



# KOF Bulletin

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# EDITORIAL

Dear readers,

Although we are mainly associated with business cycle research, we have grown out of this "corset". We deal with issues relating to government budgets and innovation alongside business cycle developments. For instance, researchers from KOF simulated in different scenarios the implications of the Corporate Tax Reform III for the economy and the state budget. As part of the national research programme "Controlling Energy Consumption", an international research group from Germany, Austria and Switzerland has been investigating the deployment and development of energy-saving technologies in businesses in these countries. You can read the results of this investigation in the third article. This bulletin also deals with classical questions relating to economic research: one article considers the question of weak world trade, which is being asked for some time already; another article analyses whether the economic policies of the US president-elect that are already known will actually lead to growth. The KOF not only surveys businesses in Switzerland in order to obtain their assessment of the situation, but also asks other forecasters to state their own views concerning economic development. For some time experts have also been asked for their long-term projections, such as those regarding the future inflationary trend. The fourth article discusses the results of these projections and whether the experts questioned were correct.

We hope you enjoy reading this issue and take the opportunity to wish you a Merry Christmas and a Happy New Year!

David Iselin, Anne Stücker and Solenn Le Goff

# ECONOMY AND RESEARCH

## CTR III: Impact on the Economy and the National Budget



**In mid-February, Swiss citizens will vote on the third corporate tax reform (CTR III). KOF researchers have investigated its impact on gross domestic product, investment, employment, consumption and tax revenue. They have found that there are positive effects for the economy despite the tax revenue shortfall generated by the reform.**

Switzerland, a small open economy, depends to a large degree on migration, trade and international capital flows. Given the increasing mobility of companies and Switzerland's low tax rates in international comparison, the number of enterprises choosing Switzerland as their domicile has grown significantly in the last few years. Special tax regimes offered by the Swiss cantons, for instance, provide competitive tax conditions for holding companies. These special cantonal tax regimes are based on the principle of lower tax on income generated abroad than on income generated in Switzerland.

### New fiscal measures compensating for the scrapping of the special tax regimes

This form of discriminating taxation has become subject to growing criticism from the European Union (EU) and the Organisation for Economic Cooperation and Development (OECD). Pressure to scrap the special tax regimes and replace them with an internationally acceptable taxation

system has prompted the authorities to launch a third corporate tax reform (CTR III), which was passed by Parliament in June 2016. On 12 February 2017, the Swiss population will vote on this reform in a referendum.

The law passed by Parliament provides for the abolition of the current special cantonal tax regime. In addition, as partial compensation for the higher taxes payable by some companies, but also as an innovation incentive, the law proposes the introduction of a license box system that reduces taxes on income from intellectual property rights, for instance patents. Furthermore, the new law allows the cantons to introduce an allowance for excess corporate equity that goes hand in hand with an obligation that at least 60 per cent of dividends should be subject to taxation at the cantonal level. Finally, the reform provides for a reduction of the cantons' ordinary tax rate on earnings. This last measure, however, is not part of the referendum and will be decided individually by each canton.

**T 1: The Impact of Various Reform Scenarios on the Economy and the State Budget**

Reform scenarios	Abolition of the special regimes		CTR III			
	$\varepsilon_s=0.4$	$\varepsilon_s=1.1$	Without taxation of dividends	$\varepsilon_s=1.1$	$\varepsilon_s=0.4$	$\varepsilon_s=1.1$
<b>Elasticity</b>	$\varepsilon_s=0.4$	$\varepsilon_s=1.1$	$\varepsilon_s=0.4$	$\varepsilon_s=1.1$	$\varepsilon_s=0.4$	$\varepsilon_s=1.1$
GDP	0.002	0.001	0.723	0.723	0.631	0.631
Investments	0.005	0.004	1.848	1.848	1.605	1.605
Employment	0.001	0.000	0.180	0.180	0.157	0.157
Household consumption, short-term	0.633	-0.426	0.130	-0.070	0.545	0.344
Household consumption, long-term	0.649	-0.412	0.881	0.679	1.120	0.919
Tax base of enterprises under the regime	-32.01	-65.38	-6.338	-16.480	-6.338	-16.480
Tax revenue from enterprises under the regime	41.95	-27.72	22.180	8.953	22.170	8.951
Total tax	2.35 (CHF bn)	-1.51 (CHF bn)	-1.6 (CHF bn)	-2.357 (CHF bn)	-1.286 (CHF bn)	-2.018 (CHF bn)
(Ø 3 years / long-term) <sup>1)</sup>	2.34 (CHF bn)	-1.52 (CHF bn)	-0.343 (CHF bn)	-1.075 (CHF bn)	0.461 (CHF bn)	-0.271 (CHF bn)

1) The first figure shows the change in average taxes over a 3-year period, the second shows the long-term change.

(Source: KOF)

### Impact of the individual reforms

In a recent study, KOF researchers investigated the impact of CTR III on the economy and the national budget (Chatagny et al., 2016). The authors of the study calculated three different scenarios (see T 1) to determine the effects of various fiscal reforms on the economy and the national budget. In the first scenario (first and second column), the special tax regimes are abolished without any compensation. The SPCs (Special Purpose Companies) tax base therefore drops by 32 per cent, while the tax revenue rises by approximately 2.4 billion Swiss francs due to higher taxation of income remaining in Switzerland. Assuming an elasticity of 1.1<sup>1</sup>, the tax base drops by 65 per cent and the tax revenue by 1.4 billion Swiss francs, both in the short and the long run. In this scenario, private household consumption permanently declines by approximately 0.4 per cent.

Second scenario (third and fourth column): A license box system and the allowance for excess corporate equity are combined with a mean reduction of cantonal tax rates of 5 percentage points. The results show that CTR III can limit the shift abroad of the SPCs tax base to -6.3 per cent when the elasticity factor is 0.4 and to -16.5 per cent when the elasticity is 1.1. While the short-term effect on private consumption is slightly negative if the elasticity factor is 1.1,

the long-term effect is positive irrespective of the elasticity. In addition, the reform has a positive impact on the real economy, resulting in an increase in GDP of 0.7 per cent, in investment of 1.8 per cent and in employment of 0.2 per cent. Nevertheless, the simulations also show that the reform has a negative impact on tax revenue. Assuming an elasticity of 1.1, tax losses amount to 2.4 billion Swiss francs in the short run and 1.1 billion Swiss francs in the long run.

In the third scenario (fifth and sixth column), these losses can ultimately be reduced via an increase in the tax on dividends. Given an elasticity of 1.1, the tax losses decline to 200 million Swiss francs in the long run. Although taxation of dividends leads to a slight reduction of the positive effects the reform has on GDP, investments and employment, it also prevents a short-term decline in private household consumption.

All in all, the simulations show that tax losses can be significantly limited or fully compensated by elements of CTR III while positive effects on the real economy are generated at the same time.

<sup>1</sup> Elasticity ( $\varepsilon_s$ ) measures the sensitivity of the income of enterprises with special tax regimes to changes in the taxation differential between Switzerland and abroad. A high elasticity factor indicates higher sensitivity. In other words, high elasticity indicates that, given the same increase in the SPC tax burden in Switzerland relative to the foreign tax burden, the probability of a move abroad is higher.

## Mitigating the change in tax revenue

The study concentrates on those changes in policy that are explicitly part of the CTR III reform package. The tax deficits associated with the reform should lead to adjustments of income and expense instruments which will, for instance, vary among the different cantons. The study includes revenue losses caused by CTR III via lower transfer or higher tax payments by households. However, specific adjustments of expenditure (e.g. spending on education, infrastructure or culture) are not included in the model. Among other reasons, this approach was taken because the adjustments which become necessary due to the identified changes in tax revenue have not yet been specified and are hence not available for simulation analysis.

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The KOF Working Paper Nr. 416 «Introducing an IP License Box in Switzerland: Quantifying the Effects» by Florian Chatagny, Marko Köthenbürger and Michael Stimmelmayr can be found on the website:  
[www.e-collection.library.ethz.ch/eserv/eth-49868/eth-49868-01.pdf →](http://www.e-collection.library.ethz.ch/eserv/eth-49868/eth-49868-01.pdf)

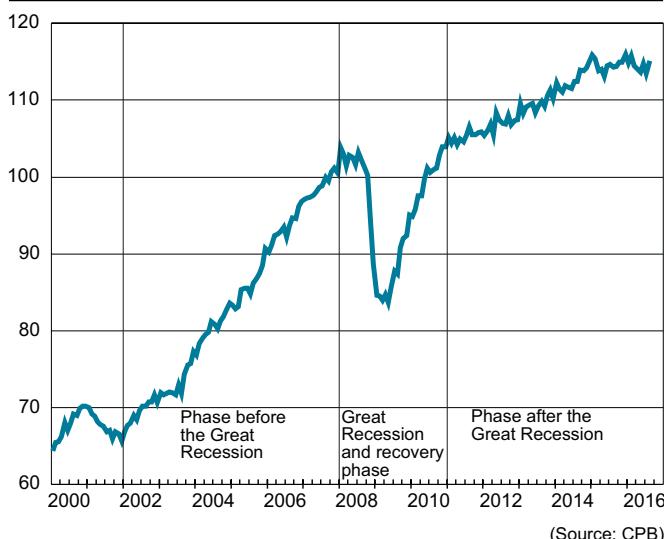
## Why Is World Trade so Weak?

**World trade has only been recording moderate growth in recent times. This article will consider the reasons for the lack of dynamism.**

For around six years, world trade has been developing much more slowly than it was before the Great Recession (see G 1).<sup>1</sup> According to figures from CPB Netherlands Bureau for Economic Policy Analysis, between January 2002 and December 2007 world trade grew each month by

### G 1: World Trade According to the CPB

(World trade volumes in 2010 US dollar prices, log scale)



an annualised average of 7 per cent; the figure for the period between January 2011 and September 2016 is only 1.6 per cent.

Is the weakness in world trade actually a trade-specific phenomenon or does it simply reflect a general weakness within economic activity on a global scale? In order to answer this question, the KOF has estimated the correlation between world trade in goods and world industrial production with reference to a model with time-varying coefficients.<sup>2</sup> Industrial production can account for the variance in trade, at least in part. However, it is noticeable that the elasticity between trade and industrial production has fallen significantly since the middle of 2009. According to our model, a one per cent increase in economic activity in 2009 was associated with an increase in trade of around 1.6 per cent; in 2016 on the other hand the attendant increase was only around 1.2 per cent.

### Which regions of the world have contributed most to the weaker dynamic of world trade?

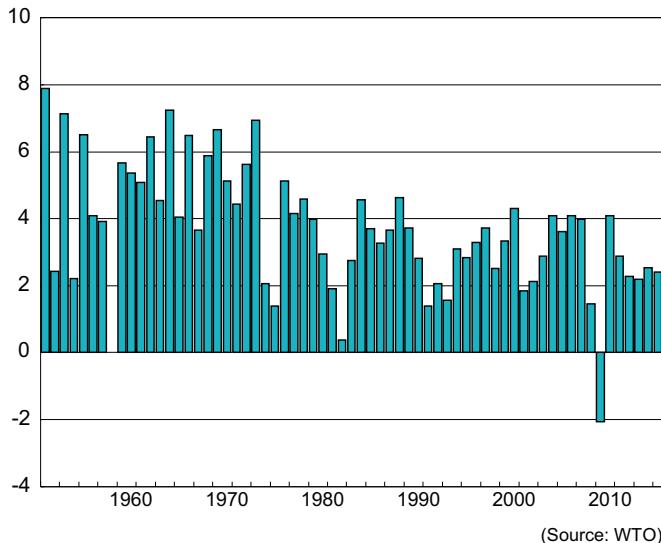
The Asian developing countries and the Eurozone provided the largest contribution to the decrease in the rate of

<sup>1</sup> In this article, the concept of (external) trade means the average of exports and imports.

<sup>2</sup> Estimate based on monthly CPB figures from 2000. World industrial production serves as a proxy for global economic activity.

**G 2: World Export Volumes According to the WTO**

(Annual increase in world export volumes, in %)



expansion of world trade (see T 2). Nearly 60 per cent of the decline in world imports and two-thirds of the decline in world exports is attributable to these two regions. Estimates on a regional level also show that this fall in elasticity between trade and industrial production is being driven by these two regions and Japan. For the USA and the other regions on the other hand, no (significant) fall in elasticity can be noted.

#### **Assessment based on a long-term historical comparison**

Empirical analyses of world trade mostly use data stretching back to 1970 at the earliest. The World Trade Organisation (WTO) however published an annual data series for world export volumes which dates back to 1950 (see G 2).

#### **T 2: Contributions of World Regions to World Trade**

	Imports		Difference	Exports		Difference
	2002–2007	2011–2016		2002–2007	2011–2016	
World	7.1	1.4	-5.7	7.0	1.8	-5.1
Advanced countries						
USA	0.9	0.3	-0.6	0.7	0.2	-0.4
Japan	0.2	0.1	-0.1	0.5	0.0	-0.5
Eurozone	1.7	0.2	-1.5	1.8	0.4	-1.4
Other advanced countries	0.8	0.3	-0.6	0.3	0.1	-0.2
Emerging countries						
Asian emerging countries	2.3	0.4	-1.8	2.6	0.7	-1.9
Central and Eastern Europe	0.3	-0.1	-0.4	0.4	0.1	-0.3
Latin America	0.4	0.1	-0.3	0.4	0.2	-0.1
Middle East and Africa	0.5	0.1	-0.4	0.3	0.1	-0.2

Annualised growth in imports of goods and exported goods as a percentage from January 2002 until December 2007 respectively from January 2011 until September 2016: Source: CPB.

An estimate of elasticity between world export volumes and world production since 1950 shows that elasticity was quite low until into the 1970s (see G 3). However, world production increased relatively strongly during this period with the result that, despite low elasticity, there were high increases in the volume of world exports. Elasticity increased at the start of the 1980s and remained relatively high until the end of the 2000s. This statistical evidence is considered to reflect the opening up and increasing integration of China into the world economy in addition to global trade liberalisation.

The increased elasticity ensured that world trade remained dynamic – even though world production did not increase over the period between 1980 and 2010 as strongly as it did prior to 1980. From the end of the 2000s, elasticity started to fall again. Since world production has only expanded relatively weakly since 2012, the last four years – and probably also this year – have resulted in historically low rates of growth in world trade (see G 2).

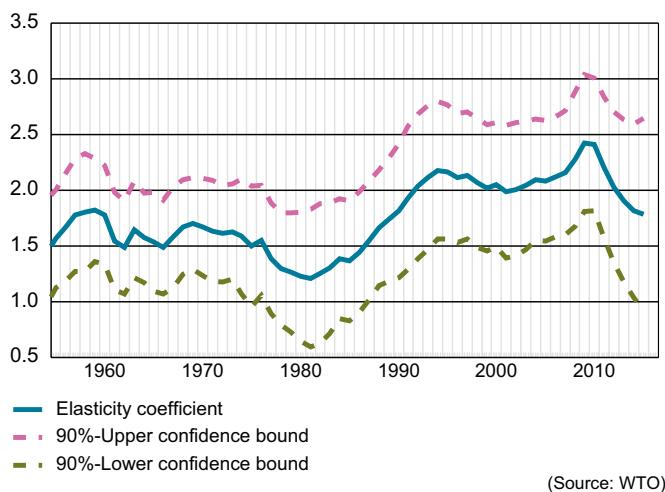
#### **And Swiss foreign trade?**

In Switzerland, the increases in foreign trade during the period after the Great Recession were much lower than during the years leading up to it. Whilst the annualised rate of growth in Swiss trade for the previous quarter averaged 5.5 per cent between 2002 and 2007, the equivalent figure for the period 2011 to 2016 averaged only three per cent, and was thus around 2.5 percentage points lower.

The fall in expansion rates of growth has been particularly marked for exports. It should be noted in this regard that the period from 2002 until 2007 coincided with a depreciation of the Swiss franc, whilst the franc has significantly

### G 3: Elasticity Between Global Export Volumes and Global Production Volumes

(Estimate based on a model with time-varying coefficients)



increased in value between 2011 and 2016, in particular against the euro. Interestingly, the slowdown in Swiss foreign trade relates exclusively to trade in goods, whilst trade in services has accelerated.<sup>3</sup>

An estimate of the above model for Switzerland shows that elasticity between Swiss foreign trade and production has fallen significantly since the end of the 2000s. At least in qualitative terms, the dynamic for Switzerland resembles that of the Eurozone.

#### How will world trade develop in future?

The previous analysis suggests that world trade will remain relatively weak over the longer term. Trade integration in Europe and throughout the world is expected to make significantly less progress in future than it has over the past decades. There may even be some level of de-integration. In terms of European trade, which is important for Switzerland, it is forecast that the southern European countries will generate reduced demand for imports over the longer term than over the period running up to the

Great Recession. Nevertheless, there are indications that Germany will increasingly be the main driver of demand.

The increase in trade with China, which accounts for around 40 per cent of the aggregate figure for Asian emerging countries, will slow down as a result of the structural shift from investment and industry-driven growth to consumer and service-based growth. The reason for this is that Chinese consumer goods account for a significantly smaller share of imported goods than Chinese investment goods. However, this structural shift also offers major opportunities for a number of Swiss export industries.

#### Forecasting model for world trade

World trade forecasting is highly challenging from a methodological perspective: relatively few global indicators are available for providing an aggregated forecast of world trade – at any rate compared to national statistics. In addition, the creation of a world trade forecast on the basis of disaggregated export and import forecasts of all individual countries is extremely time-consuming. The KOF has resolved this problem by using a hybrid forecasting model. It first generates export and import forecasts for important countries from the world economy and the European Union on the basis of multiple models. It then calculates the aggregate from the trade figures for individual countries and models the correlation between this aggregate series and comprehensive world trade using a Bayesian estimation model. A forecast for world trade is devised on this basis.

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<sup>3</sup> The above analyses of world trade related only to trade in goods. The incorporation of trade in services could change the picture. Global data concerning real trade in services are however only fragmentary.

# New Energy Technologies in Swiss Businesses

**Why businesses develop and implement new technologies – or why they don't: this question has been considered by an international team of researchers as part of the national research programme “Managing Energy Consumption”.**

One of the main goals of the Federal Council's “Energy Strategy 2050” is to use the existing potential of energy efficiency, most of which potential depends upon the development of new technologies and their dissemination throughout the economy. There is not always an economic incentive to develop such technologies for other businesses or to implement them within one's own business. The uncertainty surrounding technical success is often too high, as are the costs of developing these technologies; alternatively, businesses may not be willing to make the necessary investments or the amortisation period for the technology may be too long. It is not least for this reason that energy policy measures are necessary in order to increase the use of environmentally friendly technologies.

Working in conjunction with the Austrian Institute for Economic Research (Institut für Wirtschaftsforschung, WIFO) in Vienna and the Centre for European Economic Research (Zentrum für Europäische Wirtschaftsforschung, ZEW) in Mannheim, and with financial support from the Swiss National Fund as part of the national research programme “Managing Energy Consumption” (NRP 71), the KOF has been able to analyse and compare implementation patterns and technological activities or effective policies in Germany, Austria and Switzerland.

## Different rates of introduction

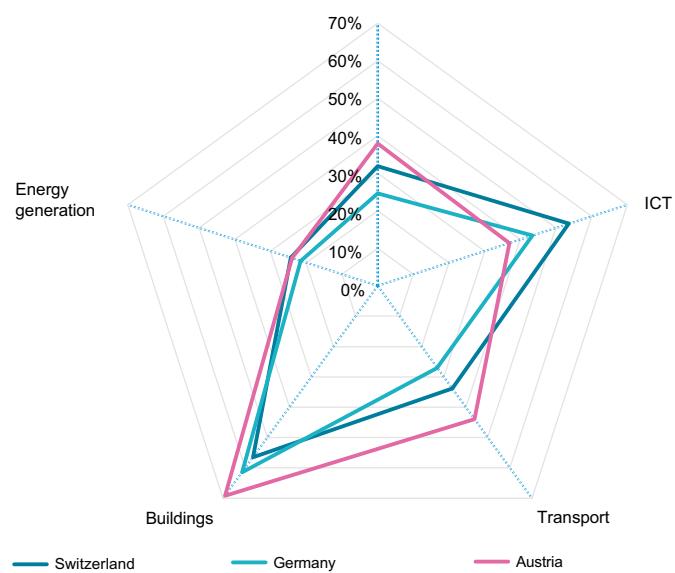
25 per cent of Swiss businesses introduced energy technologies between 2012 and 2014. We have defined these as energy saving technologies and technologies for exploiting renewable sources of energy (e.g. solar, wind and water power). These technologies were largely sourced externally and were not developed by businesses themselves. The corresponding rates of introduction were higher in Austria (32 per cent) and Germany (40 per cent). These differences may be attributed both to the economic policy environment as well as to differing launch dates. For instance, Swiss firms may already have introduced energy technologies on a significant scale prior to 2012 – consequently, the demand for these technologies during the period covered by the investigation would be lower.

## Energy-efficient technologies mainly in the building sector

It is thus more informative to ask in which areas energy technologies are being introduced and whether CO<sub>2</sub> emissions can thereby be reduced. Based on the firms that have introduced these technologies, a strong focus on building technologies is apparent (see G 4): between 56 per cent (Switzerland) and 69 per cent (Germany) of businesses have introduced energy technologies in this area, followed by information and communications technologies, transport-related technologies, production technologies and renewable energy generation technologies. The focus on the building sector reflects the fact that it has the greatest potential for savings.

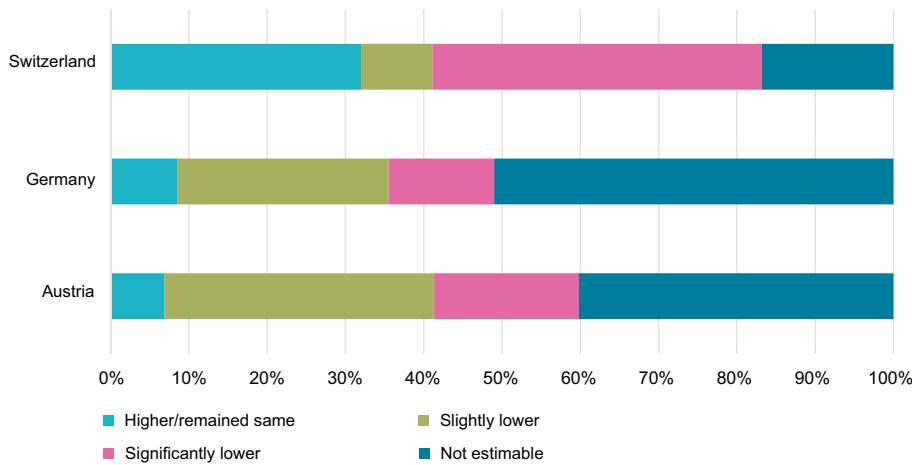
## G 4: Proportion of Businesses Applying New Energy Technologies

(according to technology sector, in %)



**G 5: Impact of the Use of Technology on CO<sub>2</sub>-Emissions**

(in %)

**Reduced emissions for around one half of companies**

The achievement of emissions targets is high up on the environmental agenda of a number of countries, including Switzerland. The introduction of energy-efficient technologies may contribute to achieving these targets; 53 per cent of firms in Austria, 51 per cent of firms in Switzerland and 40 per cent of firms in Germany have reported a fall in CO<sub>2</sub> emissions per unit/per process (see G 5) as a result of the introduction of new energy technology. Although a so-called “rebound effect”, i.e. overall higher CO<sub>2</sub> emissions due to an increase in unit numbers, cannot be excluded, this is unlikely given the current moderate rates of growth in the countries observed. In addition, the 42 per cent of Swiss firms that have introduced energy technologies report significantly reduced emissions. When interpreting G 5 it must be remembered that, compared to Swiss companies, far

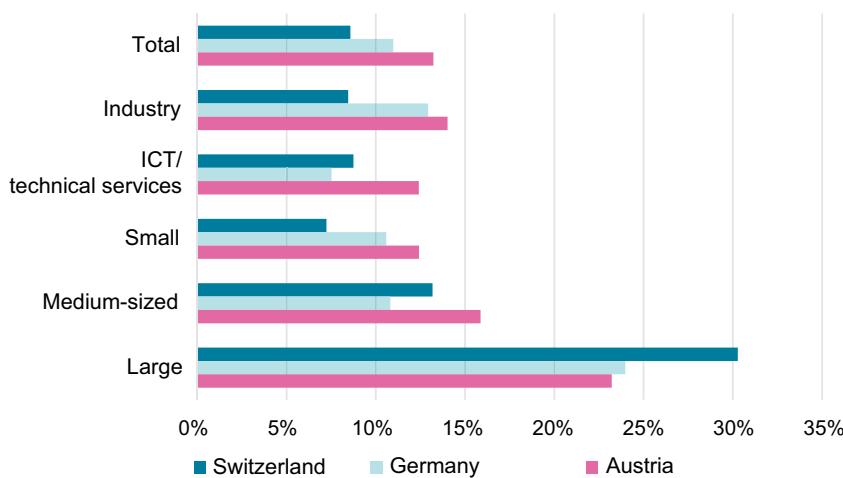
more Austrian and in particular German companies have been unable to assess the implications of the use of such technologies.

**Energy technologies are too expensive**

The high cost of new energy technologies is a significant obstacle to their introduction or more intensive usage. Further important aspects include long amortisation periods and the limited scope for action, due for instance to the fact that a firm may only be able to make limited structural changes because it is a tenant. It is noteworthy that Swiss companies are more likely to indicate a lack of financial resources and staff as a relevant obstacle than firms from the other two countries. A lack of political framework conditions is mentioned as an obstacle in particular by Austrian companies.

**G 6: Proportion of Businesses that Have Introduced Innovations**

(in %)





### Some firms are developing new energy technologies

Energy technologies need to be developed in order for them to be implemented within a business. The results of the survey show that overall between nine and 13 per cent of firms developed and marketed new energy technologies during the period under observation (2012 to 2014) (see G 6). However, the characteristics of the firms that developed technologies differed between the three countries. It is striking that, at 30 per cent, in Switzerland the proportion of large firms (more than 250 employees) marketing energy technologies is significantly higher than in the other two countries. This may be due to the different industrial structure in the other two countries or to the overall relatively highly developed system for promoting innovation in Germany and Austria, which is focused mainly on small and medium-sized enterprises.

### Costs also play a major role in development

The aim of governments is often to maintain or enhance innovation in the sector through energy policy measures. The identification of obstacles for businesses can provide an important input into this process. The most significant obstacles in relation to the development of new energy technologies in Switzerland include: the fact that the product of the business concerned is not amenable to energy

technology innovation, unwillingness of customers to pay for such innovation, high development costs and a lack of management capacity, which is often committed elsewhere. It is apparent in this respect that cost aspects play a major role also in the development of energy technologies: on the one hand, the descriptive results concerning the introduction of energy technologies show that they are often considered to be too expensive, whilst on the other hand the developers of energy technologies complain of excessively high development costs and an unwillingness of customers to pay extra.

The results of the project are based on a written survey of a representative sample of 5,789 Swiss, 6,374 German and 7,091 Austrian firms. The samples from the three countries were stratified according to company size and sector. The response rate was 31.4 per cent in Switzerland, 36.4 per cent in Germany and 7.6 per cent in Austria. The surveys were carried out at the same time in all three countries and on the basis of a uniform questionnaire.

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Further information may be found in KOF Study No. 77 "Creation and Adoption of Energy-related Innovation – the Main Facts":

[www.e-collection.library.ethz.ch/eserv/eth:49541/eth-49541-01.pdf](http://www.e-collection.library.ethz.ch/eserv/eth:49541/eth-49541-01.pdf) →

### NB:

The next issue of the KOF Bulletin will contain an article concerning the effect of policy measures on the implementation and development of new energy technologies.

# Experts' Expectations of Switzerland's Longer-Term Inflation Development

**KOF conducts quarterly surveys among economic experts from approximately 20 Swiss institutions to obtain their assessments of the country's economic development. These assessments form the basis of the so-called KOF Consensus Forecast. Notable among them are the longer-term evaluations, for instance those on the subject of inflation.**

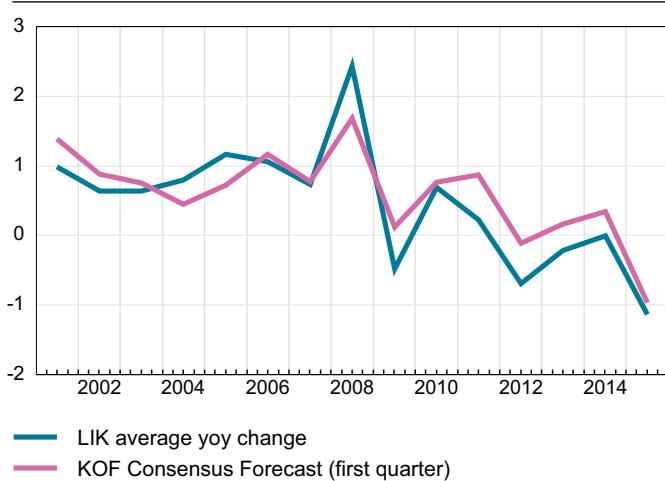
In the context of the KOF Consensus Forecast, the KOF conducts quarterly surveys among economic experts at public and private institutions to obtain their forecasts of various economic and financial variables. The results of the KOF Consensus Forecast both present a picture of the experts' expectations and allow for an assessment of the level of forecast uncertainty. Among other projections, the economists provide an inflation forecast for the current year and the subsequent year as well as their long-term expectations for a five-year horizon.

Compared to the real inflation rates, the forecasters have, on average, been overestimating the movement in prices since 2001. Graph G 7 shows the average year-on-year change in the national consumer price index (Landesindex der Konsumentenpreise, LIK) and the KOF Consensus Forecast for inflation in the current year (submitted in the first quarter of each year). The KOF Consensus Forecast has been higher than the real inflation rate, especially since 2009. Furthermore, various measurements of forecast accuracy (T 3) emphasise the fact that inflation forecasts for both the current year and the subsequent year have been too high since 2001.

## Consumer prices exposed to negative shocks

In the past few years, consumer prices in Switzerland were exposed to negative shocks. On the one hand, the oil price has dropped from 110 US dollar per barrel in 2014 to approximately 45 US dollar in 2016. On the other hand, the

**G 7: Comparison – Inflation Forecast, Current Year (in %)**



significant appreciation of the Swiss franc since 2008 has resulted in lower import prices which, in turn, are reflected in lower consumer prices. The substantial appreciation of the Swiss franc also has a dampening effect on domestic prices. In response to the appreciation, many companies have cut their margins to maintain competitiveness. Hence, in addition to the LIK recording negative rates of change of an average -0.5 per cent since 2012, this could be a partial explanation of the over-optimistic assessments delivered by the economic experts.

## T 3: Forecast Accuracy of the KOF Consensus Forecast

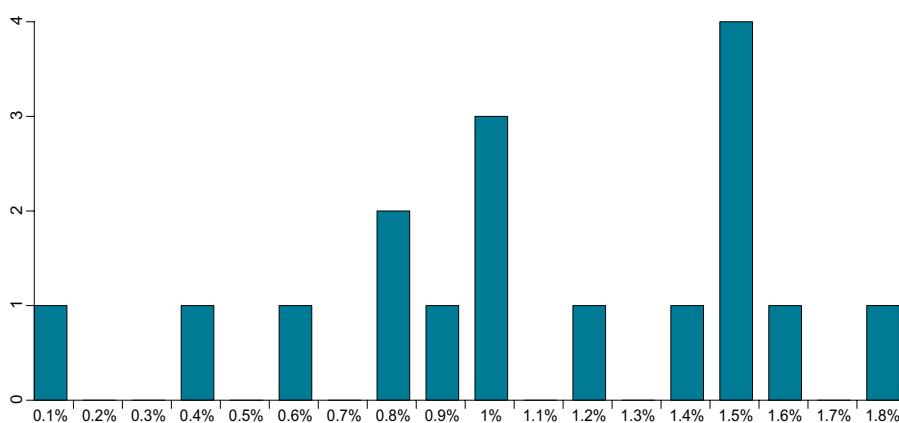
Forecast horizon	Inflation	
	Current year*	Subs. year**
Mean error (in PP)	0.14	0.47
Mean absolute error (in PP)	0.35	0.63
Root of the mean square deviation (in PP)	0.41	0.78

\* KOF Consensus Forecast in Q1 of the year

\*\* KOF Consensus Forecast in Q4 of the preceding year

**G 8: Distribution of Long-Term Inflation Forecasts Among KOF Consensus Forecasters**

(Number of individual point forecasts, Q3 2016)



The Swiss National Bank (SNB) states price stability as its primary objective. For the Bank, price stability means a rise in consumer prices of less than 2 per cent a year. Deflation also violates the price stability objective. After the introduction of this concept at the end of 1999, the inflation rate was relatively stable at 1 per cent up until the financial crisis. A few factors indicate that market players had viewed this rate as the SNB's tacit inflation target. However, in the period from 2000 to today, the average reported

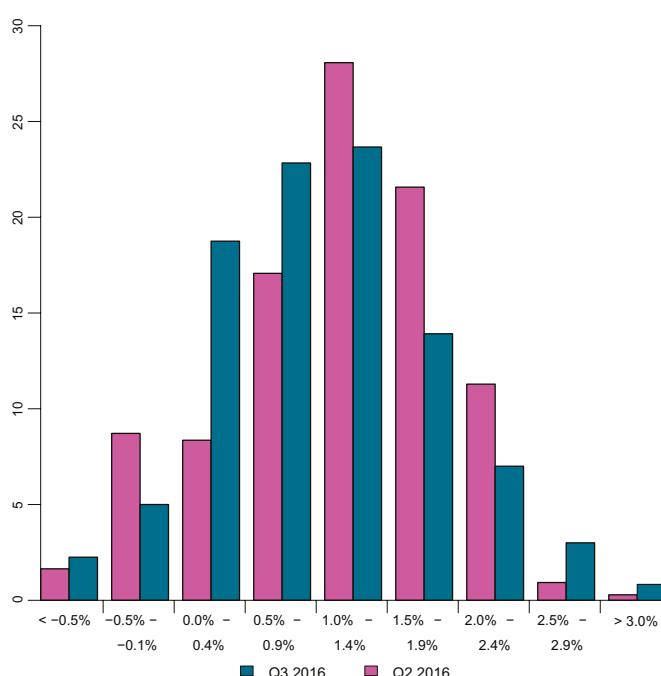
inflation rate has been as low as 0.5 per cent. With a view to the recent continuous decline in prices, it is of central importance to the SNB that long-term inflation expectations remain within its target range. If market players and consumers revise their inflation expectations downward or even expect a decline in prices, a deflationary spiral looms.

According to the KOF Consensus Forecast, the average long-term inflation expectations of the surveyed economists have amounted from 1 per cent to 1.1 per cent since the beginning of 2015. However, the forecasts vary considerably, currently ranging from 0.1 per cent to 1.8 per cent (see G 8). In the third quarter 2016, seven of the 17 economists anticipated an inflation rate between 0.8 and 1.2 per cent in five years' time. Seven respondents, however, expected a long-term inflation between 1.4 and 1.8 per cent.

**Assessment of probability**

KOF also asks the economists to assess the probability of various inflation rates on a five-year horizon. This is summarised in an aggregated probability distribution which reflects the uncertainty associated with long-term inflation expectations (see G 9). In the third quarter 2016, the probability distribution of the movement in prices in 2020 has shifted to the left compared to the survey in the second quarter 2016. The proportion expecting an inflation rate under 1 per cent is 52 per cent. In the second quarter 2016, this figure was still 38 per cent. Furthermore, the mean of the aggregated probability distribution is 1 per cent, while

**G 9: Probability Distribution – Movement in Prices, 2020**  
(Aggregated probability distribution in %)



both the median and the mode are higher. On top of this, the average point forecast is 1.1 per cent. One possible interpretation of these figures is a slight overweight of downward risks at the present time.

Hence, economic experts overestimate inflation rates in the short term. Despite the downward trend in prices in the last five years, long-term inflation expectations are still around 1 per cent. However, a recovery of consumer prices is crucial if price stability is to be ensured. Should the restrained price trend continue, long-term inflation expectations may be affected.

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## “Trumponomics” in a Nutshell: a Keynesian Revival

**Since the surprising outcome of the US election there has been uncertainty about Trump's future actions as president. His policies include trade negotiations with a more protectionist stance, immigration controls, tax cuts, financial deregulation, a reduced government presence in health insurance, higher spending on infrastructure, and an energy policy favouring fossil fuels. As we wait for further clarity about the implementation of his economic policy agenda, its main aspects are reviewed below.**

#### Keynesian fiscal stimulus:

Trump's ascension to presidency comes at a time when the economic recovery since the end of the Great Recession has been modest by historical standards. Since World War II, the US economy has had various business cycles. Average GDP growth in the expansion periods before 1990 was four per cent, which then slowed down to 3.5 per cent, 2.7 per cent and about 2 per cent during the Clinton, Bush and Obama administrations, respectively (Source: the Bureau of Economic Analysis (BEA)). Trump's promise of 3.5 per cent GDP growth on the back of one trillion US dollar infrastructure spending, and tax cuts of 4.4 trillion US dollar, all without raising the deficit, seems ambitious. Indeed, the steepening Treasury yield curve (a barometer of long-term

inflation expectations) triggered by the recent bond sell-off shows that financial markets expect the aggressive pro-growth policies to require future borrowing and Treasury bond issuance.

Planned tax cuts and higher public spending signify that Keynesian fiscal stimulus policies are back “en vogue”. Effectiveness of Keynesian stimulus policies, which rely on the trade-off between inflation and real output, were criticised by Nobel laureates Lucas and Sargent (1979)<sup>1</sup>. They argued that if a policy were used in the past with limited success, economic agents would anticipate this result and update their response accordingly. This in turn would reduce the impact of the policy on real output.

<sup>1</sup> Robert E. Lucas Jr. and Thomas J. Sargent (1979) “After Keynesian Macroeconomics”, Federal Reserve Bank of Minneapolis, Quarterly Review, Vol: 3, No:2, pp 1–16



The large tax cuts (the top tax rate 25 per cent instead of 39.6 per cent on individual income and 15 per cent instead of 35 per cent on the corporate tax rate) coupled with tremendous public spending will support consumer spending in the short run. Excluding the potential tax revenue from economic growth resulting from lower tax rates, the federal deficit may increase by 10 trillion US dollars over the next decade. Increased borrowing inevitably leads to higher interest rates in the future, crowding out consumer spending and investment, thus neutralising any initial benefits. Furthermore, companies may channel some of the repatriated cash from Trump's planned tax holiday on foreign earnings, to share-buy backs or dividend pay-outs instead of investing.

The share of investment in GDP since the Great Recession has shrunk to 15.5 per cent from its (pre-financial crisis) post-war average of 17.4 per cent (Source: BEA). In the spirit of the Lucas-Sargent critique, "micro-foundations", such as the willingness of companies to invest in new projects, may determine the effectiveness of Trump's pro-growth policies.

**Trade:**

It is too soon to assess Trump's trade policy at this point. However, he has already pledged to withdraw from the Transpacific Partnership (TPP) and replace it with "fair bilateral trade deals". It remains to be seen if his renegotiation of the NAFTA between the US, Mexico and Canada will lead to the introduction of big tariffs on imports from China and Mexico. In the past, he expressed his intention to impose a 45 per cent tariff on Chinese imports and a 35 per cent tariff on Mexican imports that would make overall imports at least 14 per cent more expensive, and result in higher inflation. As the undocumented immigrants living in the US make up 5.1 per cent of the labour force, Trump's deportation policies may also add to rising inflation through higher domestic wages.

Currently, most US imports originate from China (20.8 per cent), followed by Mexico (13.5 per cent). (Source: US Census Foreign Trade Statistics). Roughly 80 per cent of Mexico's total exports go to the US, making Mexico's economy vulnerable to a protectionist policy. A raising of tariffs and a possible retaliation by China and Mexico could potentially

trigger trade wars and a de-globalisation process that would have broad negative consequences such as lower global efficiency and loss of welfare.

Despite the US being an important export destination for Switzerland (14 per cent of total exports), Trump's trade policy is unlikely to have a significant direct effect on Swiss exports, given their low substitutability with US production. However, the weakness in world trade with the general cooling down of global economic activity poses downside risks for Swiss exports.

Since the election, the prices of steel and copper have rallied owing to Trump's infrastructure plans. Coal prices have also surged, thanks to his pledge to revive the

declining coal industry. Global coal trader Glencore should benefit from this shift in energy policy. Both the increases in metal prices and the revival of coal trade may positively impact the merchant trade component of Swiss GDP.

#### **Health care:**

Trump's presidential campaign had focused on the repeal of the Affordable Care Act, a.k.a. "Obamacare". As the probability of new legislation controlling the pricing of drugs seems much lower, this is potentially beneficial for the pricing power of Swiss pharma companies. However, the net effect on pharma revenues is unclear, as a repeal of Obamacare would challenge affordability of medication for a large number of people, who would lose their health insurance coverage.

#### **Financial regulation:**

Trump pledged to dismantle some core elements of the Dodd-Frank Act, (a legislation passed in 2010 to make Wall Street safer), such as the "Volcker Rule", which restricts deposit-taking banks from proprietary trading. It is likely that his domestic de-regulation efforts will have far-reaching consequences for the EU and Swiss banks. The Basel Committee is already under pressure from European policymakers to soften the new capital rules for banks. As European banks anxiously wait for the package called Basel IV, it is too early to say if Trump's deregulation policy would also influence the Basel Committee or Swiss Financial Market Supervisory Authority FINMA to consider more lenient capital requirements for banks.

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# KOF INDICATORS

## KOF Business Situation Indicator: Business Situation Has Clouded Over

**Following an unbroken upward trend that had lasted for months (see G 10) the KOF Business Situation Indicator for the Swiss private economy fell in November. For the time being, the improvement of the last few months has come to a halt. Despite the boost the economy gave Swiss companies in the last few months, the business environment remains difficult.**

In November, the business situation clouded over in the majority of industries surveyed (see T 4). The indicator dropped most significantly in the retail sector where the situation had already been unsatisfactory. Complaints about the situation also increased in the manufacturing industry. Financial service providers and project engineering offices consider their situation to be slightly less positive than before. The construction industry, the only sector which bucked the downward tendency, reported an improvement in the business situation. Wholesalers, hotel and catering enterprises and the other service providers were last surveyed in October. The business situation in the wholesale trade and the hotel and catering sector showed some improvement. In contrast, the other service sectors suffered a slight setback.

**G 10: KOF Business Situation Indicator**  
(balance, seasonally adjusted)



**T 4: KOF Business Situation for Switzerland (seasonally adjusted balances)**

	Nov 15	Dec 15	Jan 16	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16
<b>Private sector (overall)</b>	9.6	8.2	3.5	3.7	6.0	7.6	9.8	8.1	10.0	11.0	11.4	12.1	10.5
<b>Manufacturing</b>	-13.5	-12.4	-13.2	-13.6	-10.1	-7.3	-5.9	-3.4	-8.4	-7.8	-7.7	-6.2	-9.6
<b>Construction</b>	31.4	26.0	24.4	27.6	26.0	24.9	22.2	22.8	23.5	27.3	22.9	25.0	26.5
<b>Project engineering</b>	47.5	45.5	47.0	46.4	45.6	45.4	46.7	44.0	45.5	46.2	45.7	45.0	42.7
<b>Retail trade</b>	-8.9	-12.2	-11.5	-11.3	-5.8	-8.8	-10.8	-8.8	-11.7	-10.7	-8.5	-7.6	-12.6
<b>Wholesale trade</b>	-	-	-17.0	-	-	-8.0	-	-	3.6	-	-	6.4	-
<b>Financial services</b>	28.3	19.0	10.2	17.0	21.5	18.1	26.6	14.3	18.2	23.2	23.9	25.6	23.6
<b>Hotel and catering</b>	-	-	-20.9	-	-	-16.6	-	-	-21.2	-	-	-16.5	-
<b>Other services</b>	-	-	20.8	-	-	20.4	-	-	24.0	-	-	21.9	-

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.

Source: KOF Business Tendency Surveys

From a regional perspective, November presents a heterogeneous picture (see G 11). The positive situation in Central Switzerland and East Switzerland has improved further. Espace Mittelland also reported a slight plus. In the Zurich region and Ticino, the business situation was mostly unchanged. In contrast, North West Switzerland, and especially the Lake Geneva region, reported a downturn.

### Explanation of graphs

Graph G 10 presents the KOF business situation across all sectors covered by the survey. The business situation in sectors which are surveyed on a quarterly basis is kept constant during the intervening months.

Graph G 11 presents the business situation in the main regions according to the Federal Statistics Office. The regions are coloured according to business situation. The arrows in the regions indicate the change in the business situation compared to the previous month. An upward-pointing arrow, for instance, indicates that the situation has improved over the previous month.

The KOF business situation is based on over 4,500 reports by Swiss companies. Every month, businesses are surveyed in the following sectors: industry, retail trade, construction and project engineering as well as financial and insurance services. Businesses in the hotel and catering sector, wholesalers and the other service providers are surveyed in the first month of every quarter. Among other questions, the businesses are asked to assess their current business situation. They may rate their situation as "good", "satisfactory" or "bad". The balance of the current business situation is the percentage difference between the "good" and "bad" responses.

**G 11: KOF Business Situation in the Private Sector**



The angle of the arrows reflects the change in the business situation compared to the previous month

Source: KOF

#### Net balances

■ 55 to 100	■ 30 to under 55	■ 16.5 to under 30
■ 9 to under 16.5	■ 5 to under 9	■ -5 to under 5
■ -9 to under -5	■ -16.5 to under -9	■ -30 to under -16.5
■ -55 to under -30	■ -100 to under -55	

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You can find more information about the KOF Business Tendency Surveys on our website:  
[www.business-tendency-surveys.ch](http://www.business-tendency-surveys.ch) →

## KOF Barometer Is Falling

**In November 2016, the KOF Economic Barometer fell by 1.7 points (from revised 103.9 in October) to 102.2 (see G 12). The upward trend that could be observed since mid-2015 has thus not continued into the last month. Yet, with its level still slightly above the long-term average, it still indicates that the growth of the Swiss economy in the near future should remain close to its long-term average.**

In November 2016, the KOF Economic Barometer, with a new reading of 102.2, continued slightly above its long-term average. The strongest negative impulses came from the hotel and catering industry and manufacturing. The only positive impacts worth mentioning originated in the financial sector and the international economy.

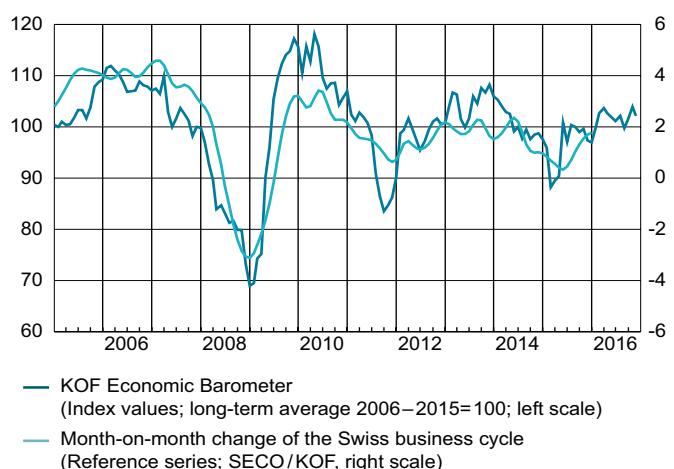
Within the manufacturing sector, the slightly deteriorated outlook manifested itself primarily in the paper, food and machine building industries. However, these negative tendencies were slowed down somewhat by an improved outlook in the wood-processing and timber industry.

The impaired sentiment in manufacturing as a whole is primarily a reflection of the more skeptical assessment of its competitiveness, the outlook for Swiss exports and the situation for intermediary inputs. Accordingly, the Swiss manufacturing industry continues to operate in a challenging environment.

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

In September 2016, the scheduled annual update of the KOF Economic Barometer took place. The annual update of the Barometer includes the following stages: redefinition of the pool of indicators that enter the selection procedure, update of the reference time series, a new execution of the variable selection procedure and a procedure to estimate missing monthly values of quarterly variables. The updated reference series is the smoothed continuous growth rate of Swiss GDP according to the new System of National Accounts ESVG 2010, released at the end of August 2015, which takes into account the release of the previous year's

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



annual Gross Domestic Product (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 272 indicators (instead of 238 as in the previous vintage) from a pool of more than 400 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](http://www.kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-economic-barometer) →

# AGENDA

## KOF Events

### KOF Research Seminar:

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# TABLE KOF AUTUMN FORECAST 2016

## SWITZERLAND

### Real Gross Domestic Product by Type of Expenditure

	2007-2015	Percentage change against												previous year		
		previous quarter (annualized, trend cycle component)				2017				2018						
		2016		Q1 Q2 Q3 Q4		Q1 Q2 Q3 Q4		Q1 Q2 Q3 Q4		Q1 Q2 Q3 Q4		2016	2017	2018		
Private consumption	1.6	0.8	0.8	1.0	1.4	1.4	1.3	1.2	1.1	1.1	1.0	1.0	1.1	1.0	1.2	1.1
Public consumption	1.3	2.5	1.6	-0.2	0.3	1.7	1.7	0.8	0.4	0.0	0.4	0.8	0.6	1.5	1.0	0.5
Gross fixed capital formation	1.6	2.9	2.7	-0.9	-2.3	-0.1	1.8	1.1	3.6	3.8	1.5	2.5	2.5	2.0	0.2	2.7
– Construction	2.0	-0.6	-0.6	0.6	1.1	1.2	1.7	2.0	2.2	2.5	2.3	1.8	1.6	0.0	1.2	2.2
– Machinery and equipment	1.4	5.3	4.9	-1.6	-4.5	-1.0	1.9	0.6	4.6	4.7	1.1	3.0	3.1	3.4	-0.4	3.0
Exports of goods (1) and services	2.9	5.9	2.5	0.5	1.8	2.1	3.0	4.6	3.7	2.8	3.5	4.3	3.6	4.6	2.3	3.6
– Goods	2.2	10.1	2.2	-1.1	0.7	2.7	3.1	3.8	4.2	4.1	4.2	4.4	4.3	6.0	2.1	4.1
– Services	2.7	0.6	-1.1	1.3	2.7	3.8	3.6	2.3	2.8	3.4	3.3	2.5	2.5	1.9	2.8	3.0
Imports of goods (1) and services	3.1	4.3	1.7	1.0	1.0	3.4	4.3	2.9	3.0	3.3	2.6	2.9	3.1	3.3	2.6	3.2
– Goods (1)	1.8	6.9	2.1	1.0	-0.2	3.4	5.2	3.1	3.7	4.3	3.6	3.8	3.9	4.2	2.8	4.0
– Services	6.0	0.1	-4.3	0.2	2.9	3.8	4.1	1.2	1.0	1.9	1.8	0.5	1.0	1.5	2.3	1.5
Change in stocks (2)	0.1	-0.6	0.0	0.9	1.1	1.8	1.5	-0.1	-0.5	0.1	0.0	-0.4	-0.1	-1.3	1.3	0.0
Gross Domestic Product (GDP)	1.6	2.1	2.0	1.6	1.6	1.9	2.0	1.9	1.9	1.9	1.9	1.8	1.9	1.6	1.8	1.9

(1) Without valuables (i.e. precious metals including non-monetary gold, precious stones and gems as well as objects of art and antiquities)

(2) Percentage contribution to GDP-growth

### Other Macroeconomic Indicators

	2007-2015	Percentage change against												previous year		
		previous quarter				2017				2018						
		2016		Q1 Q2 Q3 Q4		2016	2017	2018								
Real effective exchange rate of CHF (1)	2.5	-2.2	-1.6	2.1	-2.8	-0.2	-3.7	-0.6	-0.4	-1.0	-4.1	-1.1	-0.4	-3.0	-1.2	-1.6
Short term interest rate (3-month Libor CHF) (2)	0.6	-0.8	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.8	-0.8	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Yield of 10 years federal bonds (2)	1.5	-0.4	-0.4	-0.5	-0.5	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1	0.0	0.1	-0.4	-0.4	0.0
Consumer prices (3)	0.2	-1.0	-0.4	-0.2	-0.1	0.3	0.1	0.1	0.2	0.2	0.2	0.3	0.3	-0.4	0.2	0.3
Full-time equivalent employment (4)	1.3	-0.1	0.3	0.6	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.0	0.6	0.7
Unemployment rate (2,5)	2.9	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.4	3.4

(1) Annualized

(2) Level

(3) Same quarter of previous year

(4) Smooth components annualized

(5) Unemployed as percentage of labour force according to census of 2010

## GLOBAL ECONOMY

	2007-2015	Percentage change against												previous year		
		previous quarter (annualized, seasonal adjusted)				2017				2018						
		2016		Q1 Q2 Q3 Q4		2016	2017	2018								
Real Gross Domestic Product (GDP)																
– OECD total	1.2	1.5	1.2	1.9	1.7	1.7	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.5	1.7	1.8
– European Union (EU-28)	0.7	2.0	1.6	1.7	1.7	1.5	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.6	1.6
– USA	1.3	0.8	1.1	2.5	2.1	2.3	2.3	2.3	2.3	2.1	2.1	2.0	2.0	1.4	2.2	2.1
– Japan	0.4	2.1	0.7	0.4	0.8	0.9	1.1	0.9	0.9	0.7	0.7	0.7	0.8	0.6	0.8	0.8
Oil price (\$ per barrel) (1)	88.3	34.5	47.0	46.6	46.8	47.1	47.3	47.5	47.8	48.0	48.2	48.5	48.7	43.7	47.4	48.4

(1) Level

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