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KOF Bulletin

No. 91, December 2015

ECONOMY AND RESEARCH

Retail: Bleaker Outlook for Christmas Sales >> Are Educationally Heterogeneous Companies More Innovative Than Homogeneous Ones? >> What Drives Exchange Rate Persistence? The Role of Trend Inflation >> Reform Progress in Europe >>

KOF INDICATORS

KOF Business Situation: Indicator Rises Again >> KOF Economic Barometer: Slightly Dimmed Outlook >> Further KOF Publications >>

AGENDA

KOF Events >> Conferences/Workshops >>

No. 91, Dezember 2015

ECONOMY AND RESEARCH

RETAIL: BLEAKER OUTLOOK FOR CHRISTMAS SALES

The retail trade is recovering rather slowly from the effects of the minimum exchange rate suspension, with car dealers the only segment that can look back on a good year. Otherwise, consumers are still holding back and are not expected to part easily with their cash this Christmas.

Insecurity among consumers is still high. According to the index compiled by the State Secretariat for Economic Affairs (SECO), consumer sentiment hardly changed between July and October and remained below the long-term average (see G1). Respondents worry about a possible further increase in unemployment in the coming months. Confidence in the economic development, on the other hand, is higher than in July, while the assessment of savings opportunities and the anticipated financial situation has hardly changed.



WEAK RETAIL TRADE - BUT STRONG CAR SALES

In the last few months, real retail sales have been recovering slowly from the Swiss Franc shock. September's turnover was even slightly higher than the previous year's level. Nevertheless, the result so far remains below the previous year's figures. Furthermore, according to the KOF retail survey, retailers still consider their business situation to be unsatisfactory. There is a slight positive trend in turnover expectations. Nevertheless, all in all, expectations are still at a low level. Holiday retail sales are expected to be a moderate affair. The E&Y consumer survey on intended buying behaviour also confirms that consumers are currently holding back and that a boom in Christmas spending is unlikely. The average Christmas present budget is expected to be five per cent lower than last year's.

While the Swiss retail trade suffered a setback this year, car dealers have had little to complain about (see G 2) as new car registrations were gearing up for a new record. This is the one area that has not seen any consumer restraint. The trend did not slow down until October when the figures dipped slightly below the previous year's figures for the first time since January. Nevertheless, with just under eight per cent growth, the accumulated result from January to October is still excellent.



Up until now, domestic tourism has had a rather passable year. Despite the 2.5 per cent decline in domestic overnight stays in September, accumulated overnight stays are currently 0.6 per cent above the previous year's level. Nevertheless, according to the results of the KOF survey in the hotel and catering sector, hoteliers' expectations about the future trend in domestic overnight stays have not improved.

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KOF

No. 91, Dezember 2015

STABLE TREND IN INCOMES - WHERE IS THE MONEY GOING?

Given the positive trend in real incomes this year (2.7%), one might have expected a stronger trend in consumption. In the absence of any official statistics, it is difficult to assess how much money shopping tourism is actually diverting to foreign retailers and hoteliers. However, surveys and estimates indicate that the figure is somewhere in the billions. Should this assumption be wrong, we should see an increase in the savings rate.

ARE EDUCATIONALLY HETEROGENEOUS COMPANIES MORE INNOVATIVE THAN HOMOGENEOUS ONES?

What should the optimal educational mix of a company's staff look like in order to increase its innovation performance? A new KOF Study shows that, for this purpose, optimizing the skill-grade mix is more effective than maximizing a single indicator of the level of education. The authors of the study analyse the impact of vertical educational diversity, i.e. diversity in formal education degrees, on the innovation performance of firms.

The relevance of analysing the optimal mix is supported by the fact that studies on different aspects of the diversity of the workforce emphasize the creative power on the one hand and the costs of a heterogeneous workforce on the other hand – whether that diversity be ethic, religious or educational. Neither theory nor empirical investigations are clear on the influence of vertical educational diversity on the innovation performance of firms. While, for example, Østergaard et al. (2011) identify a positive relationship between educational diversity and the propensity to innovate, McGuirk and Jordan (2012) cannot confirm the positive relationship for process innovations, and Parrotta et al. (2014) find little evidence that educational diversity affects the patenting propensity or the patenting intensity of firms. The econometric challenges, the specificities of the countries analysed, the comprehensiveness of the data, or the fact that the innovation process is largely collapsed into a single stage might be reasons for the inconclusive results on the diversity-innovation relationship. Hence, these circumstances require further empirical investigations.

By looking at the cost-benefit aspects of an educationally diverse workforce, Thomas Bolli, Ursula Renold and Martin Wörter try to address some of the above-mentioned issues. First, their data allows the use of a wide range of innovation measures. Hence, they do not collapse innovation performance into a single stage, but differentiate between measures related to invention and those related to commercialization. They distinguish between innovation input (R&D expenditures) and three types of innovation output: incremental product innovations, more drastic product innovations, and process innovations. Consequently, they can fine-grain the effects of diversity on the innovation activities of firms and emphasise the different impacts of diversity on invention and commercialization (March 1991). Aside from differentiating between these measures, the authors further provide evidence regarding potential differences between the extensive and intensive margins, thereby extending the evidence for the impact of educational diversity on the invention (exploration) and commercialization (exploitation) activities of firms.

Second, their models have a comprehensive control vector comprising firm size, the appropriability of innovation results, the technological potential of a firm, the development of firm demand, and incoming spill-overs. In addition, they address the potential endogeneity of vertical educational diversity by exploiting within-firm variation as well as instrumenting vertical educational diversity by the labour supply available in the region. No. 91, Dezember 2015

Third, the authors look at vertical educational diversity -the diversity of education levels such as compulsory, upper secondary and tertiary education- while most of the literature focuses on horizontal educational diversity -diversity in terms of field of study at the tertiary level. This directly links to education policy issues in general, and is less related to the mix of academics from different fields of study, which is something on which most of the literature focuses.

Fourth, they provide first evidence for Switzerland, thereby extending the scant existing empirical literature that analyses Danish (Østergaard et al., 2011, and Parrotta et al. 2014) and Irish firms (McGuirk and Jordan, 2012). Switzerland is a particularly interesting case due to its strong vocational and professional education system (OECD 2010, Hoffman and Schwartz 2015). Furthermore, its industry structure differs from Denmark or Ireland, with a heavy emphasis on specific high-tech industries like pharmaceuticals, machinery, electrical equipment, and electronics/ optical products. Switzerland is technologically speaking a very innovative country, which presumably requires a higher degree of technological diversity and a high level of technological skills and formal education. Given these circumstances, it is not clear how educational diversity affects the innovation performance of this kind of country.

Based on Swiss firm-level panel data comprising five waves of the Swiss Innovation Survey covering the period 1999 to 2011, the authors find that vertical educational diversity is significantly positively related to the probability of conducting R&D and of launching new or improved products. This indicates that vertical educational diversity increases the firm's capability and incentives to explore new knowledge or to develop a new product. We also find that vertical educational diversity is unrelated or even negatively related to process innovation as well as to the commercial success of new or improved products. This means that vertical educational diversity tends to be negatively related to the commercial exploitation of the results of R&D or innovative activities. This is a relatively new finding, which pioneers improved theorising on the diversity-innovation relationship.

The KOF Working Paper by Thomas Bolli, Ursula Renold and Martin Wörter, "Vertical Educational Diversity and Innovation Performance", No. 395, can be downloaded on our website:

www.kof.ethz.ch/de/publikationen/p/kof-working-papers/395/ >>

You can also find the references to all above-cited studies in the paper.

WHAT DRIVES EXCHANGE RATE PERSISTENCE? THE ROLE OF TREND INFLATION

To what extent do economic fundamentals drive exchange rate movements? Following the seminal work by Meese and Rogoff (1983), a wealth of studies has aimed to answer this question by comparing the out-of-sample predictive ability of economic exchange rate models. A simple no-change forecast is usually not inferior to those model-based forecasts. In other words, many researchers find that the level of the real exchange rate is highly persistent and changes in the exchange rate are largely unpredictable. Taking those results at face value, one might argue that economic fundamentals play a limited role in explaining exchange rate movements.

Engel and West (2005) have challenged this view. They show that a highly persistent real exchange rate does not necessarily imply a lack of underlying economic driving forces. In fact, they show that the current real exchange rate depends on future expected economic fundamentals and that those

No. 91, Dezember 2015

expectations may become the most important driving forces. Thus, unpredictable changes in those expectations render changes in the real exchange rate largely unpredictable in out-of-sample predictive analyses.

THE IMPORTANT INFLATION STABILISING ROLE OF CENTRAL BANKS

In a recent research paper, Huber and Kaufmann (2015) show that expectations about trend inflation, in particular, may be responsible for a highly persistent real exchange rate. In theory, a rise in trend inflation in the home economy, everything else being equal, leads to a substantial depreciation of the real exchange rate against the foreign economy. The reason is that a persistent increase in trend inflation leads to lower expected real interest rates for a long time. By contrast, a temporary increase in inflation only has a small effect on inflation expectations and the real interest rate. Thus, the impact on the real exchange rate is much less pronounced. This suggests that the extent to which central banks manage to stabilise inflation expectations may be an important economic driving force explaining bilateral exchange rate dynamics.

It remains open whether this theory is consistent with the data. In their empirical model, Huber and Kaufmann (2015) define trend inflation as the best long-run forecast of inflation given the current state of information, and interpret this measure as an approximation to unobserved inflation expectations or the implicit inflation target of a central bank (see Ascari and Sbordone, 2014, and references therein). The model then relates the trend inflation rates in two countries to their bilateral real exchange rate. The model is estimated on data for the US Dollar against the currencies of a panel of six economies. As an example, Graphs G 3 and G 4 show the estimates for the CAD/USD and JPY/USD bilateral real exchange rates, respectively. The real exchange rate is measured in logarithms times 100, so that a positive deviation from zero can be interpreted as the degree of overvaluation of the USD, in percent. Dotted lines give 90 per cent credibility intervals.

MODEL PREDICTIONS FARE WELL

The model captures the majority of turning points of the two real exchange rates well. This is also reflected in the correlation with the actual real exchange rate which is as large as 0.5 for some currencies. The correlation is significantly higher compared with the existing literature, but also compared to a benchmark model that ignores the role of trend inflation. An important aspect for an empirical exchange rate model to match is the high persistence of the real exchange rate. Along

G 3: Real Exchange Rates and Model Predictions: CAD/USD



G 4: Real Exchange Rates and Model Predictions: JPY/USD



Notes: The dotted red lines show bilateral real exchange rates in logarithms x 100. A positive (negative) value implies an overvaluation (undervaluation) of the USD, in per cent. Blue solid lines show the central model predictions and blue dotted lines show a 90 per cent credibility interval.

No. 91, Dezember 2015

that dimension, the model predictions fare well, too. The estimates match the actual persistence of the real exchange rates quite closely. Moreover, a benchmark model without accounting for changes in trend inflation is found to perform significantly worse in explaining real exchange rate persistence.

Although changes in trend inflation improve our understanding of the persistence of the real exchange rate, there are some episodes where the model does not fit the actual data well. For example, starting in 1998, the USD appreciated against the CAD and rose outside of the credibility interval. Presumably, this related to several economic crises that forced investors to reduce their non-USD exposure ("flight to safety"). More specifically, the Asian financial crisis, hitting the region between 1997 and 1998, preceded the sovereign default of Russia and the unwinding of Long-Term Capital Management. Beside these developments in Asia, increased uncertainty surrounding the Argentinian crisis between 1998 and 2002 presumably contributed to the upward pressure on the US Dollar. The simple statistical model does not capture such safe-haven considerations well.

Moreover, significant deviations from the model predictions occur when the modelling assumptions are poor due to non-linearities, for example, at the effective lower bound on short-term interest rates and during non-conventional monetary policy actions. For the JPY/USD exchange rate, the results show a substantial deviation from the prediction in 1995 when short-term interest rates fell to essentially zero, i.e. to 0.4 per cent, in September 1995. Similarly, the model does not fully include non-conventional monetary policy actions and sharp and sudden upward-shifts in the inflation target because the estimated trend inflation rate evolves relatively smoothly. In effect, the JPY/USD exchange rate leaves the credibility interval in 2014 and the central estimate moves into the opposite direction of the actual exchange rate since 2012. This episode was governed by exceptional policy actions due to Abenomics, such as a higher inflation target, largescale asset purchases and an expansionary fiscal policy stance.

You will find the Working Paper from F. Huber and D. Kaufmann: "Trend Fundamentals and Exchange Rate Dynamics" on our website:

www.kof.ethz.ch/de/publikationen/p/kof-working-papers/393/ >> You will also find further informations regarding studies cited above.

REFORM PROGRESS IN EUROPE

Since the big recession in 2008, and even more so since the Euro crisis in 2011, European countries have been called upon to carry out structural reform and liberalise their markets. Aside from austerity measures, the rescue packages offered to countries in crisis were tied to additional supply side reforms intended to increase competitiveness and boost future growth potential. However, calls for reform designed to ensure future growth have now also been made in respect of supposedly strong countries, such as Germany.

In the following, the regulatory/administrative reform measures implemented so far is examined. The analysis is based on the World Bank's "Doing Business" report, which has been published annually since 2004 and provides a ranking of countries according to their ease of doing business. The rankings are based on individual sub-categories, among them starting a business, protection of minority investors and paying taxes. The reform progress in various European

KOF

KOF Bulletin

No. 91, Dezember 2015

countries is analysed by comparing the conditions companies faced before the big recession based on the 2008 "Doing Business" report and after the recession based on the report's latest version of April 2015.

In the course of the analysis, individual categories have been investigated to obtain a more detailed picture of the reform progress made so far. The conditions for business start-ups in Spain, Greece and Portugal, for instance, were rather restrictive before the big recession (see G5). Thanks to the removal of bureaucratic obstacles, these countries have moved up significantly in the rankings. Greece has reduced the number of processes required to set up a business from 15 to five and the time involved from 38 to 13 days. In Portugal,



the average time was even reduced to 2.5 days. In contrast, red tape in Germany, the UK and Switzerland remained largely unchanged, leaving these countries in a comparatively lower position.

PAYING TAXES BECAME TO SOME EXTENT EASIER...

The successful removal of bureaucratic obstacles can also be measured by the ease of paying corporate taxes (see G 6). In this respect, the situation in Germany, for instance, has not changed much while significant progress has been made in the peripheral countries. France and Italy have even lost ground in comparison to other countries. The UK and Switzerland, where paying taxes is considerably easier than in other countries, remain top of the class. In Switzerland, for instance, companies require an average of 63 hours per year to prepare their tax return. In Germany, the figure is 218 hours, in Italy as much as 269.



...BUT SOME PROGRESS CAN STILL BE DONE REGARDING LAW PROCEEDING AND CROSS-BORDER TRADE

In some areas, progress in reforms is not yet discernible. Mario Draghi, President of the European Central Bank, often refers to Italy when talking about insufficient reforms. The fact that it takes on average 1,185 days to enforce a contract through the Italian courts is reflected in the respective rank Italy occupies in the current "Doing Business" report. In Greece, court cases are also long-winded affairs, while Portugal, where court proceedings are now even more efficient than in the UK, has clearly made significant progress.

Cross-border trade is a further area with significant reform potential (see G 7). Although a decline in bureaucratic complexity in peripheral countries reflects some progress in this field, these countries are still lagging far behind core countries such as Germany and France. Deregulation in this area is particularly important since structural reform in the peripheral countries increases their competitiveness and hence their opportunities on the global markets. If trade across borders is hampered by bureaucratic obstacles, all other reforms will have a limited impact only.

No. 91, Dezember 2015

All in all, since the big recession, Spain, Portugal and Greece have made significant progress at reform (see G 8). Greece has taken the biggest steps, jumping 39 places and achieving aboveaverage growth rates in the last few quarters. Spain and Portugal are now roughly as attractive as France. However, at an aggregated level, not much has changed for enterprises in France, and Italy's lower ranking reflects the reform bottleneck inherited from previous governments. Consistently low growth rates are a further indication. Switzerland and the UK, which are not part of the Eurozone, have declined in rank. Although the peripheral countries have made significant progress, there remains room for further reforms if they want to create conditions as favourable as those in Germany, Switzerland or the UK. The latter three, however, all have their own potential for further reform.





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G 8: Overall Ranking



KOF INDICATORS

KOF BUSINESS SITUATION: INDICATOR RISES AGAIN

Following a small plus in October, the KOF Business Situation Indicator for the Swiss private economy rose again in November, albeit very slightly (see G 9). As yet, the survey results have failed to indicate a definite turnaround and the Swiss economic engine continues to stutter along.

The business situation has improved in the construction and manufacturing industries (see G 10). The latest rise in the construction sector is a reaction to the decline in October. In the manufacturing business, November's slight upward trend followed three months of almost no variation in values. The consistently positive situation in the project engineering sector, however, has deteriorated slightly. The retail situation is more or less stable. Wholesale, the hotel and catering industry and the other service providers were last surveyed in October. At the time, the business situation had improved slightly in all three sectors.



In November, the business situation improved specifically in Zurich, Espace Mittelland and North-West Switzerland (see G 11). The Lake Geneva region also recorded a slight increase in the Business Situation Indicator. Ticino, Central Switzerland and Eastern Switzerland did not

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No. 91, Dezember 2015

register any notable changes. Hence, the business situation was at least approaching stability in all regions. Although the overall increase in the Business Situation Indicator is not very large, it has a broad regional basis.

EXPLANATION OF GRAPHS

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

Graph G 10 shows the business situation and the current change in the situation. For monthly surveys the changes compared to the previous month are highlighted. For quarterly services the changes in the most recent quarter compared to



the previous quarter are reported. The quarterly values are not changed in the intervening months and are only updated in the first month of each quarter.

Graph G 11 reports the business situation in the major regions according to 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. For example, an upward arrow means that the situation has improved compared to the previous month.

The KOF business situation is based on more than 4,500 reports from businesses in Switzerland. Each month businesses are surveyed in the economic sectors of industry, retail trade, construction, project engineering and financial and







insurance services. Businesses in the hotel and catering sector, wholesalers and other service providers are surveyed quarterly in the first month of each quarter. Businesses are requested, amongst other things, to assess their current business situation. They may class their situation as "good", "satisfactory" or "bad". The balance of the current business situation is the percentage difference between the answers "good" and "bad".

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

No. 91, Dezember 2015

KOF ECONOMIC BAROMETER: SLIGHTLY DIMMED OUTLOOK

In November, the KOF Economic Barometer points at 97.9, which is, for the first time since April of this year, clearly below its long-term average (see G 12). Compared with October, it fell by 2.5 points (from a revised value of 100.4). According to the Barometer, the outlook for the Swiss economy is dimming.

The decrease of the Barometer in November is predominantly driven by a marked deterioration of sentiment reflected by the indicators on Swiss manufacturing activity. Another negative, but considerably less pronounced, contribution stems from the indicators related to exports. The indicators related to domestic construction, on the other hand, have dampened the fall of the Barometer. No significant signals are coming from the financial and the hotel and catering sectors. Within the manufacturing sector, the outlook particularly worsened in the metal industry, followed by the electrical industry.



KOF

A look at the different indicators reveals that a pronounced deterioration took place in the general assessment of the firms' business situation. Going into detail, the indicators relating to revenue, employment and technical capacity utilisation have exerted downward pressure on the Barometer. Apparently, the Swiss manufacturing sector is still struggling with the franc appreciation shock.

KOF ECONOMIC BAROMETER AND REFERENCE TIME SERIES: ANNUAL UPDATE

In September 2015, the scheduled annual update of the KOF Economic Barometer took place. This annual update concerns 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 technical adjustment how to cope with missing monthly values of guarterly variables. Compared to 479 indicators that entered the variable selection procedure in October 2014, the current pool comprises 420 indicators due to elimination of KOF surveys related to prices and monthly changes in inventories. 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 238 indicators (instead of 217 as in the previous vintage) that are combined using statistically determined weights. Last but not least, with this annual update we introduce a slight modification of how the variables observed at only the guarterly frequency are treated when computing the Barometer. Instead of freezing those values until the next quarterly release is available, we now implement a statistical procedure to interpolate data values for these variables using the information contained in all other variables that are available at monthly frequency.

For detailed information on the KOF Economic Barometer, visit our website: www.kof.ethz.ch/en/indicators/employment-indicator/ >>

No. 91, Dezember 2015



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You will find a complete list of all KOF publications (KOF Analyses, KOF Working Papers and KOF Studies) on our website.

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KOF ECONOMIC FORECAST

How much GDP growth does the KOF expect for this year? How will the labour market develop? You can find the latest KOF Economic Forecasts here:

www.kof.ethz.ch/static_media/bulletin/89/forecasts_autumn_en.pdf >>

AGENDA

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KOF EVENTS

KOF Research Seminar:

Any Non-Utilitarian Method of Policy Assessment Violates the Pareto Principle Floris Zoutman – Norwegian School of Economics

ETH Zurich, 8 December 2015

The Triangular Model with Random Coefficients

Stefan Hoderlein – Boston College

ETH Zurich, 9 December 2015

Survey Accuracy and Electoral Effects of Forecasts

Patricia Funk – Universitat Pompeu Fabra/Università della Svizzera Italiana

ETH Zurich, 16 December 2015

Informality and Access to Finance: Evidence from India

Thorsten Beck – Cass Business School

ETH Zurich, 13 January 2016

www.kof.ethz.ch/de/veranstaltungen/k/kof-research-seminar/ >>

KOF-ETH-UZH International Economic Policy Seminar:

Technology Adoption, Vertical Restraints and Partial Foreclosure:

Changing the Structure of an Industry

Michelle Sovinsky – University of Mannheim

ETH Zurich, 17 December 2015

tba

Rachel Griffith – University of Manchester and Institute For Fiscal Studies ETH Zurich, 9 March 2016

www.kof.ethz.ch/de/veranstaltungen/k/kof-eth-uzh-seminar-in-international-economicpolicy/ >>

KOF Media Agenda: www.kof.ethz.ch/en/medien/agenda/ >>

No. 91, Dezember 2015

CONFERENCES/WORKSHOPS

5th Workshop on "Financial Determinants of Exchange rates" Zurich (Switzerland), 17-18 December 2015 http://www.snb.ch/n/mmr/reference/sem_2015_12_17_callforpaper/source/sem_ 2015 12 17 callforpaper.n.pdf >> 9th Annual Conference on the Political Economy of International Organizations Salt Lake City, UT (USA), 7-9 January 2016 peio.me/ >> Annual Meeting of the European Public Choice Society Freiburg (Germany), 30 March – 2 April 2016 www.eucken.de/veranstaltungen/epcs-2016.html >> Workshop: The Politics of Education Policy: An International Perspective Cambridge MA (USA), 5-6 May 2016 www.cesifo-group.de/de/ifoHome/events/Archive/conferences/2016/05/ 2016-05-05-pep16-Woessmann.html >> 33rd CIRET Conference Copenhagen (Denmark), 14–17 September 2016 www.ciret.org/conferences/ >>

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No. 91, Dezember 2015

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NEXT PUBLICATION DATES

8 January 2016 | 5 February 2016

No. 91, Dezember 2015

TABLES – KOF Autumn Forecast 2015

SWITZERLAND

Real Gross Domestic Product by Type of Expenditure

]			Percentage change against														
			previous quarter (annualized, trend cycle component)										previous year				
	2006-		20	15			20	16		20	17	2015	2016	2017			
	2014	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Private consumption	1.7	0.9	1.2	1.3	1.6	1.9	1.9	1.7	1.6	1.6	1.4	1.2	1.0	1.2	1.7	1.5	
Public consumption	1.0	4.0	0.2	-2.8	-1.5	2.5	3.7	2.0	0.5	0.2	0.4	0.5	0.2	1.8	1.0	0.7	
Gross fixed capital formation	1.9	-0.3	3.1	4.9	4.8	3.5	-0.8	-3.6	-1.2	2.8	2.0	0.0	1.1	1.6	2.5	0.1	
- Construction	1.6	-1.3	1.9	3.4	2.8	0.3	-1.1	-1.0	0.0	0.9	0.0	-1.1	-1.4	0.0	0.7	-0.1	
 Machinery and equipment 	2.0	0.9	3.5	5.7	6.1	5.3	-0.6	-5.1	-2.0	4.0	3.4	0.7	2.6	2.7	3.6	0.3	
Exports of goods (1) and services	3.6	1.3	1.2	1.0	3.4	5.6	6.3	5.3	4.9	4.7	4.8	4.4	4.0	1.1	4.4	4.8	
– Goods	3.3	-5.1	-2.3	2.5	5.1	6.7	5.8	6.2	7.2	6.7	5.2	4.9	5.3	-0.8	5.2	6.1	
- Services	3.0	-1.0	1.6	4.8	4.3	5.0	4.6	3.2	3.0	3.7	3.7	3.0	3.2	1.5	4.3	3.4	
Imports of goods (1) and services	3.3	-1.0	-1.2	1.4	7.3	10.3	7.3	2.5	3.1	5.4	4.6	3.7	4.1	1.6	6.0	4.2	
– Goods (1)	2.6	-6.7	-6.5	-1.0	9.7	13.9	9.2	2.6	2.8	5.5	4.7	4.0	4.2	-2.0	6.9	4.4	
– Services	5.1	10.6	8.3	6.4	3.3	4.0	3.4	2.7	3.8	4.8	4.3	3.5	4.0	9.0	4.2	4.0	
Change in stocks (2)	0.2	-1.3	-2.4	-0.8	-0.6	-1.0	-0.5	0.0	0.1	0.5	0.0	-0.2	0.4	-0.3	-0.8	0.2	
Gross Domestic Product (GDP)	2.0	0.7	0.3	0.5	0.9	1.6	1.9	1.8	1.9	1.8	1.7	1.6	1.6	0.9	1.4	1.8	

(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																	
		Percentage change against															
			previous quarter											previous year			
	2006-	2015				2016					201	7		2015	2016	2017	
	2014	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Real effective exchange rate of CHF (1)	1.5	38.7	7.5	-11.6	-8.3	-4.5	-2.3	-4.7	-1.9	-2.9	-0.5	-3.1	-0.4	6.9	-4.9	-2.3	
Short term interest rate (3-month Libor CHF) (2)	0.8	-0.7	-0.8	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.4	-0.2	-0.7	-0.7	-0.5	
Yield of 10 years federal bonds (2)	1.8	0.0	0.0	-0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.0	0.3	0.7	
Consumer prices (3)	0.4	-0.7	-1.1	-1.3	-1.2	-0.6	-0.2	-0.1	0.0	0.1	0.2	0.3	0.4	-1.1	-0.2	0.3	
Full-time equivalent employment (4)	1.5	1.2	0.9	0.5	0.2	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.9	0.4	0.5	
Unemployment rate (2,5)	3.0	3.2	3.3	3.3	3.4	3.5	3.6	3.6	3.7	3.7	3.7	3.7	3.7	3.3	3.6	3.7	

(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

		Percentage change against																
		previous quarter (annualized, seasonal adjusted)													previous year			
	2006-		20	15			20	16			20	17	2015	2016	2017			
	2014	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
Real Gross Domestic Product (GDP)																		
– OECD total	1.3	1.9	2.1	1.6	2.1	2.1	2.0	2.0	2.0	2.4	1.0	1.9	2.0	2.0	2.0	1.9		
– European Union (EU-28)	0.8	2.2	1.8	1.6	1.8	1.7	1.8	1.8	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.9		
– USA	1.3	0.6	3.7	1.7	2.9	2.8	2.7	2.5	2.4	2.4	2.4	2.3	2.3	2.4	2.7	2.4		
– Japan	0.5	4.5	-1.2	1.1	0.8	0.8	0.9	0.9	0.9	3.7	-6.1	0.8	1.1	0.7	0.7	0.2		
Oil price (\$ per barrel) (1)	89.8	54.1	62.1	50.5	50.0	50.2	50.5	50.7	51.0	51.3	51.5	51.8	52.0	54.2	50.6	51.6		

(1) Level

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