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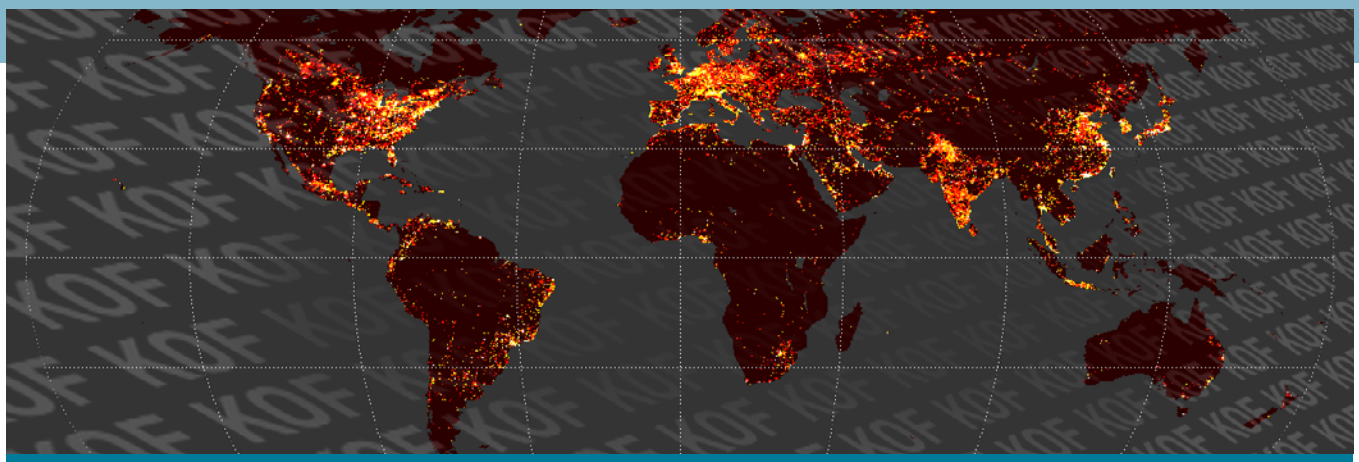

KOF Bulletin

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KOF Swiss Economic Institute

EDITORIAL

Dear readers,

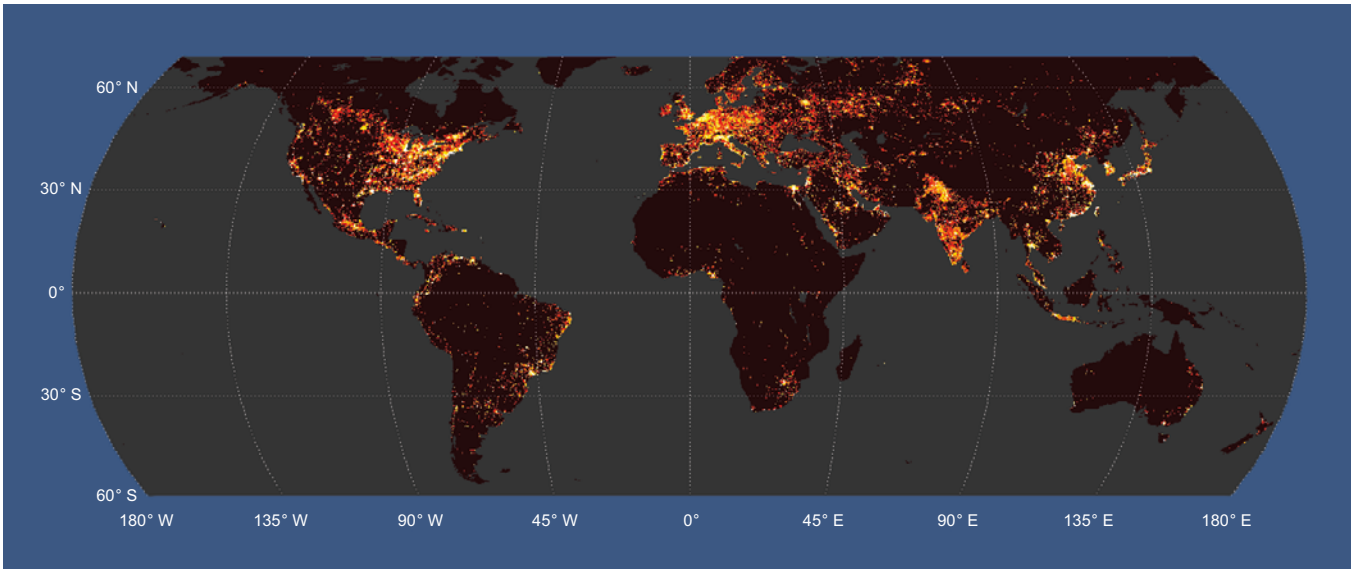
'Forecasters in outer space' could be the headline of the first article in our current bulletin, which shows that accurate economic forecasts can be derived not only from indicators or econometric models but also from light beams measured by satellites. This is particularly relevant in the case of specific regions for which no hard data is available. A further article examines the question whether the level of development of a financial sector can explain the differences in tax deductibility of debt interest. The article shows that countries with less developed financial sectors often have more generous deduction rules for internal interest expenses. The other articles in the bulletin discuss the framework curriculum for PET colleges, the spread of Airbnb in Switzerland and so-called PEIA, preferential economic integration agreements, involving various countries.

We hope you enjoy your read,

David Iselin, Solenn Le Goff and Anne Stücker

ECONOMY AND RESEARCH

An Outer Space View of Business Cycles



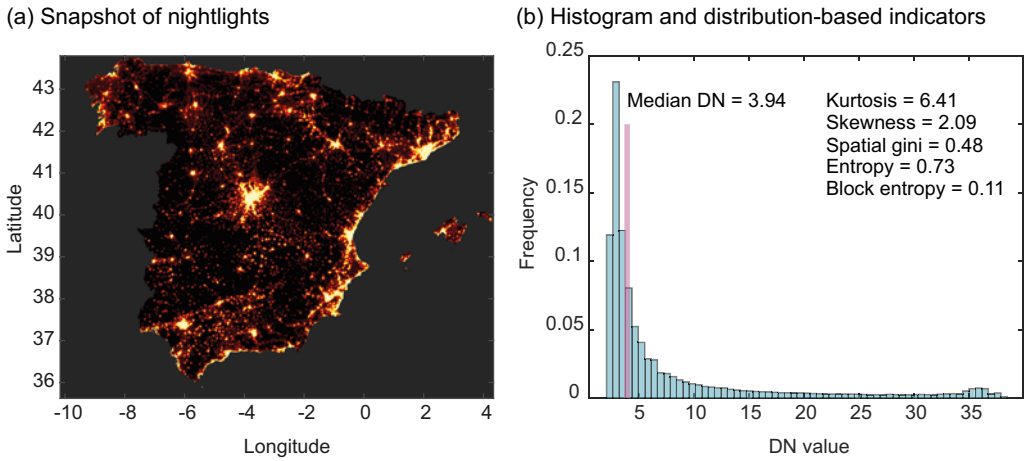
Nighttime lights data captured by satellites can provide useful information regarding the current economic activity across countries and regions, and also for the prediction of future developments. In a recently published KOF Working Paper, Jaqueson K. Galimberti presents his latest research and promising results favouring the use of this innovative source of data for macroeconomic measurement and forecasting.

Forecasts of economic activity are crucial to the decision-making process of policymakers and market participants in general. In order to improve the accuracy of model-based forecasts, applied research tends to focus on finding and evaluating new data sources and on developing methods to extract and combine predictive information from these data. Traditional sources of data for macroeconomic forecasting include so-called hard data, produced by statistical agencies to reflect direct measurements of economic activity; soft data, collected from market participants in the form of surveys; and financial data, often providing high frequency information about market perceptions. A relatively newer source of data that has received growing attention in economic literature is data provided by nighttime lights observations, captured by optical sensors onboard satellites orbiting Earth. In his paper, Jaqueson K. Galimberti proposes an evaluation of the usefulness of nightlights data for the prediction of annual GDP growth across a global sample of 172 countries.

Nightlights data provide accurate measurements of human activity on the ground

The underlying hypothesis in the use of nightlights to predict a country's GDP is that the emission of lights indicate the presence of economic activity in that country's territory. For forecasting purposes it is the dynamics of such a relationship that matter. In other words, the usefulness of the nightlights data for macroeconomic forecasting depends on whether lagged light measurements provide leading signals of current and future economic activity. In this

G 1: Nightlights Distribution-based Indicators for Spain, 2013



Notes: The snapshot is based on stable lights data with intensities depicted in logarithmic scale. The histogram excludes unlit pixels. See paper for further details and sources.

context, perhaps the greatest advantage of nightlights data over traditional sources of macroeconomic data is that they allow a more precise geographical mapping of economic activity through timely snapshots of what is happening in a given region over a given period. Hence, the nightlights data are less prone to the type of measurement errors affecting national accounting statistics, often leading to data revisions, and they can provide location-based predictive signals of aggregate economic activity, for example by capturing the geographical spread of production chains across regions.

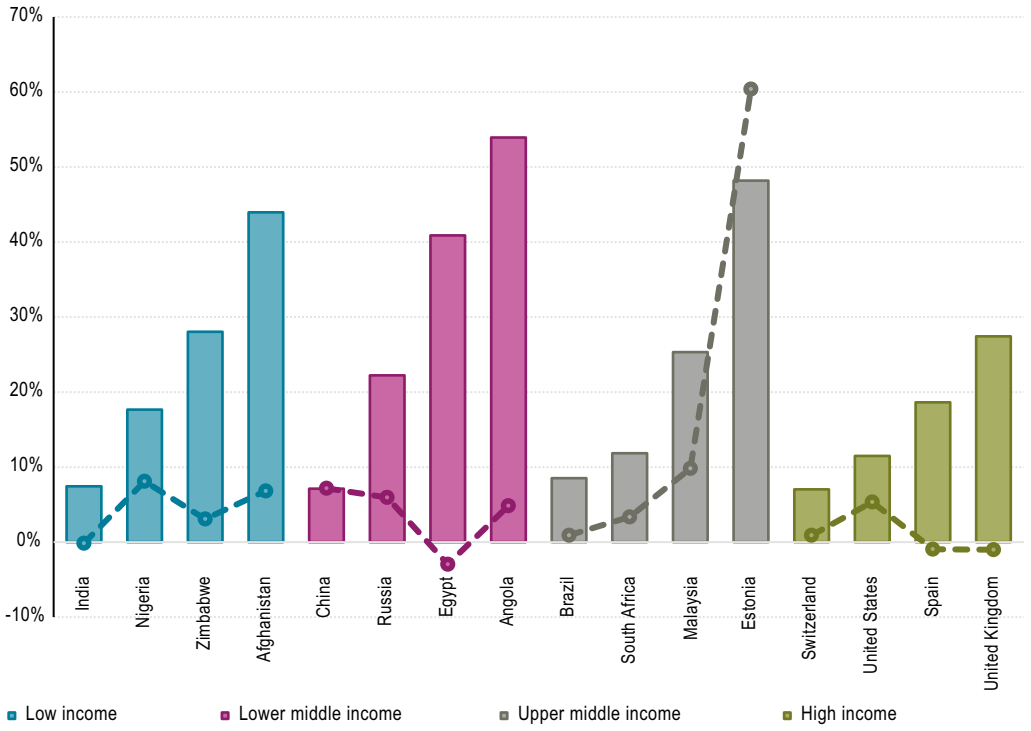
Richness of nightlights information allows construction of several indicators

Thus, for forecasting purposes, current observations of lights require processing into the form of leading indicators of future economic activity, and there are several possibilities along this dimension. In fact, the main contribution of Galimberti's paper is its proposal of innovative measures for the extraction of predictive signals of macroeconomic activity from the richness of information provided by the nightlights dataset. Such indicators are classified into three categories: (i) aggregate indicators, (ii) distribution-based indicators and (iii) location-based indicators. The paper provides further details about these indicators. Graph G 1 depicts an illustration of the distribution-based indicators for the case of Spain in 2013.

Nightlights indicators find useful application across a global sample of countries

Processing the sample of available nightlights data yields the time series input for the construction of model-based forecasts of annual GDP growth for 172 countries over the period 1993–2014. These forecasts are constructed by augmenting a benchmark first-order autoregressive model on GDP growth rates with the lagged values of the nightlights indicators. Compared to the benchmark specification, the evidence tends to be favourable to the incorporation of nightlights data for GDP growth forecasting: in-sample accuracy improvements, averaged across countries using their GDP levels as weights, range from 2.9 per cent to 7.2 per cent, depending on the indicator. The results also point to some heterogeneity of performance across countries. Graph G 2 illustrates this finding for a selection of countries, showing how the average improvements can conceal substantial variability of individual performances. Interestingly, these performances do not seem to be related to the countries levels of development. In out-of-sample

G 2: Nightlights Improvements to Accuracy of GDP Growth Forecasts for Selected Countries



Notes: Improvements are measured by the decrease to the mean squared forecast errors incurred by a benchmark first-order autoregressive model augmented with the best performing nightlights-based indicator for each country. The bars refer to an in-sample forecasting exercise over the period from 1993 to 2014, using country-specific models estimated with data from 1992 to 2013. The lines with circles refer to an out-of-sample forecasting exercise over the period from 2001 to 2014, using panel models recursively estimated with expanding windows of data from 1992 to 2000, 2001, and so on up to 2013. Countries income classifications are obtained from the World Bank.

tests, i.e restricting the use of data for model estimation to that available to a forecaster at the time the forecast is made, the performance of the nightlights-based forecasts deteriorate, a result mainly caused by the unavailability of large enough samples of data at the country-individual-level. Panel data specifications seem to provide an interesting alternative in the latter circumstances, although the data provides weak support to the assumption of a common relationship between the nightlights and GDP across countries.

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The KOF Working Paper Nr. 427 'Forecasting GDP growth from the outer space' by Jaqueson K. Galimberti can be found on the website:
www.e-collection.library.ethz.ch/view/eth:50564 →

Can Financial Development Explain the Differences in Thin Capitalisation Rules Across Countries?

Debt shifting is a strategy applied by multinational firms to shift profits from high-tax to low-tax countries. Because interest payments on debt are generally tax deductible, while opportunity costs of equity are not, multinational firms can reduce their overall corporate tax payments by financing a related affiliate in a high-tax country with loans provided by another affiliate located in a low-tax country. Mohammed Mardan explains in a new paper why thin capitalisation rules vary across countries.

The OECD's BEPS initiative

In the aftermath of the global financial crisis, many governments had to cope with reduced tax revenues and rising debt levels. During this time, the debate about the taxation of multinational companies resurged among government commissions and the public. The public debate was kicked-off mainly by the fact that large global players such as Apple, Google, and Starbucks pay hardly any corporate income taxes. In its report 'Base Erosion and Profit Shifting' (BEPS), the OECD confirms that profit shifting is a substantial issue that corrupts the integrity of the corporate income tax system. The OECD identifies debt shifting as one of the reasons why many high-tax countries have to deal with lower corporate tax revenues. One of the actions (Action 4) proposed in the OECD's final report calls for the best practices in the design of rules to prevent base erosion through the use of interest expense.

Cross-country differences in thin capitalisation rules

The purpose of these so-called thin capitalisation rules is to limit the possibilities for multinational firms to engage in debt shifting. In practice, thin capitalisation rules vary in two ways across countries – generosity and type. The common way of introducing a thin capitalisation rule is to implement a safe haven rule, which disallows the tax deduction of interest payments to related parties if internal debt exceeds a specified debt-to-equity ratio. Table 1 shows that there is a clear pattern between financial development and the strictness of the thin capitalisation rule. While the least financially developed countries allow, on average, the highest deductions, this generosity declines the higher the financial development.

Moreover, recently, some countries decided to switch from a safe haven rule to an earnings-stripping rule, which restricts tax deductibility if internal interest payments exceed a certain fraction of an affiliate's earnings before interest, taxes, depreciation and amortisation (EBITDA), as an attempt to reduce multinational firms' ability to engage in tax base eroding practices. Interestingly, these switches have only been made in financially advanced countries.

T 1: Strictness of Thin Capitalisation Rules and Financial Development

Financial development	Average deduction allowance for internal interest expenses (debt-to-asset ratio)
Low	0.93
Moderate	0.87
High	0.83
Very high	0.75

Financial development and the design of thin capitalisation rules

Immediately, the question arises, which role financial development plays in explaining these patterns. Specifically, why are financially less developed countries more generous in their deduction allowances and why are financially advanced countries more eager to adopt an earnings-stripping rule?

The answer to the first question is based on the fact that financially less developed countries are characterised by a more difficult access for firms to external finance. This creates a need to use internal sources of funds to finance investment. Because the reduction of such distortions by adjusting institutions is not possible in the short run, governments of financially less developed countries may allow for more generous deduction rules for internal interest payments, in order to foster the use of internal funds and to boost investment also in the short run.

The answer to the second question is related to the main difference between an earnings-stripping rule and a safe haven rule. While the latter only restricts the amount of internal debt, the former restricts the value of internal interest payments. An earnings-stripping rule therefore curtails debt shifting more effectively but with the result that firms' financing costs for internal debt increase with the consequence of reduced investment levels. However, because firms located in financially advanced countries have good access to external finance, the negative investment effect of a stricter thin capitalisation rule is small. Eventually, only the prevention of the erosion of the tax base matters for these countries, which can be achieved more effectively by using an earnings-stripping rule.

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Is the Framework Curriculum for Business Administration Studies at PET Colleges Up to Date?

KOF is carrying out regular surveys among students and their employers to ascertain whether the Framework Curriculum for Business Studies at PET Colleges is still up to date.

Annual survey among students and employers

Part-time studies at a Swiss College for Professional Education and Training (PET Colleges) leading to a 'dipl. Betriebswirtschafter/in Höhere Fachschule' (HFW) [Advanced Federal Diploma of Higher Education in Business Administration] aim to turn the students, whose average age is 29, into 'all-rounders with comprehensive, integrated and practical technical and management skills'. To assess the up-to-dateness of the framework curriculum of PET Colleges (RLP HFW), KOF is conducting an annual survey among last year students and their employers on behalf of the body responsible for the RLP HFW (consisting of representatives of HFW.CH, the Interessengemeinschaft Kaufmännische Grundbildung Schweiz (IGKG) [Interest Group Basic Commercial Training Switzerland] and the Kaufmännischer Verband [Commercial Association]). Over 1,800 prospective graduates of PET Colleges and around 230 employers have been interviewed in the context of the last three surveys in 2014, 2015 and 2016.

The study, which is based on the surveys, analyses the up-to-dateness of the RLP HFW by applying four groups of indicators: satisfaction with the studies, students' expectations of their future labour market outcomes, relevance of acquired skills, and gaps in the framework curriculum (RLP HFW).

Satisfaction with the course remains high

In the first group of indicators, students provide information regarding their satisfaction with the course in general, with regard to its relevance to their current workplace

According to a KOF survey students are satisfied with pursuing a BA at PET Colleges.

responsibilities, and with regard to their future career. According to the results, the students are particularly satisfied with the course in regard to their future situation. This emphasises the significance of the course for all-rounder careers. Since none of the satisfaction indicators declined between 2014 and 2016, there is no indication that the RLP HFW is no longer up to date.

Students' labour market expectations are stable

In the second group of indicators, students are asked about their expectations regarding future labour market outcomes. On average, 52 per cent of the students expect higher wages after graduation. In the employer survey, the response is even higher than this and has remained more or less unchanged in the period 2014–2016. The extent of the anticipated salary increase is substantial at 18 per cent. While students' expectations have actually gone up in this area, employers' expectations have declined. The proportion of students expecting a new position within three years of graduating with an Advanced Federal Diploma of Higher Education in Business Administration has remained stable at 59 per cent. In contrast, the employers' results show a slightly negative trend which is not statistically sound due to the small sample.

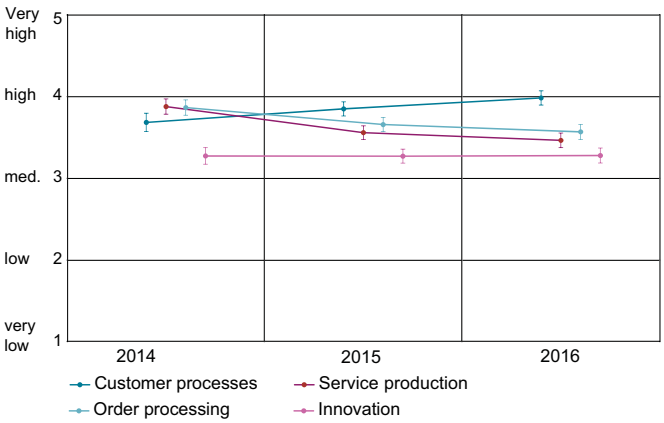
Customer processes gaining significance

The third group of indicators examines the trend in the relevance of the skills specified in the RLP HFW. According to the results, the skills taught under the curriculum have not become any less relevant; however, shifts in relevance within and between various processes have been identified. For instance, the relevance of strategic (e.g. management processes), supporting (e.g. HR processes) and comprehensive (e.g. project management) processes has hardly changed. In contrast, there has been substantial change within the business processes (see G 3). Customer processes have gained relevance while service production and order processing have become less important. Innovation processes were the least relevant in all three years.

RLP HFW continues to provide comprehensive coverage

The fourth group of indicators analyses whether an increasing proportion of students and employers identifies any gaps in the RLP HFW. This is not the case.

G 3: Relevance of Skills Within the Four Business Processes



This graph uses standard errors to show the mean values and statistical uncertainty;
Data: Surveys to Evaluate the RLP HFW 2014, 2015 and 2016;
N: 465 (2014), 677 (2015), 642 (2016).

The framework curriculum remains up to date

Thanks to a wide range of indicators, the study shows that the RLP HFW is generally up to date and meets the students' needs. However, in future surveys, particular attention should be paid to expected labour market developments and the relevance of the different processes. This will help gain important information on the changing requirements students, and hence the PET Colleges, have to meet.

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KOF Study No. 91 'Dritter Bericht zur Evaluation des Rahmenlehrplans für den Bildungsgang ‹dipl. Betriebswirtschafter/in HF›, Aktualität des Rahmenlehrplans und Wirksamkeit pädagogischer Instrumente' (Third report on the evaluation of the framework curriculum for the Advanced Federal Diploma of Higher Education in Business Administration, up-to-dateness of the framework curriculum and effectiveness of pedagogic instruments) by Ursula Renold, Thomas Bolli and Ladina Rageth is available on our website at (in German):
www.kof.ethz.ch/publikationen/kof-studien →

(Non-)Hotel Accommodation vs. Airbnb

KOF publishes its Forecasts for Swiss Tourism twice a year. The latest study, which also contains structural analysis of the significance of various accommodation categories, including classic hotels, non-hotel accommodation and Airbnb as separate categories, shows that Airbnb is gaining ground in city destinations and regions with large numbers of holiday apartments.

Tourist accommodation is broken down into hotels on the one hand and non-hotel accommodation on the other. Available for the first time for the year 2016, the Federal Statistical Office's (BFS) latest statistics for non-hotel accommodation provide supply and demand figures for commercially run holiday apartments, collective lodgings and campsites. Furthermore, Airbnb has been playing an increasingly important role in the last few years.[1]

How many beds are available?

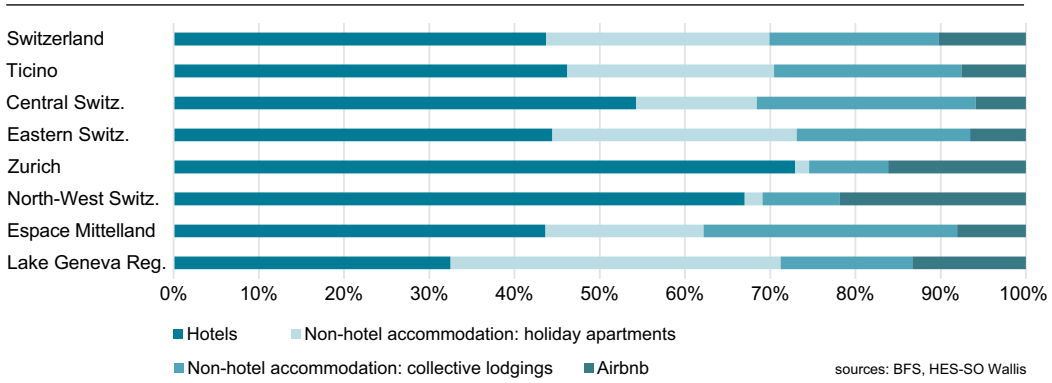
On the supply side, the distinction between the different accommodation categories is made on the basis of their bed capacities. It should be noted that the non-hotel accommodation statistics are based on a sample survey. Campsites were not included since comparative supply analysis is difficult to perform. Properties may be counted twice if they are included in classic hotels while also being offered on Airbnb.

Nationwide, 272,000 hotel beds were offered in 2016, accounting for just under 44 per cent (see G 4) of the total number of beds provided by hotels, holiday apartments and collective lodgings as well as Airbnb. Non-hotel accommodation accounted for as much as 286,000 beds, with holiday apartments making up just over 50 per cent of this number. This corresponds to a market share of 46 per cent. As per the end of January 2017, the number of beds available via Airbnb amounted to 64,000, which represents a market share of 10 per cent.

Graph G 5 shows that the individual accommodation categories have different weightings in the different regions. At 40 per cent to 50 per cent of total bed capacities, non-hotel accommodation makes up a significant percentage in the Lake Geneva region (especially Valais), Eastern Switzerland (Grisons), Espace Mittelland (Bernese Oberland) and Ticino. In the city destinations of Zurich and North-West Switzerland, hotels have the highest market share. On top of this, Airbnb apartments have become a significant form of accommodation at a 16 per cent and 21 per cent market share respectively.

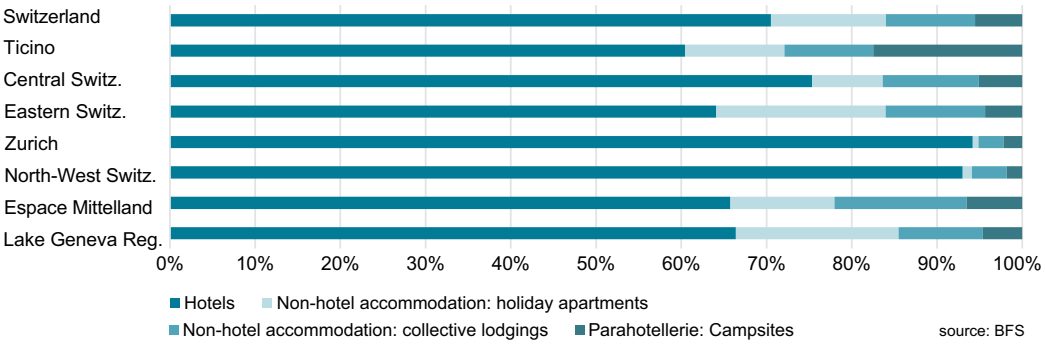
The trend of the last few years illustrates the increasing role played by Airbnb. Between 2014 and 2017, the number of hotel beds remained more or less unchanged at 272,000.

G 4: Supply in Accommodation Categories by Major Regions
(share in total number of beds in 2016)



[1] Airbnb figures were collected by the Tourism Institute of Walliser Fachhochschule for the years 2014–2017.

G 5: Demand in Different Accommodation Categories by Major Region
(number of overnight stays in 2016)



While hotel capacities expanded in urban regions, such as Zurich, Waadt and Basel, they declined in Valais, Ticino, Central Switzerland and Eastern Switzerland. In the same period, the number of beds offered via Airbnb tripled, increasing by 43,000. The fastest growth was recorded in cantons with large numbers of holiday apartments, such as Valais (+14,000 beds), Grisons (+5,400), Bern (+4,300) and Ticino (+2,000), and in urban cantons like Waadt (+3,700), Zurich (+2,900) and Basel (+2,200).

How big is the demand for beds?

On the demand side, comparative analysis of accommodation types is based on overnight stays. In 2016, non-hotel accommodation (holiday apartments, collective lodgings and campsites) registered around 14.9 million overnight stays, accounting for approximately 30 per cent of all tourist accommodation.[2] Holiday apartments made up just under 14 per cent. Owing to lower capacity utilisation compared to the hotel industry, the share of non-hotel accommodation in total demand is lower than its share in total supply.

As shown in Graph G 5, the predominantly urban regions of Zurich and North-West Switzerland generate over 90 per cent of all overnight stays in the hotel sector. High shares of non-hotel accommodation can be found in Eastern Switzerland (Grisons), Espace Mittelland (Bernese Oberland) and the Lake Geneva region (Valais). Campsites play a significant role in Ticino.

In comparison to the hotel industry, non-hotel accommodation focuses predominantly on domestic guests, who were responsible for close to 70 per cent of all overnight stays in 2016. In the hotel industry, the share of domestic guests is 46 per cent. Furthermore, European guests accounted for over 80 per cent of overnight stays by foreign visitors in non-hotel accommodation, while non-European guests play a significant role in the hotel sector.

Pressure on classic hotels remains high

Nationwide, classic non-hotel accommodation accounts for around 44 per cent of all beds and 30 per cent of all overnight stays. It plays a particularly important role in the Alpine region. Demand is mainly of a domestic nature. Airbnb is a new accommodation type that has expanded considerably in the last few years and is likely to continue growing in the future. The importance of Airbnb is highest in cities and regions with large numbers of holiday apartments. The platform increases suppliers' opportunities to offer non-hotel accommodation to foreign tourists and raise their capacity utilisation. Competitive pressure on classic hotels is likely to increase.

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The current KOF Forecasts for Swiss Tourism are available at (in German):
www.kof.ethz.ch/publikationen/kof-studien →

[2] Hotel industry and non-hotel accommodation. Airnbnb demand-side information not available.

Comparing Apples to Apples in the Assessment of the Value of Preferential Market Access

Putting a number on how effective policymakers are in boosting cross-border trade is important. But doing so in a statistically sound way is not trivial. Peter Egger and Filip Tarlea present a new methodology to identify the causal effect of preferential economic integration agreements. Their methodology finds trade effects that are somewhat smaller than predicted by established, but problematic, procedures.

Putting a number on how effective policymakers are in boosting economic outcome is important.[1] Recent academic work has highlighted that participating in preferential economic integration agreements (PEIAs) is beneficial for their members (Frankel et al. 2004, Baier and Bergstrand 2004). In practice, preferential market access can be granted through a preferential trade agreement, a bilateral investment treaty, a double-taxation treaty, or any combination thereof. Countries that are closer to each other – or even share a common land border, have common cultural heritage, or a common language – are predicted to, and have been found more likely to, conclude such agreements. Hence, there is a natural selection of countries into membership of the same agreement. While this is plausible and unanimously accepted in the literature, it makes measuring the impact of PEIAs difficult. Owing to this self-selection problem, a linear empirical specification of trade flows as a function of PEIA indicators – even conditional on a linear function of the joint drivers of trade flows and PEIA membership – may not reveal the causal partial effect of PEIAs on trade flows.

Recent work suggested that this problem can be avoided by resorting to modern (non-linear, if not non-parametric) estimation techniques. These rely on the idea that the propensity of PEIA membership could be modelled as a function of the joint determinants of, for example, trade flows (or other outcomes) and PEIA membership. As long as it is guaranteed that similarity in this estimated propensity would mean similarity in each and every observable determinant behind it – often referred to as 'balancing' – it could be used as a metric to identify similar PEIA members and non-members. In this case, a comparison of economic outcomes of similar members and non-members would reveal the causal partial impact of PEIAs on economic outcome.

In their new work, Peter Egger and Filip Tarlea demonstrate that the commonly used observable variables (such as economic size, distance, etc.) violate the required property of balancing and, hence, that comparing member and non-member country pairs with similar PEIA-membership propensities means comparing apples to oranges (Egger and Tarlea 2017). In fact, they demonstrate that customary procedures of causal-effects estimates of PEIA membership induce a bias of their own, which entirely accrues to the unbalanced nature of the observable PEIA membership determinants.

In a sample covering the universe of country pairs over the period 1961–2010, they test the assumption of the balancing of observable joint determinants of PEIA membership and trade flows for seven (and 19, when allowing for different depths of PTA) combinations of PEIAs acting as treatments. They then run- for each year, PEIA treatment, and observable- a mean-comparison test (and also a variance-comparison test) against the null hypothesis of there being no difference in the observables between PEIA members and non-members.

Egger and Tarlea do this with three comparisons: one, where they do not condition on the observables of PEIA membership in any way (this is comparing apples to oranges); a second, where they weight observables inversely by the estimated propensity of PEIA membership (this is still comparing apples to oranges, if the observables for similar-propensity members and non-members are not similar); and a third, where they enforce the similarity for each and every observable determinant of PEIA membership when weighting the data (this is comparing apples to apples). The latter method of balancing-enforcement of the observables employed here relies on so-called entropy balancing introduced by Hainmüller (2012).

[1] This article was originally published on voxeu.org: http://voxeu.org/article/assessing-value-preferential-market-access

Graph G 6 shows an illustration of the outcome of these three test types for mean comparisons of the observables between PEIA members and non-members. As there are 3'757 mean-comparison tests with seven types of PEIAs (and 9,756 such tests for 19 types of PEIAs), the authors plot the distribution (kernel density) of the probability values (p-values). Under the null hypothesis (when one would compare apples to apples), they would expect the tests to be statistically insignificant, shown by a high p-value. The surfaces in Graph G 6 suggest that virtually none of the observable PEIA determinants is unbalanced once balancing is enforced for the observables, while this is not the case for the other procedures. This is obvious from the high propensity of high p-values (no rejection of a comparability of observables between compared PEIA members and non-members) with the green locus relative to the other ones. This suggests that there is a potential problem in earlier work, which did not enforce such balancing of the employed observable characteristics economic outcomes and PEIA membership depend upon.

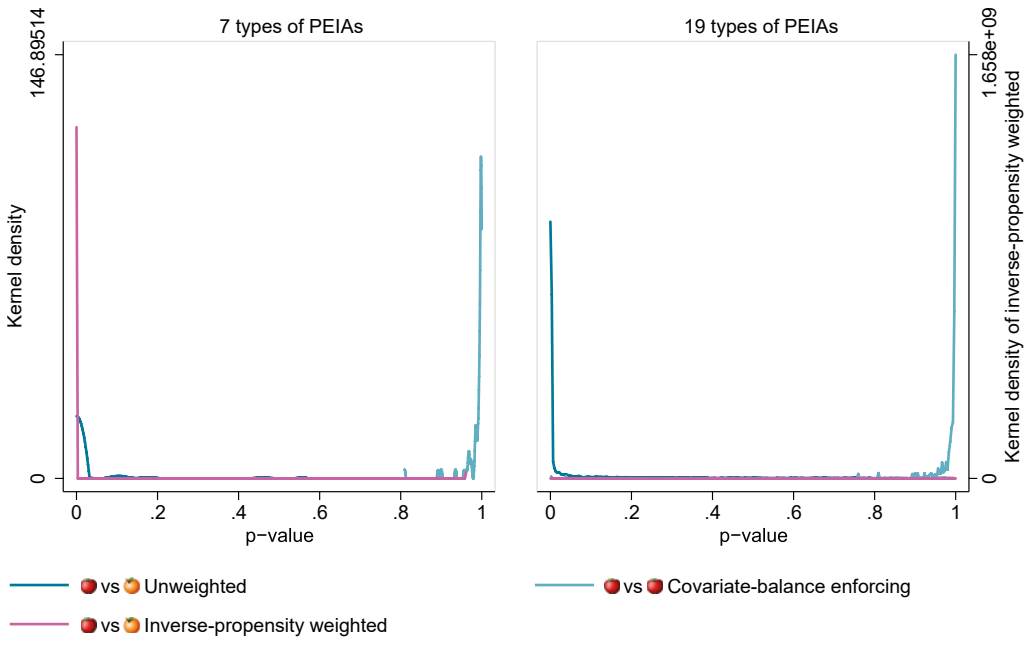
The authors do not stop here but demonstrate that, in the large dataset at hand, both of the customary methods lead to biased results. The partial effect of any of the seven types of PEIA on trade flows is consistently overestimated by the unweighted estimator, which simply conditions on a log-linear function of the observables when regressing trade flows on PEIA-membership indicators (see G 7). The inverse (PEIA-membership) propensity-weighted estimator does not do any better, though. It generates hard-to-believe results, suggesting, for example, that two countries that are in a preferential trade agreement and a bilateral investment treaty at the same time will trade one per cent less than the same two countries if they were in no type of PEIA.

The standard errors around the estimated coefficients of the latter estimator are also by far the largest of all. At one per cent, five per cent, or even 10 per cent, all estimated coefficients of the inverse propensity-weighted regression are not statistically significant.

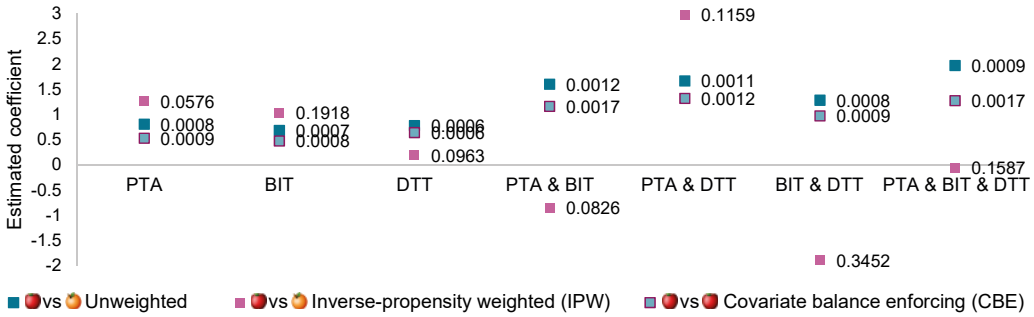
Lastly, Egger and Tarlea assess the quantitative meaning of these estimates in terms of responses of real consumption for each country to PEIA membership – as a utilitarian measure of well-being or welfare (see G 8). For this illustration, they use data for the year 2006 to illustrate the relevance of the balancing of the observables. In doing so, they document that the unweighted estimator always overestimates the effect of PEIAs on a country's welfare. The

G 6: Test of the Balancing of Observable Joint Determinants of PEIA Membership and Trade Flows

(kernel density of p-values: mean comparison test of 13 covariates between country pairs with and without a PEIA)

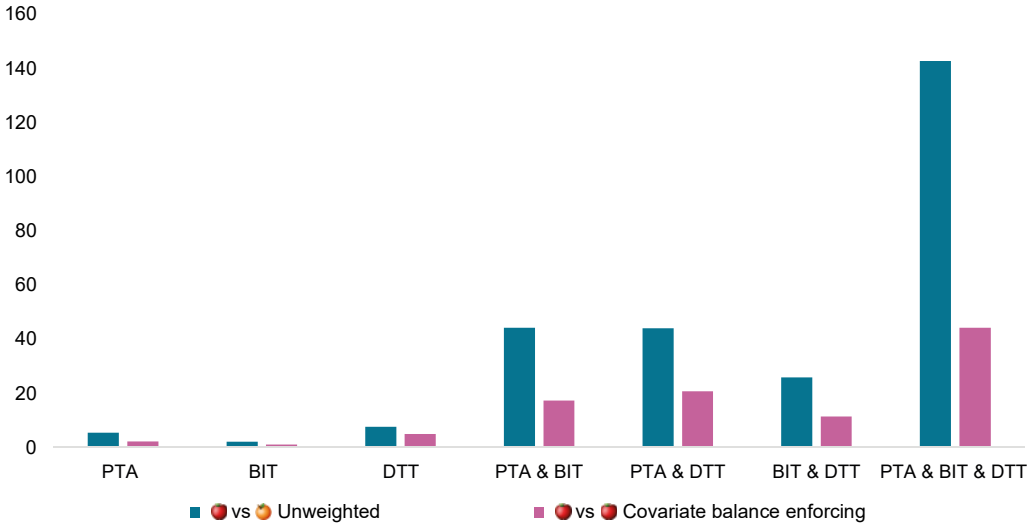


G 7: Impact of PEIAs on Trade Flows and Standard Errors



G 8: Change in Welfare when Signing a PEIA

(in %)



inverse propensity-weighted estimator, which is not represented in the graphics, does even worse and over- and underestimates treatment effects of PEIAs by a factor of up to 20 and 170, respectively.

The authors conclude from this analysis that enforcing balancing of observable determinants of PEIA membership is vital for meaningful quantitative assessments of their economic effects, no matter whether economists and policymakers are interested in partial (direct) effects on trade flows or on total ones which take wider adjustments of the economy into account.

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KOF INDICATORS

KOF Business Situation Indicator: Slight Improvement

In May 2017, the KOF Business Situation Indicator for the Swiss private economy was up slightly again, making this the fifth consecutive rise (see G 9). Economic activity in Switzerland is picking up, albeit with lower momentum than in the past few months.

In May, the business trend in the surveyed sectors was heterogeneous (see T 2). Financial and insurance service providers were the main drivers of the indicator's upward trend. The improvement in the manufacturing industry, which started at the beginning of the year, continued, albeit with lower dynamics. In contrast, the situation in the project engineering and construction industries did not quite keep up with the previous month. Retail businesses also reported a slight deterioration compared to the preceding month. Wholesalers, hotels and catering businesses and other service providers were last surveyed in April. At the time, wholesalers and the other service providers reported a significant improvement in their business situation. The business situation indicator went up slightly in the hotel and catering sector.

G 9: KOF Business Situation Indicator
(balance, seasonally adjusted)

T 2: KOF Business Situation for Switzerland (seasonally adjusted balances)

	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16	Dec 16	Jan 17	Feb 17	Mar 17	Apr 17	May 17
Private sector (overall)	9.9	8.1	9.8	10.7	11.1	11.5	9.7	9.2	9.7	11.3	13.6	20.0	20.6
Manufacturing	-5.7	-3.4	-8.7	-7.9	-7.6	-5.9	-9.5	-8.8	-9.8	-7.6	-5.4	-2.4	-1.9
Construction	23.0	22.9	23.8	27.6	23.2	25.0	26.4	24.3	28.2	28.0	32.0	31.8	29.9
Project engineering	47.0	43.8	45.5	46.2	46.1	45.8	42.1	46.4	47.5	47.6	49.5	50.2	47.7
Retail trade	-10.2	-8.6	-11.9	-10.7	-8.5	-7.5	-11.7	-9.3	-7.1	-9.8	-6.6	-3.6	-8.4
Wholesale trade	-	-	3.7	-	-	3.4	-	-	-7.5	-	-	14.7	-
Financial services	23.3	14.7	18.4	23.0	23.1	24.3	21.7	17.9	21.6	31.4	33.1	32.9	38.5
Hotel and catering	-	-	-21.9	-	-	-17.1	-	-	-17.1	-	-	-16.4	-
Other services	-	-	23.7	-	-	21.9	-	-	26.4	-	-	35.6	-

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.

In May, the business situation in the regions also followed different trends. Companies in Ticino benefited from substantial tail wind. So did enterprises in the Lake Geneva region, albeit to a lesser degree. In the other major regions according to the BFS – Central Switzerland, Zurich region, North-West Switzerland, Eastern Switzerland and Espace Mittelland – the business situation remained more or less unchanged (see G 10).

Explanation of graphs

Graph G 9 shows the KOF business situation for all sectors of the economy covered by the survey. For sectors of the economy that are only surveyed quarterly, the business situation is maintained at the same level during the intervening months.

Graph G 10 reports the business situation in the major regions used by the Federal Statistics Office. The regions are coloured differently depending on the business situation. The arrows within the regions indicate the change in the business situation compared to the previous month. An arrow pointing upwards means that the situation has improved compared to 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.

Contact

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G 10: 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

You can find more information about the KOF Business Tendency Surveys on our website: www.kof.ethz.ch/en/surveys/business-tendency-surveys →

KOF Economic Barometer Decreases Substantially

In May 2017, the KOF Economic Barometer fell by 4.7 points (from revised 106.3 in April) to a new standing of 101.6 (see G 11). After a slight downward correction in the last month, the indicator's value decreased substantially this month. However, with a standing slightly above its long-term average, the Barometer is signalling solid growth rates for the Swiss economy around its long-term average.

In May 2017, the KOF Economic Barometer stands, with its new value of 101.6 points, slightly above its long-term average. However, it did decrease substantially as compared to April. The decrease was mainly due to negative contributions by manufacturing. In addition, the indicators for the export development and for domestic consumption as well as the ones from the financial and the construction sectors contributed negatively to the dynamics of the Barometer.

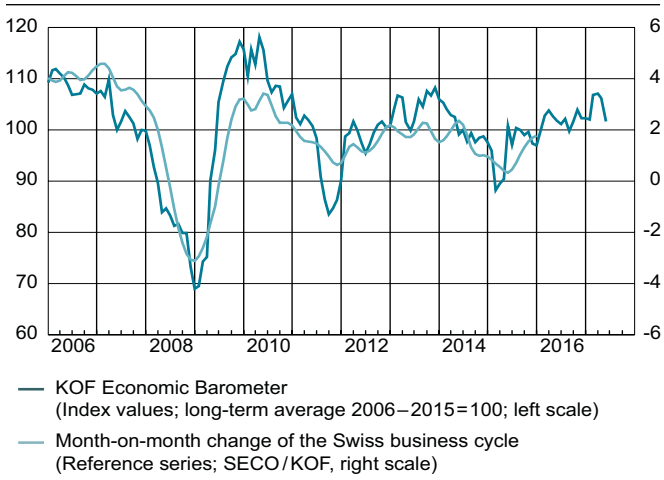
Within manufacturing, the negative outlook was mainly visible in the paper, metal and electronic industries. These negative dynamics were slightly compensated by a more positive outlook in the food industry.

Taken together, the environment for the Swiss industry has toughened somewhat. The substantially decreased sentiment in the manufacturing sector crystallised in particular in a more sceptical judgment of the incoming orders and competitiveness. In contrast, the indicators for inventories indicate a slightly more positive trend.

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 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.

G 11: Economic Barometer and Reference Series



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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 Prognosetagung Herbst 2017
Donnerstag 5. Oktober 2017, 17.45 Uhr
UBS Konferenzgebäude Grünenhof
Nüschelerstrasse 9, 8001 Zürich
Gastreferenten:
Prof. Simon J. Evenett, Universität St. Gallen – SIAW – Schweizerisches Institut für Aussenwirtschaft und Angewandte Wirtschaftsforschung
Prof. Dr. Tobias Straumann, Universität Zürich, Institut für Volkswirtschaftslehre, Historisches Seminar
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www.kof.ethz.ch/en/news-and-events/event-calendar-page/kof-research-seminar →

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Tables KOF Spring Forecast 2017

SWITZERLAND

Real Gross Domestic Product by Type of Expenditure

		Percentage change against														
		previous quarter (annualised, trend cycle component)												previous year		
	2008-	2016				2017				2018				2016	2017	2018
	2015	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Private consumption	1.5	1.0	0.7	1.1	1.7	1.2	0.6	0.7	0.8	1.0	1.2	1.0	1.0	1.2	1.0	1.0
Public consumption	1.5	2.6	2.6	1.5	1.0	1.5	1.7	1.3	1.3	1.1	1.1	1.0	1.0	1.9	1.5	1.2
Gross fixed capital formation	1.4	3.4	2.6	0.5	-0.6	-0.2	-0.2	-1.6	0.8	3.5	2.1	1.6	2.2	2.4	-0.1	1.6
– Construction	2.3	-0.7	-0.5	-0.1	0.2	0.9	1.9	2.3	2.8	2.8	2.1	1.8	1.6	0.0	1.1	2.3
– Machinery and equipment	0.9	5.9	4.7	0.8	-1.1	-0.9	-1.8	-3.9	-0.4	4.0	2.1	1.4	2.5	4.1	-0.9	1.0
Exports of goods (1) and services	2.3	8.1	4.2	-0.9	-1.6	1.0	4.6	5.5	4.1	2.7	3.0	4.5	4.0	4.9	2.0	3.7
– Goods (1), (2)	1.9	9.4	3.2	-0.2	-1.3	1.4	4.2	3.3	4.0	4.5	3.9	4.1	4.5	5.8	2.0	4.0
– Services	1.6	3.1	1.1	-1.5	-2.8	2.7	6.1	4.8	4.5	3.2	2.4	2.5	3.4	2.3	2.2	3.5
Imports of goods (1) and services	2.5	3.0	0.4	-1.3	-0.6	4.1	5.0	2.0	3.5	5.6	3.9	3.6	4.0	2.1	2.4	4.0
– Goods (1)	1.4	5.4	1.1	1.5	1.9	5.6	4.5	0.1	1.8	5.0	3.5	2.2	2.9	3.9	3.1	3.0
– Services	5.2	-2.4	-8.6	-8.1	-7.1	2.8	9.9	4.4	6.5	6.9	5.9	5.9	5.7	-1.3	1.1	6.1
Change in stocks (3)	-0.2	-2.6	-2.5	-0.8	1.7	3.2	1.8	-0.2	-0.1	0.7	1.0	0.5	0.1	-2.5	1.4	0.5
Gross Domestic Product (GDP)	1.3	1.9	1.5	0.6	0.5	1.7	2.2	1.9	2.0	2.0	2.0	2.1	2.2	1.3	1.5	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) Without merchanting
(3) Percentage contribution to GDP-growth

Other Macroeconomic Indicators

		Percentage change against														
		previous quarter												previous year		
	2008-	2016				2017				2018				2016	2017	2018
	2015	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Real effective exchange rate of CHF (1)	2.7	-1.3	-1.3	3.2	2.0	1.4	-2.5	-2.8	-0.8	-0.2	-0.9	-2.3	-0.3	-2.3	0.2	-1.2
Short term interest rate (3-month Libor CHF) (2)	0.2	-0.8	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Yield of 10 years federal bonds (2)	1.1	-0.4	-0.4	-0.5	-0.2	-0.1	-0.1	-0.1	-0.1	0.0	0.1	0.1	0.2	-0.4	-0.1	0.1
Consumer prices (3)	0.0	-1.0	-0.4	-0.2	-0.2	0.5	0.2	0.2	0.3	0.1	0.3	0.3	0.4	-0.4	0.3	0.3
Full-time equivalent employment (4)	1.0	-0.2	0.2	0.3	0.4	0.6	0.7	0.6	0.6	0.5	0.5	0.6	0.7	-0.1	0.5	0.6
Unemployment rate (2,5)	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3

(1) Annualised
(2) Level
(3) Same quarter of previous year
(4) Annualised trend-cycle component
(5) Unemployed as percentage of labour force according to survey 2012-2014

GLOBAL ECONOMY

		Percentage change against														
		previous quarter (annualised, seasonal adjusted)												previous year		
	2008-	2016				2017				2018				2016	2017	2018
	2015	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Real Gross Domestic Product (GDP)																
– OECD total	1.2	1.5	1.7	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.1	1.7	1.9	2.0
– European Union (EU-28)	0.6	1.8	1.7	1.8	2.1	1.8	1.6	1.6	1.6	1.7	1.5	1.5	1.5	1.8	1.8	1.6
– USA	1.3	0.8	1.4	3.5	1.9	2.0	2.1	2.1	2.2	2.4	2.5	2.6	2.6	1.6	2.2	2.4
– Japan	0.4	2.3	1.8	1.4	1.0	1.2	1.1	0.8	0.7	0.5	0.5	0.8	0.8	1.0	1.1	0.7
Oil price ($ per barrel) (1)	85.4	35.2	47.0	47.0	51.1	56.2	52.0	52.3	52.5	52.8	53.0	53.3	53.6	45.1	53.2	53.2

(1) Level

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