariat for Education, Research and Innovation (SERI). It was found that companies increasingly invest in the field of information and communication technology (ICT), specifically in security technology. The authors conclude that security technology plays the main role in the distribution of selected ICTs (see G 8). Over 60% of Swiss companies with more than five employees utilise external data carriers (offsite data backup) to back up their data, while over half of them utilise secure servers and as much as 40% regularly record network activities.

Data encryption software (35%), authentication systems – for instance digital signatures – (30%), PIN codes, biometric

methods or smart cards and intrusion detection systems (20%; IDS software) are further key security technologies. The latter are, however, less prevalent, in some cases significantly so. On the one hand, this is due to their limited application spectrum, especially in the case of smaller companies, and on the other due to higher one-off introduction costs which often make them affordable for bigger companies only.

In fact, having compared distribution patterns according to size categories, the authors conclude that, with the exception of external data backup, all of the security technologies are more prevalent among big companies than among small and medium-sized companies. Size differentials are particularly pronounced when it comes to IDS software and authentication systems and are particularly low in respect

**G 8: Share of Companies Using the Following ICT Technologies**



of external data backup. However, this does not mean that big companies are better at protecting their data. Big companies simply have automation advantages that justify higher investments on economic grounds.

**Significant divergence between company sizes, small divergence between sectors**

There is relatively little divergence in the distribution patterns of security technologies between different sectors (see G 9). The only exception is the construction industry, which shows a lower prevalence of all respective technologies. While external data backup technologies are widespread in both the industrial and the service sector, network activities are recorded more frequently among service providers. The latter also employ data encryption technologies more often than industrial enterprises. By contrast, secure servers are most prevalent in industry.

The time distribution pattern of security technologies follows a distinctive trend: Since the start of the survey in 2004, all technologies have become more widespread. External data backup, data encryption software and IDS software are most prominent at the current margin.

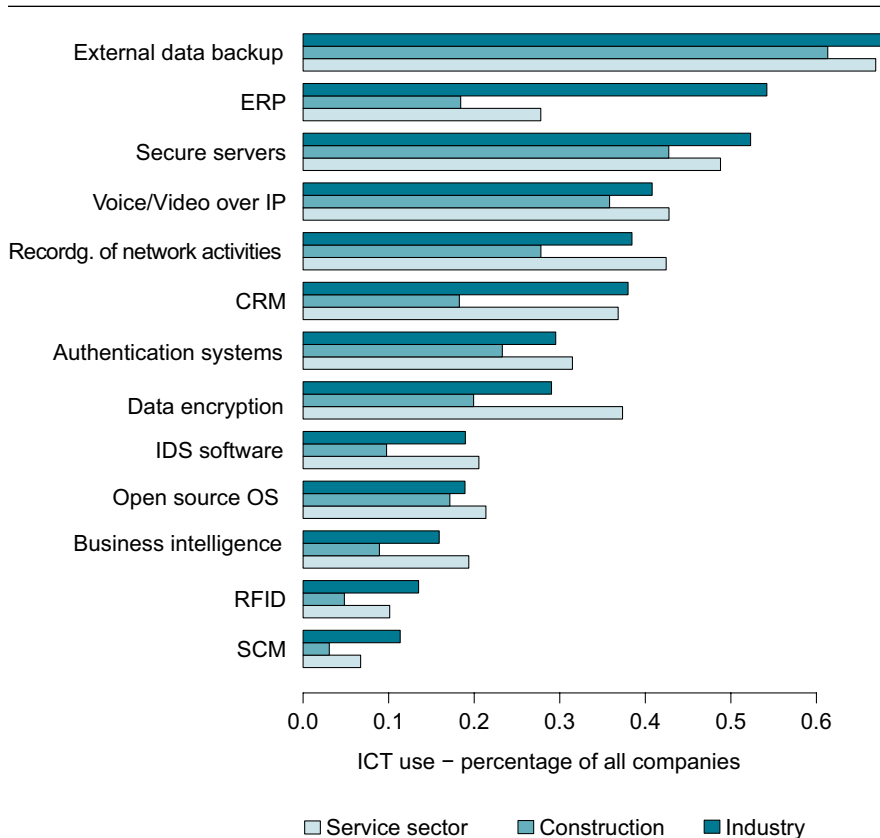
**Despite all security strategies ...**

Aside from focussing on data security in technological terms, one in four respondents has also adopted an explicit security strategy for ICT use. However, this occurs much less frequently in the construction sector than in the industrial and service sectors. Over 70% of the big companies have adopted such a strategy. Among medium-sized companies, the figure is around 50%.

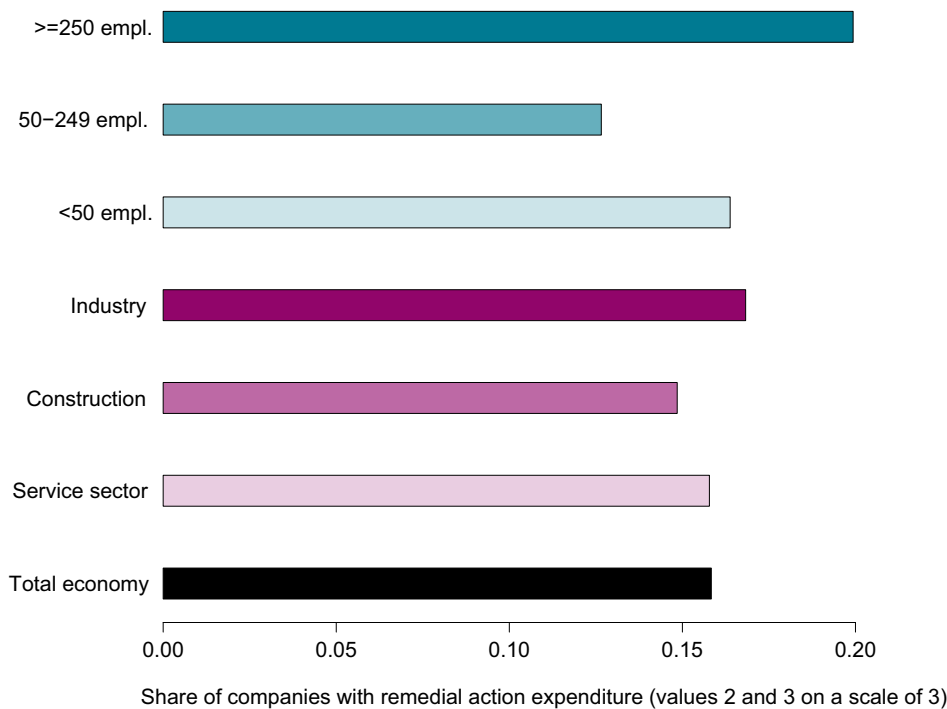
Not all of the companies with security strategies also have a cyber security officer. In total, this is the case for 20% of all respondents. Among big companies, the figure is almost one in two, among medium-sized companies around one-third.

In most cases, one person is responsible for this area, while around 15% of the companies have appointed two officers. However, the number is not just an expression of the role secure infrastructure plays at a given company, it also depends on the size of the business.

**G 9: Share of Companies Using ICT Technologies, by Sector External Data Backup**



### G 10: Share of Companies With Medium or High Remedial Action Expenditure Based on Companies with Security Problems



#### ... security problems arise, especially in big companies

Despite the fact that many companies pursue explicit security strategies and increasingly use security technologies, a number of security problems arose in the period under review (2014 to 2016) and costs were incurred for remedial action. Around 40% of the respondents experienced security problems, such as viruses in their ICT infrastructure or Trojans. As regards the frequency of these incidents, there is only a minor difference between the industrial sector and the construction and service sectors. However, there are significant differences between the various company sizes: Around 70% of the big companies and around 50% of the medium-sized companies recorded security problems, while just under 40% of the small companies experienced such problems.

The incidents caused a variety of costs: Income was lost, for instance when orders could not be completed in due time, key data could not be recovered or companies lost customers. Just over 10% of all companies, and/or around one-quarter of the companies with incidents, suffered a medium or severe loss of income due to security problems.

At close to 20%, the percentage in the construction sector was particularly high. The difference between industry and the service sector is negligible. Income was lost much more frequently by smaller companies than by medium-sized and big companies.

On top of this, companies were forced to invest in remedial action. Around 17% of the companies reported medium to very high expenditure in this context (see G 10). Among bigger companies, remedial action expenditure was often higher than among small and medium-sized companies.

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The KOF Study can be found on our website:  
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# KOF INDICATORS

## KOF Employment Indicator: Labour Market Has Passed Its Peak

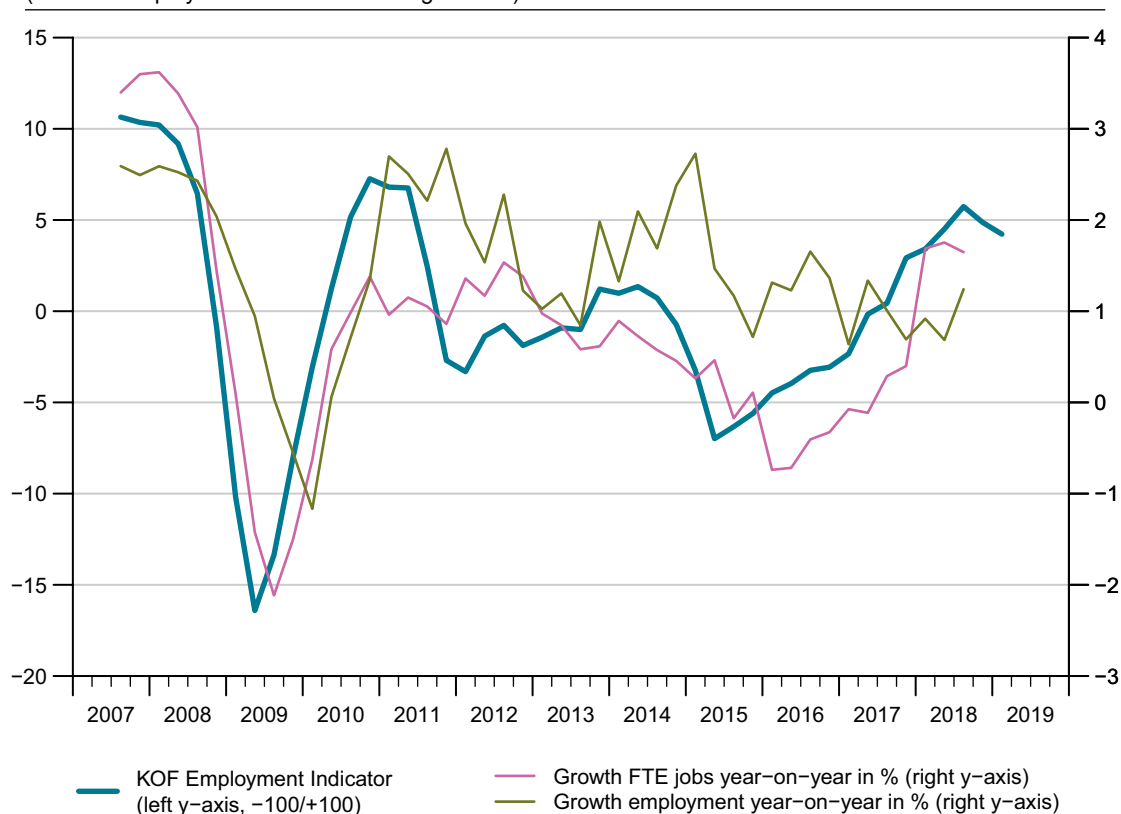
**The KOF Employment Indicator has fallen slightly for the second consecutive time (see G 11). One key reason for this development is that employment expectations in various service sectors are no longer quite as upbeat as they were six months ago. By contrast, employment prospects in construction and in the accommodation and food service sector continue to improve.**

The KOF Employment Indicator is no longer quite as high as it was in the second half of last year. The Business Tendency Surveys conducted by KOF in January reveal that the indicator now stands at 4.2 points, which is 0.7 points lower than three months ago and 1.5 points lower than six months ago. Despite having fallen recently, the indicator remains well above its long-term average, which is close to zero.

This means that although companies' employment prospects are still good, they were even better around the middle of last year. The indicator suggests that the upturn in the Swiss labour market has probably already peaked.

The Employment Indicator is calculated from the quarterly KOF Business Tendency Surveys. When conducting these

**G 11: KOF Employment Indicator, Job and Employment Growth**  
(Job and Employment Growth According to FSO)





surveys, KOF asks firms to assess their present staffing levels and to say whether they plan to alter them over the coming three months. On balance, a majority of these companies are currently of the view that their workforce is too small. Consequently, most of the firms surveyed expect to increase their headcount in the next three months. The KOF Employment Indicator represents the average of the surveyed companies' employment assessments and expectations.

### **Good prospects in construction, accommodation and food services**

The indicator's modest fall can largely be attributed to the slightly less optimistic assessment of the employment situation in 'other services'. The large number of people employed in this sector – which includes firms engaged in transport, information technology, communications, social services and healthcare – make it highly significant for the Swiss labour market. Although the Employment Indicator for 'other services' fell for the second consecutive time, it remains at a relatively high level. Employment prospects also deteriorated slightly in the wholesale and retail sectors. By contrast, the Employment Indicator for

accommodation and food services continues to deliver highly impressive results and is currently at its highest level in more than ten years. Construction is also performing well, with the KOF Employment Indicator for this sector rising further. In addition, employment assessments in the project engineering industry are highly encouraging: the survey findings reveal that many firms of architects and engineers are planning to create further jobs. Although the project engineering sector is fairly small, it is important because it usually acts as a leading indicator of business activity in the much larger construction industry.

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Click here for more information about the indicator and its methodology and to download the data for the indicator:

[www.kof.ethz.ch](http://www.kof.ethz.ch) →

## **KOF Economic Barometer: Downward Tendency Becomes Clearer**

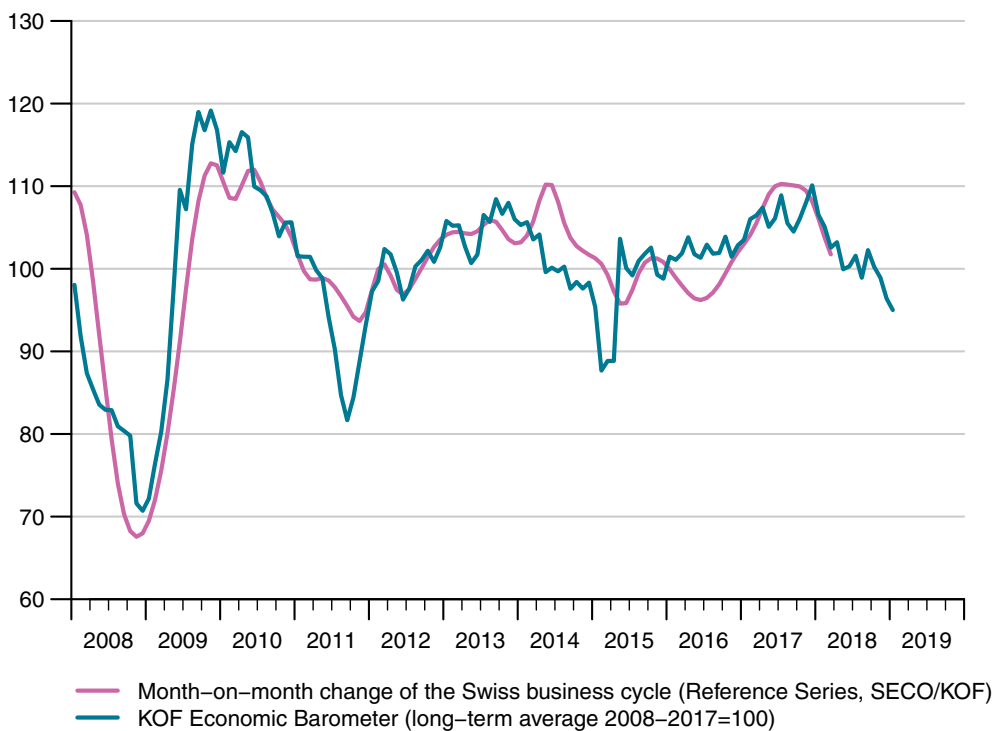
**The KOF Economic Barometer starts in 2019 with 95 points (see G 12). It has fallen for the fourth time in a row and is now 5 points below its long-term average. The downward tendency that emerged at the end of last year continues. The economic outlook for Switzerland continues to dampen at the beginning of 2019.**

In January 2019, the KOF Economic Barometer fell from 96.4 points (revised from 96.3 points) to 95 points. This renewed decline is especially attributable to negative developments within the manufacturing industry and the service industry. In addition, export prospects cloud over. On the other hand, indicators for the hotel and catering sector, the banking and insurance sector as well as the construction sector send positive signals.

In the goods producing sector (manufacturing and construction), indicators on the competitive position and order

backlogs are mainly responsible for its negative development. Furthermore, indicators for the development of production reinforce this signal. However, indicators for the development of production capacity curb this downward movement slightly.

The markedly negative sentiment within manufacturing is mainly driven by mechanical engineering and manufacturers of electrical goods. Developments within the metal and wood industries also reinforce this tendency.

**G 12: KOF Economic Barometer and Reference Series**

### **KOF Economic Barometer and reference time series: annual update**

The annual 2018 revision took place in September. These updates always comprise the following steps: a redefinition of the pool of indicators that enter the selection procedure, an update of the reference time series and a renewed execution of the automated variable selection procedure.

The updated pool of indicators now consists of more than 500 economic time series. The updated reference series is the smoothed continuous growth rate of Swiss GDP distributed across the three months of a quarter, based on the official quarterly real GDP statistics, adjusted for the effects of major international sporting events, as released by the Swiss State Secretariat for Economic Affairs (SECO) in early September 2018. SECO, in turn takes the release of the previous year's annual GDP data published by the SFSO into account. The 2017 vintage of the KOF Barometer (published until August 2018) comprised 273 indicator variables.

The current 2018 vintage, which is now replacing the 2017 vintage, consists of 345 indicator variables, selected from a pool of more than 500 candidate variables. Compared to the previous vintage, 104 indicators are new and 32 dropped out of the set of selected indicators. The Barometer is the rescaled weighted average of the selected indicators, where the weights correspond to the loadings of the first principal component.

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For detailed information on the KOF Economic Barometer, visit our website:  
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