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# SNB Research Report 2016

SCHWEIZERISCHE NATIONALBANK  
BANQUE NATIONALE SUISSE  
BANCA NAZIONALE SVIZZERA  
BANCA NAZIUNALA SVIZRA  
SWISS NATIONAL BANK





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# SNB Research Report 2016



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# Preface

Ladies and Gentlemen

I am pleased to present the second annual *SNB Research Report*. This publication provides detailed information about research activities in 2016 at the Swiss National Bank.

Why is research important for the SNB? I would like to give four reasons. First and foremost, sound economic analysis is the basis for effective monetary policy decisions. Good research helps to assess the consequences of various policy measures. Second, research helps central banks to monitor current trends in a continuously changing economic environment; the financial crisis proved how important this is. Third, research serves to retain expertise within the monetary authority, thereby supporting its independence in the decision-making process and its credibility. And fourth, in general, central bank research may stimulate research activities in the academic world, which, in turn, may improve the quality of economic analysis at the central bank.

Finally, it is also true that not all research output finds application in policy decisions. However, experience has shown that research topics with apparently marginal immediate practical benefit can quickly move to centre stage.

I hope that the reader of the *SNB Research Report* will find the report informative and the research activities of the Swiss National Bank interesting and useful.

July 2017



THOMAS J. JORDAN  
Chairman of the Governing Board





# 1

## Research at the SNB in 2016

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The SNB bases the analysis for its monetary and financial stability policy on cutting-edge theoretical and empirical economic knowledge. To this end, it conducts its own research and it works closely together with the research community – especially with researchers from other central banks. Besides providing understanding, research also supplies models, tools and analytical instruments for the preparation and implementation of the SNB’s monetary and macroprudential policy.

Research at the SNB is largely conducted on monetary and international macroeconomics as well as the economics of banking, other financial institutions, payment systems and financial markets. The SNB does not maintain a centralised research unit. Instead, research work is carried out in various units.

Researchers at the SNB are PhD economists who undertake research projects alongside the main tasks assigned to them within their unit. The SNB supports research activities and promotes the further development of the researchers’ skills.

This report presents the research activities at the SNB from 1 January to 31 December 2016.

### RESEARCH PUBLICATIONS

#### Articles in research journals

SNB researchers published 16 articles in research journals in 2016 (cf. table1).

Table 1

#### NUMBER OF ARTICLES IN RESEARCH JOURNALS

	2016	2015
Articles in research journals	16	25
Of which <i>SNB Economic Studies</i>	2	–

Most publications relate to macroeconomics and monetary economics as well as to international economics. Half of the papers relate to the Swiss economy or monetary policy.

Published research covers only part of the research undertaken by SNB staff. Some research provides direct input into decision making. These research results are often confidential, and are not published immediately, or in some cases, at all.

#### Working papers

Working papers reflect the number of research projects in the pipeline. The overall quantity of working papers and the number of SNB Working Papers increased in 2016 in comparison with the previous year (cf. table 2).

Table 2

#### NUMBER OF WORKING PAPERS

	2016	2015
Working papers	24	19
Of which SNB Working Papers	19	13
Of which other working papers	5	6

Comprehensive summaries of the articles in research journals can be found in chapter 2 of the report, comprehensive summaries of the working papers in chapter 3.

## FURTHER RESEARCH ACTIVITIES

An extensive exchange with other research communities, especially those of other central banks, is a requirement for research. Table 3 shows some key figures for 2016.

Table 3

### FURTHER RESEARCH ACTIVITIES

	2016	2015
SNB Research Seminars	45	36
Research visitors at the SNB	5	5
SNB Research Lectures	1	1

#### SNB Research Seminars

The SNB invites other researchers to present their research results at seminars. In 2016, 45 research seminars took place at the SNB.

#### Research visitors at the SNB

Some researchers visit the SNB for an extended period of time. They are expected to hold seminars, advise researchers, or even undertake common research projects with SNB researchers. Five researchers visited the SNB in 2016 (2015: 5):

- *Philippe Bacchetta*, Professor of Economics at HEC Lausanne (13 January–17 March 2016)
- *Simon Gilchrist*, Professor of Economics, Boston University (9–11 March 2016)
- *Mark Sniderman*, Adjunct Professor of Economics at the Weatherhead School of Management, Case Western Reserve University (30 May–11 June 2016)
- *Eric Swanson*, Professor of Economics at the University of California, Irvine (25–28 October 2016)
- *Massimiliano Marcellino*, Professor of Econometrics at the Bocconi University, Milan (13–15 June 2016)

## SNB Research Lectures

The SNB regularly invites experts to give research lectures on topical research areas. This is an opportunity for SNB economists to be updated on a particular topic on the frontier of research. One SNB Research Lecture took place in 2016:

- *Charles Engels*, University of Wisconsin-Madison (21–23 June and 30 June–1 July 2016). The topics were:
  - Recent developments in the theory of monetary policy in open economies
  - Recent developments in the international determination of consumer prices
  - Recent developments in the determination of nominal exchange rates

#### Research conferences

The SNB organises conferences, mostly in cooperation with other institutions, at the SNB or elsewhere. These conferences are an opportunity to present and discuss research papers as well as to review research in a particular area. In 2016, the SNB was a member of the programme committee of eight conferences, seven of which were organised in cooperation with other institutions and one was the annual SNB Research Conference. One conference was merely hosted by the SNB (cf. table 4).

Table 4

### CONFERENCES

	2016	2015
Conferences with the SNB	8	8
Conferences hosted by the SNB	1	2

Detailed information about these research activities can be found in chapter 3 of the report.





# 2

## Research publications in 2016

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This chapter contains comprehensive summaries of research publications by SNB employees in 2016.

### 2.1 OVERVIEW

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#### 2.1.1 ARTICLES IN RESEARCH JOURNALS

- Auer, Raphael A. and Raphael S. Schoenle. 2016. [Market structure and exchange rate pass-through](#). *Journal of International Economics* 98: 60–77. 14
- Baeriswyl, Romain and Camille Cornand. 2016. [The predominant role of signal precision in experimental beauty contests](#). *The B.E. Journal of Theoretical Economics* 16(1): 267–301. 15
- Bernhard, Severin. 2016. [A real-time GDP data set for Switzerland](#). *SNB Economic Studies* 2016-09. 16
- Brutti, Filippo and Philip U. Sauré. 2016. [Repatriation of debt in the euro crisis](#). *Journal of the European Economic Association* 14(1): 145–174. 16
- Coclite, Giuseppe M., Oleg Reichmann and Nils H. Risebro. 2016. [A convergent difference scheme for a class of partial integro-differential equations modeling pricing under uncertainty](#). *SIAM Journal on Numerical Analysis* 54(2): 588–605. 17
- Fuhrer, Lucas Marc, Basil Guggenheim and Silvio Schumacher. 2016. [Re-use of collateral in the repo market](#). *Journal of Money, Credit and Banking* 48(6): 1169–1193. 17
- Gerlach-Kristen, Petra, Robert N. McCauley and Kazuo Ueda. 2016. [Currency intervention and the global portfolio balance effect: Japanese lessons](#). *Journal of the Japanese and International Economies* 39: 1–16. 18
- Giesen, Sebastian and Rolf Scheufele. 2016. [Effects of incorrect specification on the finite sample properties of full and limited information estimators in DSGE models](#). *Journal of Macroeconomics* 48(C): 1–18. 18
- Giesen, Sebastian and Rolf Scheufele. 2016. [Impulse response analysis in a misspecified DSGE model: A comparison of full and limited information techniques](#). *Applied Economics Letters* 23(3): 162–166. 19
- Grise, Christian and Thomas Nitschka. 2016. [Exchange rate returns and external adjustment: Evidence from Switzerland](#). *Open Economies Review* 27(2): 317–339. 19

Hanslin Grossmann, Sandra, Sarah M. Lein and Caroline Schmidt. 2016. Exchange rate and foreign GDP elasticities of Swiss exports across sectors and destination countries. <i>Applied Economics</i> 48(57).	20
Hepenstrick, Christian. 2016. The sources and magnitudes of Switzerland's gains from trade. <i>Swiss Journal of Economics and Statistics</i> 152(1): 1–21.	20
Markov, Nikolay and Thomas Nitschka. 2016. Semi-parametric estimates of Taylor Rules for a small, open economy – Evidence from Switzerland. <i>German Economic Review</i> 17(4): 478–490.	21
Mirkov, Nikola and Gisle James Natvik. 2016. Announcements of interest rate forecasts: Do policymakers stick to them? <i>Journal of Money, Credit and Banking</i> 48(5): 901–920.	21
Nitschka, Thomas. 2016. Is there a too-big-to-fail discount in excess returns on German banks' stocks? <i>International Finance</i> 19(3): 292–310.	22
Ranaldo, Angelo and Enzo Rossi. 2016. Uniform-price auctions for Swiss government bonds: Origin and evolution. <i>SNB Economic Studies</i> 2016-10.	22
<b>2.1.2 WORKING PAPERS</b>	
Alvero, Adrien and Andreas M. Fischer. 2016. Exchange rate floor and central bank balance sheets: Simple spillover tests of the Swiss franc. Study Center Gerzensee Working Papers 16.07.	23
Auer, Raphael A. and Philip U. Sauré. 2016. Dynamic entry in vertically differentiated markets. CESifo Working Paper Series 6130.	24
Auer, Raphael A. and Cédric Tille. 2016. The banking sector and the Swiss financial account during the financial and European debt crises. SNB Working Papers 2016-05.	24
Baeriswyl, Romain, Camille Cornand and Bruno Ziliotto. 2016. Observing and shaping the market: The dilemma of central banks. GATE Working Papers 1620.	25
Bäurle, Gregor and Rolf Scheufele. 2016. Credit cycles and real activity – the Swiss case. SNB Working Papers 2016-13.	25
Bäurle, Gregor, Daniel Kaufmann, Sylvia Kaufmann and Rodney Strachan. 2016. Changing dynamics at the zero lower bound. SNB Working Papers 2016-16.	26
Bernhard, Severin and Till Ebner. 2016. Cross-border spillover effects of unconventional monetary policies on Swiss asset prices. SNB Working Papers 2016-09.	26
Bonadio, Barthélémy, Andreas M. Fischer and Philip U. Sauré. 2016. The speed of the exchange rate pass-through. CEPR Discussion Papers 11195.	27

Christensen, Jens and Signe Krogstrup. 2016. <b>A portfolio model of quantitative easing</b> . SNB Working Papers 2016-19.	27
Fleer, Rita, Barbara Rudolf and Mathias Zurlinden. 2016. <b>Price change dispersion and time-varying pass-through to consumer prices</b> . SNB Working Papers 2016-17.	28
Fuhrer, Lucas Marc, Benjamin Müller and Luzian Steiner. 2016. <b>The liquidity coverage ratio and security prices</b> . SNB Working Papers 2016-11.	28
Galli, Alain. 2016. <b>How reliable are cointegration-based estimates for wealth effects on consumption? Evidence from Switzerland</b> . SNB Working Papers 2016-03.	29
Galli, Alain. 2016. <b>Sticky consumption and wealth effects in Switzerland</b> . SNB Working Papers 2016-14.	29
Hanslin Grossmann, Sandra and Rolf Scheufele. 2016. <b>Foreign PMIs: A reliable indicator for exports?</b> SNB Working Papers 2016-01.	30
Hepenstrick, Christian and Massimiliano Marcellino. 2016. <b>Forecasting with large unbalanced datasets: The mixed-frequency three-pass regression filter</b> . SNB Working Papers 2016-04.	30
Jäggi, Adrian, Martin Schlegel and Attilio Zanetti. 2016. <b>Macroeconomic surprises, market environment and safe-haven currencies</b> . SNB Working Papers 2016-15.	31
Krogstrup, Signe and Cédric Tille. 2016. <b>On the roles of different foreign currencies in European bank lending</b> . SNB Working Papers 2016-07.	31
Meuli, Jonas Gabriel, Thomas Nellen and Thomas Nitschka. 2016. <b>Securitisation, loan growth and bank funding: the Swiss experience since 1932</b> . SNB Working Papers 2016-18.	32
Mirkov, Nikola, Igor Pozdeev and Paul Söderlind. 2016. <b>Toward removal of the Swiss franc cap: Market expectations and verbal interventions</b> . SNB Working Papers 2016-10.	32
Pirschel, Inske. 2016. <b>Forecasting euro area recessions in real-time</b> . Kiel Working Papers 2020.	33
Schumacher, Silvio. 2016. <b>Networks and lending conditions: Empirical evidence from the Swiss franc money markets</b> . SNB Working Papers 2016-12.	33
Towbin, Pascal and Sebastian Weber. 2016. <b>Price expectations and the US housing boom</b> . SNB Working Papers 2016-06.	34
Yesin, Pinar. 2016. <b>Capital flows and the Swiss franc</b> . SNB Working Papers 2016-08.	34
Yesin, Pinar. 2016. <b>Exchange rate predictability and state-of-the-art models</b> . SNB Working Papers 2016-02.	35

## 2.2 ARTICLES IN RESEARCH JOURNALS

This section contains comprehensive summaries of articles by SNB employees published in research journals in 2016.

Each summary contains the affiliation of the author(s), an abstract, keywords and the JEL classification.

### 2.2.1 MARKET STRUCTURE AND EXCHANGE RATE PASS-THROUGH

#### REFERENCE

Auer, Raphael A. and Raphael S. Schoenle. 2016. [Market structure and exchange rate pass-through](#). *Journal of International Economics* 98: 60–77.

#### AFFILIATION OF THE AUTHOR(S)

Raphael A. Auer:

SNB, International Policy Analysis (no longer at the SNB)

Raphael S. Schoenle:

Brandeis University

#### ABSTRACT

We study firm-level pricing behavior through the lens of exchange rate pass-through and provide new evidence on how firm-level market shares and price complementarities affect pass-through decisions. Using U.S. import price micro data, we identify two facts: First, exactly the firms that react the most with their prices to changes in their own costs are also the ones that react the least to changing prices of competing importers. Second, the response of import prices to exchange rate changes is U-shaped in our proxy for market share while it is hump-shaped in response to the prices of competing importers. We show that both facts are consistent with a model based on Dornbusch (1987) that generates variable markups through a nested-CES demand system. Finally, based on the model, we find that direct cost pass-through and price complementarities among importers play approximately equally important roles in determining pass-through but also partly offset each other. This suggests that equilibrium feedback effects in import pricing are large. Omission of either channel in an empirical analysis results in a failure to explain how market structure affects price-setting in industry equilibrium.

#### KEYWORDS

price setting, exchange rate pass-through, U.S. import prices, market structure, price complementarities

#### JEL CLASSIFICATION

E31



**WORKING PAPER VERSION(S)**

Auer, Raphael A. and Raphael S. Schoenle. 2012. [Market structure and exchange rate pass-through](#). SNB Working Papers 2012-14.

Auer, Raphael A. and Raphael S. Schoenle. 2012. [Market structure and exchange rate pass-through](#). Federal Reserve Bank of Dallas, GMPI Working Papers 130.

Auer, Raphael A. and Raphael S. Schoenle. 2015. [Market structure and exchange rate pass-through](#). CEPR Discussion Papers 10585.

Schoenle, Raphael S. and Raphael A. Auer. 2013. [Market structure and exchange rate pass-through](#). Brandeis University, Department of Economics and International Business School Working Papers 62.

Schoenle, Raphael S. and Raphael A. Auer. 2012. [Market structure and pass-through](#). Society for Economic Dynamics 2012 Meeting Papers 61.

**2.2.2 THE PREDOMINANT ROLE OF SIGNAL PRECISION IN EXPERIMENTAL BEAUTY CONTESTS****REFERENCE**

Baeriswyl, Romain and Camille Cornand. 2016. [The predominant role of signal precision in experimental beauty contests](#). *The B.E. Journal of Theoretical Economics* 16(1): 267–301.

**AFFILIATION OF THE AUTHOR(S)**

Romain Baeriswyl:  
SNB, Monetary Policy Analysis  
Camille Cornand:  
CNRS, GATE

**ABSTRACT**

The weight assigned to public information in Keynesian beauty contests depends on both the precision of signals and the degree of strategic complementarities. This experimental study shows that the response of subjects to changes in signal precision and the degree of strategic complementarities is qualitatively consistent with theoretical predictions, though quantitatively weaker. The weaker response of subjects to changes in the precision of signals, however, mainly drives the weight observed in the experiment, qualifying the role of strategic complementarities and overreaction in experimental beauty contests.

**KEYWORDS**

heterogeneous information, beauty contest, experiment, public information

**JEL CLASSIFICATION**

D82

**WORKING PAPER VERSION(S)**

Baeriswyl, Romain and Camille Cornand. 2014. [The predominant role of signal precision in experimental beauty contests](#). CNRS GATE Working Papers 1441.

### 2.2.3 A REAL-TIME GDP DATA SET FOR SWITZERLAND

#### REFERENCE

Bernhard, Severin. 2016. [A real-time GDP data set for Switzerland](#). *SNB Economic Studies* 2016-09.

#### AFFILIATION OF THE AUTHOR(S)

Severin Bernhard:  
SNB, Foreign Exchange and Gold

#### ABSTRACT

This economic study presents and analyses newly collected real-time data for Swiss GDP. It extends existing data sets by covering annual and quarterly aggregate GDP values for a longer sample, with vintages starting in 1971 (annual) and 1983 (quarterly). The analysis comprises a graphical and statistical description of quarterly GDP releases and tests for unbiasedness and efficiency of the revisions. Overall, revisions can be large and substantial, and early releases tend to underestimate GDP growth. Yet statistical tests on unbiasedness provide only limited evidence for a statistically significant bias. Additional tests point at some degree of informational inefficiency for selected revisions, and show that absolute revisions neither improve nor deteriorate over time. Most findings are consistent with existing literature. However, a closer look at revisions during the mid-nineties, a period characterised by large revisions, shows that annual and benchmark revisions can affect quarterly revisions considerably (and thus the results above). In addition, this closer look illustrates the difficulties with interpreting the recent business cycle in the presence of revisions.

#### KEYWORDS

GDP revisions, national accounts, monetary policy

#### JEL CLASSIFICATION

E32

### 2.2.4 REPATRIATION OF DEBT IN THE EURO CRISIS

#### REFERENCE

Brutti, Filippo and Philip U. Sauré. 2016. [Repatriation of debt in the euro crisis](#). *Journal of the European Economic Association* 14(1): 145–174.

#### AFFILIATION OF THE AUTHOR(S)

Filippo Brutti:  
UBS  
Philip U. Sauré:  
SNB, International Policy Analysis

#### ABSTRACT

With the beginning of the euro crisis, the long-standing trend of European financial integration reversed. Investors unwound cross-border positions of debt obligations and increased holdings of locally issued debt. In other words, debt obligations were repatriated. We use data on bank portfolios to document three new empirical regularities of the financial disintegration: (i) repatriation affected mainly debt of crisis countries; (ii) repatriation affected mainly public debt; (iii) the public debt of crisis countries that was not repatriated was reallocated to large and politically influential countries within the euro area. We read these results in light of standard theories of cross-border portfolio allocation and argue that the sum of these patterns constitutes evidence for the secondary market theory of public debt.

#### KEYWORDS

sovereign risk, portfolio allocation, repatriation, secondary markets

#### JEL CLASSIFICATION

F34

#### WORKING PAPER VERSION(S)

Brutti, Filippo and Philip U. Sauré. 2014. [Repatriation of debt in the euro crisis: Evidence for the secondary market theory](#). SNB Working Papers 2014-03.

## 2.2.5 A CONVERGENT DIFFERENCE SCHEME FOR A CLASS OF PARTIAL INTEGRO-DIFFERENTIAL EQUATIONS MODELING PRICING UNDER UNCERTAINTY

### REFERENCE

Coclite, Giuseppe M., Oleg Reichmann and Nils H. Risebro. 2016. [A convergent difference scheme for a class of partial integro-differential equations modeling pricing under uncertainty](#). *SIAM Journal on Numerical Analysis* 54(2): 588–605.

### AFFILIATION OF THE AUTHOR(S)

Giuseppe M. Coclite:  
University of Bari  
Oleg Reichmann:  
SNB, Banking System  
Nils H. Risebro:  
University of Oslo

### ABSTRACT

In this paper we present a finite difference scheme to approximate viscosity solutions of a class of partial integro-differential equations describing pricing under model uncertainty. We establish that the approximations converge to the unique viscosity solution as the discretization parameter tends to zero, and give an asymptotic rate of the convergence. We also present several numerical examples showing this convergence.

### KEYWORDS

fractional diffusion, viscosity solutions

### JEL CLASSIFICATION

C02

## 2.2.6 RE-USE OF COLLATERAL IN THE REPO MARKET

### REFERENCE

Fuhrer, Lucas Marc, Basil Guggenheim and Silvio Schumacher. 2016. [Re-use of collateral in the repo market](#). *Journal of Money, Credit and Banking* 48(6): 1169–1193.

### AFFILIATION OF THE AUTHOR(S)

Lucas Marc Fuhrer:  
SNB, Money Market  
Basil Guggenheim:  
SNB, Money Market  
Silvio Schumacher:  
SNB, Money Market (now: SNB, Foreign Exchange and Gold)

### ABSTRACT

This paper introduces a methodology to estimate the re-use of collateral based on actual transaction data. With a comprehensive dataset from the Swiss franc repo market we are able to provide the first systematic empirical study on the re-use of collateral. We find that re-use was most popular prior to the financial crisis, when roughly 10% of the outstanding interbank volume was based on re-used collateral. Furthermore, we show that re-use increases with the scarcity of collateral. By giving an estimate of collateral re-use and explaining its drivers, the paper contributes to the ongoing debate on collateral availability.

### KEYWORDS

re-use of collateral, repo, money market, financial stability, Switzerland

### JEL CLASSIFICATION

D47

### WORKING PAPER VERSION(S)

Fuhrer, Lucas Marc, Basil Guggenheim and Silvio Schumacher. 2015. [Re-use of collateral in the repo market](#). SNB Working Papers 2015-02.

## 2.2.7 CURRENCY INTERVENTION AND THE GLOBAL PORTFOLIO BALANCE EFFECT: JAPANESE LESSONS

### REFERENCE

Gerlach-Kristen, Petra, Robert N. McCauley and Kazuo Ueda. 2016. [Currency intervention and the global portfolio balance effect: Japanese lessons](#). *Journal of the Japanese and International Economies* 39: 1–16.

### AFFILIATION OF THE AUTHOR(S)

Petra Gerlach-Kristen:  
SNB, Advisor Department I (now: SNB, Monetary Policy Analysis)  
Robert N. McCauley:  
Bank for International Settlements  
Kazuo Ueda:  
University of Tokyo

### ABSTRACT

This paper extends the analysis of Bernanke et al. (2004) to show that the official Japanese purchases of foreign exchange in 2003–04 seem to have lowered long-term interest rates not only in the United States, but in a wide range of countries, including Japan. It seems that this decline was triggered by the investment of the intervention proceeds in US bonds and that global portfolio rebalancing spread the resulting decline in US dollar yields to bond markets in other currencies, thus easing global monetary conditions. We also show that the global portfolio balance effect is detectable in the response of yields to large Japanese intervention in data before and after 2003/04, though the effect is weaker. While our findings contribute to a growing body of work that points to common responses across bond markets to official portfolio shifts in the form of large-scale bond purchases (“quantitative easing”), our analysis has the advantage of focusing on a pure portfolio shock.

### KEYWORDS

intervention, portfolio balance effect, Japan, bond market

### JEL CLASSIFICATION

G12

## 2.2.8 EFFECTS OF INCORRECT SPECIFICATION ON THE FINITE SAMPLE PROPERTIES OF FULL AND LIMITED INFORMATION ESTIMATORS IN DSGE MODELS

### REFERENCE

Giesen, Sebastian and Rolf Scheufole. 2016. [Effects of incorrect specification on the finite sample properties of full and limited information estimators in DSGE models](#). *Journal of Macroeconomics* 48(C): 1–18.

### AFFILIATION OF THE AUTHOR(S)

Sebastian Giesen:  
Deutsche Bundesbank  
Rolf Scheufole:  
SNB, Economic Analysis (Switzerland)

### ABSTRACT

In this paper we analyze the small sample properties of full information and limited information estimators in a potentially misspecified DSGE model. Therefore, we conduct a simulation study based on a standard New Keynesian model including price and wage rigidities. We then study the effects of omitted variable problems on the structural parameter estimates of the model. We find that FIML performs superior when the model is correctly specified. In cases where some of the model characteristics are omitted, the performance of FIML is highly unreliable, whereas GMM estimates remain approximately unbiased and significance tests are mostly reliable.

### KEYWORDS

FIML, (CU)GMM, finite sample bias, misspecification, Monte Carlo, DSGE

### JEL CLASSIFICATION

C51

### WORKING PAPER VERSION(S)

Giesen, Sebastian and Rolf Scheufole. 2013. [Effects of incorrect specification on the finite sample properties of full and limited information estimators in DSGE models](#). IWH Discussion Papers 8/2013.

## 2.2.9 IMPULSE RESPONSE ANALYSIS IN A MISSPECIFIED DSGE MODEL: A COMPARISON OF FULL AND LIMITED INFORMATION TECHNIQUES

### REFERENCE

Giesen, Sebastian and Rolf Scheufele. 2016. [Impulse response analysis in a misspecified DSGE model: A comparison of full and limited information techniques](#). *Applied Economics Letters* 23(3): 162–166.

### AFFILIATION OF THE AUTHOR(S)

Sebastian Giesen:  
Deutsche Bundesbank  
Rolf Scheufele:  
SNB, Economic Analysis (Switzerland)

### ABSTRACT

In this article, we examine the effect of estimation biases – introduced by model misspecification – on the impulse responses analysis for dynamic stochastic general equilibrium (DSGE) models. Thereby, we use full and limited information estimators to estimate a misspecified DSGE model and calculate impulse response functions (IRFs) based on the estimated structural parameters. It turns out that IRFs based on full information techniques can be unreliable under misspecification.

### KEYWORDS

impulse response analysis, FIML, GMM, misspecification, Monte Carlo, DSGE

### JEL CLASSIFICATION

C51

## 2.2.10 EXCHANGE RATE RETURNS AND EXTERNAL ADJUSTMENT: EVIDENCE FROM SWITZERLAND

### REFERENCE

Grisse, Christian and Thomas Nitschka. 2016. [Exchange rate returns and external adjustment: Evidence from Switzerland](#). *Open Economies Review* 27(2): 317–339.

### AFFILIATION OF THE AUTHOR(S)

Christian Grisse:  
SNB, Monetary Policy Analysis  
Thomas Nitschka:  
SNB, Monetary Policy Analysis

### ABSTRACT

This paper studies the predictive power of external imbalances for exchange rate returns. We focus on Switzerland, a very open economy where exchange rate movements have a strong effect on external imbalances through valuation effects and trade flows. Using a simple modification of the Gourinchas and Rey (2007) approach to make their approximation applicable to Switzerland, we find that measures of deviations from trends in Swiss net foreign assets and net exports help to forecast Swiss franc nominal effective exchange rate movements, both in and out of sample.

### KEYWORDS

external imbalances, external adjustment, exchange rates, Swiss franc

### JEL CLASSIFICATION

F31

### WORKING PAPER VERSION(S)

Grisse, Christian and Thomas Nitschka. 2014. [Exchange rate returns and external adjustment: Evidence from Switzerland](#). SNB Working Papers 2014-12.

## 2.2.11 EXCHANGE RATE AND FOREIGN GDP ELASTICITIES OF SWISS EXPORTS ACROSS SECTORS AND DESTINATION COUNTRIES

### REFERENCE

Hanslin Grossmann, Sandra, Sarah M. Lein and Caroline Schmidt. 2016. [Exchange rate and foreign GDP elasticities of Swiss exports across sectors and destination countries](#). *Applied Economics* 48(57).

### AFFILIATION OF THE AUTHOR(S)

Sandra Hanslin Grossmann:

SNB, Economic Analysis (Switzerland)

Sarah M. Lein:

University of Basel

Caroline Schmidt:

SNB, Inflation Forecasting

### ABSTRACT

This article uses a detailed breakdown of Swiss trade flows to identify how the impact of the two main determinants of Switzerland's exports – foreign demand and the real exchange rate – varies across sectors and export destinations. Our main findings are that (i) both foreign demand and exchange rate elasticities vary substantially across both export sectors and export destinations. (ii) Foreign demand trends are more important for structural considerations than the exchange rate. This is due to the fact that exports of the two largest export sectors are relatively sensitive to long-run foreign demand developments while they are relatively insensitive to changes in the exchange rate. (iii) The sectoral structure of Switzerland's exports has shifted towards goods that have a lower short-run demand elasticity and a higher long-run demand elasticity. Goods exports are thus less influenced by business cycle fluctuations while they benefit more from long-term growth trends. (iv) The export share of sectors with a relatively low exchange rate elasticity has increased. However, this result is mainly driven by the strong rise in exports of chemicals and pharmaceuticals as well as precision instruments and watches, which are also the two important sectors responsible for the Swiss trade surplus.

### KEYWORDS

sectoral exports, Switzerland, foreign demand elasticities, exchange rate elasticities

### JEL CLASSIFICATION

F14

## 2.2.12 THE SOURCES AND MAGNITUDES OF SWITZERLAND'S GAINS FROM TRADE

### REFERENCE

Hepenstrick, Christian. 2016. [The sources and magnitudes of Switzerland's gains from trade](#). *Swiss Journal of Economics and Statistics* 152(1): 1–21.

### AFFILIATION OF THE AUTHOR(S)

Christian Hepenstrick:

SNB, Economic Analysis (International)

### ABSTRACT

This paper uses the modern workhorse model of quantitative trade theory (Eaton and Kortum, 2002) as a measurement tool to quantify Switzerland's gains from trade. I find that individual trading partners matter surprisingly little for Switzerland's welfare because of reallocation effects: if trade between Switzerland and some partner country is inhibited, other supplier countries step into the breach so that the losses are limited and typically amount to less than 1%. The conclusions are different if one considers groups of countries such as for example the EU: participating in a multilateral 25% trade cost reduction increases Swiss welfare by 11% relative to the status quo. However, it must also be noted that in the case of non-participation, the actual welfare losses relative to the status quo are modest with less than 1%.

### KEYWORDS

gains from trade, Switzerland, development accounting

### JEL CLASSIFICATION

F14

### 2.2.13 SEMI-PARAMETRIC ESTIMATES OF TAYLOR RULES FOR A SMALL, OPEN ECONOMY – EVIDENCE FROM SWITZERLAND

#### REFERENCE

Markov, Nikolay and Thomas Nitschka. 2016. [Semi-parametric estimates of Taylor Rules for a small, open economy – Evidence from Switzerland](#). *German Economic Review* 17(4): 478–490.

#### AFFILIATION OF THE AUTHOR(S)

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SNB, Monetary Policy Analysis

#### ABSTRACT

This paper estimates the policy reaction function of the Swiss National Bank (SNB) using real-time internal inflation forecasts and output gap estimates from 2000 to 2012. We analyze potential nonlinearities of policy rate responses to economic fundamentals using a novel semi-parametric approach. We find a linear response of the SNB's policy rate to inflation forecasts but a strong non-linear response of the policy rate to the output gap and exchange rate changes. This finding suggests that the SNB reacts to extreme movements of these variables if they become a concern for price stability and economic activity.

#### KEYWORDS

Taylor rules, real-time data, nonlinearity, semi-parametric-modeling

#### JEL CLASSIFICATION

E52

#### WORKING PAPER VERSION(S)

Markov, Nikolay and Thomas Nitschka. 2013. [Estimating Taylor rules for Switzerland: Evidence from 2000 to 2012](#). SNB Working Papers 2013-08.

### 2.2.14 ANNOUNCEMENTS OF INTEREST RATE FORECASTS: DO POLICYMAKERS STICK TO THEM?

#### REFERENCE

Mirkov, Nikola and Gisle James Natvik. 2016. [Announcements of interest rate forecasts: Do policymakers stick to them?](#) *Journal of Money, Credit and Banking* 48(5): 901–920.

#### AFFILIATION OF THE AUTHOR(S)

Nikola Mirkov:  
SNB, Economic Analysis (International)  
Gisle James Natvik:  
Norges Bank

#### ABSTRACT

If central banks value the ex-post accuracy of their published forecasts, previously announced interest rate paths might influence the current policy rate. We explore if “forecast adherence” has affected monetary policy in New Zealand and Norway, where central banks have published their interest rate forecasts the longest. We derive and estimate policy rules with separate weights on past interest rate forecasts, and find that they have explanatory power for current policy decisions, over and above their correlation with other conventional interest rate rule arguments.

#### KEYWORDS

interest rates, forecasts, Taylor rule, adherence

#### JEL CLASSIFICATION

E52

#### WORKING PAPER VERSION(S)

Mirkov, Nikola and Gisle James Natvik. 2013. [Announcements of interest rate forecasts: Do policymakers stick to them?](#) Norges Bank Working Papers 2013/11.

Mirkov, Nikola and Gisle James Natvik. 2013. [Announcements of interest rate forecasts: Do policymakers stick to them?](#) University of St. Gallen Working Papers on Finance 2013/3.

## 2.2.15 IS THERE A TOO-BIG-TO-FAIL DISCOUNT IN EXCESS RETURNS ON GERMAN BANKS' STOCKS?

### REFERENCE

Nitschka, Thomas. 2016. [Is there a too-big-to-fail discount in excess returns on German banks' stocks?](#) *International Finance* 19(3): 292–310.

### AFFILIATION OF THE AUTHOR(S)

Thomas Nitschka:  
SNB, Monetary Policy Analysis

### ABSTRACT

Since the global financial crisis, German and other European banks' stocks have underperformed compared with the overall EMU stock market. Does this observation reflect the explicit state guarantee for too-big-to-fail banks? In that case, investors have an incentive to hold stocks of systemically important banks because they provide insurance against disaster risk through the state guarantee. Indeed, recent studies reveal a too-big-to-fail discount in large U.S. banks' stock returns. Does this finding pertain to German (representing continental European) banks too? The main results of this paper suggest that it does. Risk-adjusted returns on a German bank stock index were negative in the period from 1973 to 2014. The key driver of this finding is an unanticipated, adverse shock to the German banking sector at the beginning of the global financial crisis. This shock increased the probability of a bank default and thus the insurance value of government support.

### KEYWORDS

banking sector, multifactor models, risk factors, risk premia

### JEL CLASSIFICATION

G12

### WORKING PAPER VERSION(S)

Nitschka, Thomas. 2015. [Is there a too-big-to-fail discount in excess returns on German banks' stocks?](#) SNB Working Papers 2015-08.

## 2.2.16 UNIFORM-PRICE AUCTIONS FOR SWISS GOVERNMENT BONDS: ORIGIN AND EVOLUTION

### REFERENCE

Ranaldo, Angelo and Enzo Rossi. 2016. [Uniform-price auctions for Swiss government bonds: Origin and evolution.](#) *SNB Economic Studies* 2016-10.

### AFFILIATION OF THE AUTHOR(S)

Angelo Ranaldo:  
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Enzo Rossi:  
SNB, Research Coordination

### ABSTRACT

The Swiss Treasury has used the sealed-bid, uniform-price auction format for allocating government bonds since 1980. In this study, we examine the authorities' motivation for choosing the uniform-price auction. In addition, we describe how the institutional set-up evolved over time. It includes bidding requirements, class of bidders, pre-auction information, the bidding process, the determination of the cut-off price and the release of post-auction information. Finally, we provide the details of each of the 356 auctions that were held until and including 2014.

### KEYWORDS

government bonds, treasury auctions, uniform-price auction

### JEL CLASSIFICATION

D44



## 2.3 WORKING PAPERS

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This section contains comprehensive summaries of working papers written by SNB employees in 2016.

Each summary contains the affiliation of the author(s), an abstract, keywords and the JEL classification.

### 2.3.1 EXCHANGE RATE FLOOR AND CENTRAL BANK BALANCE SHEETS: SIMPLE SPILLOVER TESTS OF THE SWISS FRANC

#### REFERENCE

Alvero, Adrien and Andreas M. Fischer. 2016. [Exchange rate floor and central bank balance sheets: Simple spillover tests of the Swiss franc](#). Study Center Gerzensee Working Papers 16.07.

#### AFFILIATION OF THE AUTHOR(S)

Adrien Alvero:

Columbia Business School

Andreas M. Fischer:

SNB, Monetary Policy Analysis

#### ABSTRACT

This paper examines spillover and spillback effects of unconventional monetary policies conducted by the European Central Bank (ECB) and Swiss National Bank (SNB) on the exchange rate's distribution. The empirical setup examines the price response of EURCHF risk reversal to a change in ECB and SNB balance sheets, with a distinction for the period of the minimum exchange rate (floor). The analysis finds only weak evidence of spillover effects from the ECB, while the spillback effect from the SNB balance sheet is robust during the floor period.

#### KEYWORDS

central bank balance sheets, spillovers and spillbacks, risk reversals, OLS regression

#### JEL CLASSIFICATION

E52

### 2.3.2 DYNAMIC ENTRY IN VERTICALLY DIFFERENTIATED MARKETS

#### REFERENCE

Auer, Raphael A. and Philip U. Sauré. 2016. *Dynamic entry in vertically differentiated markets*. CESifo Working Paper Series 6130.

#### AFFILIATION OF THE AUTHOR(S)

Raphael A. Auer:  
SNB, International Policy Analysis (no longer at the SNB)  
Philip U. Sauré:  
SNB, International Policy Analysis

#### ABSTRACT

We develop a model of vertical innovation in which firms incur a market entry cost and choose a unique level of quality. Once established, firms compete for market shares, selling to consumers with heterogeneous tastes for quality. The equilibrium of the pricing game exists and is unique within our setup. Exogenous productivity growth induces firms to enter the market sequentially at the top end of the quality spectrum. A central feature of the model is that optimization problems of consecutive entrants are self-similar so that new firms enter in constant time-intervals and choose qualities that are a constant fraction higher than incumbent qualities. The asymmetries of quality choice, which inevitably arise because the quality spectrum has top and a bottom, is thus overcome by sequential entry. Our main contribution lies in handling these asymmetries.

#### KEYWORDS

vertical differentiation, product quality, non-homogeneous preferences, natural monopoly, endogenous growth, quality ladders

#### JEL CLASSIFICATION

D43

### 2.3.3 THE BANKING SECTOR AND THE SWISS FINANCIAL ACCOUNT DURING THE FINANCIAL AND EUROPEAN DEBT CRISES

#### REFERENCE

Auer, Raphael A. and Cédric Tille. 2016. *The banking sector and the Swiss financial account during the financial and European debt crises*. SNB Working Papers 2016-05.

#### AFFILIATION OF THE AUTHOR(S)

Raphael A. Auer:  
SNB, International Policy Analysis (no longer at the SNB)  
Cédric Tille:  
The Graduate Institute of International and Development Studies

#### ABSTRACT

The US financial crisis and the later eurozone crisis have substantially impacted capital flows into and out of financial centers like Switzerland. We focus on the pattern of capital flows involving the Swiss banking industry. We first rely on balance-of-payment statistics and show that net banking inflows rose during the acute phases of the crises, albeit with a contrasting pattern. In the wake of the collapse of Lehman Brothers, net inflows were driven by a substantial retrenchment into the domestic market by Swiss banks. By contrast, net inflows from mid-2011 to mid-2012 were driven by large flows into Switzerland by foreign banks. We then use more detailed data from Swiss banking statistics which allow us to differentiate the situation across different banks and currencies. We show that, during the US financial crisis, the bank flows cycle was driven strongly by exposures in US dollars, and to a large extent by Swiss-owned banks. During the eurozone crisis, by contrast, the flight to the Swiss franc and move away from the euro was also driven by banks that are located in Switzerland, yet are foreign-owned. In addition, while the demand for the Swiss franc was driven by both foreign and domestic customers from mid-2011 to early 2013, domestic demand took a prominent role thereafter.

#### KEYWORDS

capital flows, safe haven, Switzerland, financial globalization, international banking.

#### JEL CLASSIFICATION

E51

### 2.3.4 OBSERVING AND SHAPING THE MARKET: THE DILEMMA OF CENTRAL BANKS

#### REFERENCE

Baeriswyl, Romain, Camille Cornand and Bruno Ziliotto. 2016. *Observing and shaping the market: The dilemma of central banks*. GATE Working Papers 1620.

#### AFFILIATION OF THE AUTHOR(S)

Romain Baeriswyl:  
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CNRS, GATE  
Bruno Ziliotto:  
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#### ABSTRACT

While the central bank observes the market activity to assess economic fundamentals, it shapes the market outcome through its policy interventions. The more the central bank influences the market, the more it spoils the informational content of economic aggregates. How should the central bank act and communicate when it derives its information from observing the market? This paper analyses the optimal central bank's action and disclosure under endogenous central bank's information for three operational frameworks: pure communication, action and communication, and signaling action. When the central bank takes an action, it would be optimal for the central bank to be fully opaque to prevent its disclosure from deteriorating the information quality of market outcomes. However, in the realistic case where central bank's action is observable, it may be optimal to refrain from implementing any action.

#### KEYWORDS

heterogeneous information, public information

#### JEL CLASSIFICATION

D82

### 2.3.5 CREDIT CYCLES AND REAL ACTIVITY – THE SWISS CASE

#### REFERENCE

Bäurle, Gregor and Rolf Scheuefe. 2016. *Credit cycles and real activity – the Swiss case*. SNB Working Papers 2016-13.

#### AFFILIATION OF THE AUTHOR(S)

Gregor Bäurle:  
SNB, Economic Analysis (Switzerland)  
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#### ABSTRACT

The global Great Recession has sparked renewed interest in the relationships between financial conditions and real activity. This paper considers the Swiss experience, studying the impact of credit market conditions and housing prices on real activity over the last three decades through the lens of a medium-scale structural Bayesian vector autoregressive model (BVAR). From a methodological point of view, the analysis is challenging for two reasons. First, we must cope with a large number of variables which leads to a high-dimensional parameter space in our model. Second, the identification of economically interpretable shocks is complicated by the interaction among many different relevant factors. As to the first challenge, we use Bayesian shrinkage techniques to make the estimation of a large number of parameters tractable. Specifically, we combine a Minnesota prior with information from training observations to form an informative prior for our parameter space. The second challenge, the identification of shocks, is overcome by combining zero and sign restrictions to narrow the plausible range of responses of observed variables to the shocks. Our empirical analysis indicates that while credit demand and, in particular, credit supply shocks explain a large fraction of housing price and credit fluctuation, they have a limited impact on real activity.

#### KEYWORDS

credit supply and demand, housing prices, SVARs, Bayesian shrinkage

#### JEL CLASSIFICATION

E51

### 2.3.6 CHANGING DYNAMICS AT THE ZERO LOWER BOUND

#### REFERENCE

Bäurle, Gregor, Daniel Kaufmann, Sylvia Kaufmann and Rodney Strachan. 2016. [Changing dynamics at the zero lower bound](#). SNB Working Papers 2016-16.

#### AFFILIATION OF THE AUTHOR(S)

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#### ABSTRACT

The interaction of macroeconomic variables may change as the nominal short-term interest rates approach zero. In this paper, we propose an empirical model that captures these changing dynamics with a time-varying parameter vector autoregressive process. State-dependent parameters are determined by a latent state indicator. This state indicator follows a distribution with time-varying probabilities affected by the lagged interest rate. As the interest rate enters the critical zero lower bound (ZLB) region, the dynamics between the variables and the effect of shocks change. We estimate the model with Bayesian methods and explicitly consider that the interest rate may be constrained in the ZLB region. We provide an estimate of the latent rate, i.e., a lower interest rate than the observed level, which is state- and model-consistent. The endogenous specification of the state indicator permits dynamic forecasts of the state and system variables. In the application of the model to the Swiss data, we evaluate state-dependent impulse responses to a risk premium shock that is identified with sign restrictions. Additionally, we discuss scenario-based forecasts and evaluate the probability of the system exiting the ZLB region that is only based on the inherent dynamics.

#### KEYWORDS

regime switching, time-varying probability, constrained variables

#### JEL CLASSIFICATION

E52

#### OTHER WORKING PAPER VERSION(S)

Bäurle, Gregor, Daniel Kaufmann, Sylvia Kaufmann and Rodney Strachan. 2016. [Changing dynamics at the zero lower bound](#). Study Center Gerzensee Working Papers 16.02.

### 2.3.7 CROSS-BORDER SPILLOVER EFFECTS OF UNCONVENTIONAL MONETARY POLICIES ON SWISS ASSET PRICES

#### REFERENCE

Bernhard, Severin and Till Ebner. 2016. [Cross-border spillover effects of unconventional monetary policies on Swiss asset prices](#). SNB Working Papers 2016-09.

#### AFFILIATION OF THE AUTHOR(S)

Severin Bernhard:

SNB, Foreign Exchange and Gold

Till Ebner:

SNB, Advisor Department II

#### ABSTRACT

Unconventional monetary policies (UMPs) by the Federal Reserve, the European Central Bank, the Bank of England and the Bank of Japan exert important spillover effects on asset prices in Switzerland if market anticipation of UMP announcements is properly accounted for. Using a broad event set and a long-term bond futures-based measure as a proxy for market anticipation of the announcements, we show that the unexpected part of those UMPs boost Swiss government and corporate bond prices, induce the CHF to appreciate, and dampen Swiss equity prices. Four extensions provide additional insights: First, the estimated effects are strongest for announcements by the ECB. Second, the impact on government bonds is largest for bonds with residual maturities of 7–10 years. Third, the impact of foreign UMP shocks on exchange rates and Swiss bond yields is less pronounced after the introduction of the EURCHF-floor by the Swiss National Bank on September 6, 2011. Fourth, the sign of spillover effects differs for positive and negative UMP surprises, but their strength does not. Our results hint at an important role played by both international portfolio re-balancing channels and international signalling channels in the transmission of foreign monetary policy shocks to Swiss asset prices.

#### KEYWORDS

unconventional monetary policy, spillovers announcement effects, Swiss asset prices

#### JEL CLASSIFICATION

E52

### 2.3.8 THE SPEED OF THE EXCHANGE RATE PASS-THROUGH

#### REFERENCE

Bonadio, Barthélémy, Andreas M. Fischer and Philip U. Sauré. 2016. [The speed of the exchange rate pass-through](#). CEPR Discussion Papers 11195.

#### AFFILIATION OF THE AUTHOR(S)

Barthélémy Bonadio:  
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Andreas M. Fischer:  
SNB, Monetary Policy Analysis  
Philip U. Sauré:  
SNB, International Policy Analysis

#### ABSTRACT

This paper analyzes the speed of the exchange rate pass-through into importer and exporter unit values for a large, unanticipated, and unusually ‘clean’ exchange rate shock. Our shock originates from the Swiss National Bank’s decision to lift the minimum exchange rate policy of one euro against 1.2 Swiss francs on January 15, 2015.

This policy action resulted in a permanent appreciation of the Swiss franc by more than 11% against the euro.

We analyze the response of unit values to this exchange rate shock at the daily frequency for different invoicing currencies using the universe of Switzerland’s transactions-level trade data. The main finding is that the speed of the exchange rate pass-through is fast: it starts on the second working day after the exchange rate shock and reaches the medium-run pass-through after eight working days on average. Moreover, we decompose the pass-through by invoicing currencies and find strong evidence that underlying price adjustments occurred within a similar time frame. Our observations suggest that nominal rigidities play only a minor role in the face of large exchange rate shocks.

#### KEYWORDS

daily exchange rate pass-through, large exchange rate shock, speed

#### JEL CLASSIFICATION

F14

### 2.3.9 A PORTFOLIO MODEL OF QUANTITATIVE EASING

#### REFERENCE

Christensen, Jens and Signe Krogstrup. 2016. [A portfolio model of quantitative easing](#). SNB Working Papers 2016-19.

#### AFFILIATION OF THE AUTHOR(S)

Jens Christensen:  
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Signe Krogstrup:  
SNB, Monetary Policy Analysis (no longer at the SNB)

#### ABSTRACT

This paper presents a portfolio model of asset price effects arising from central bank large-scale asset purchases, commonly known as quantitative easing (QE). Two financial frictions – segmentation of the market for central bank reserves and imperfect asset substitutability – give rise to two distinct portfolio effects. One derives from the reduced supply of the purchased assets. The other runs through banks’ portfolio responses to the created reserves and is independent of the assets purchased. The results imply that central bank reserve expansions can affect long-term bond prices even in the absence of long-term bond purchases.

#### KEYWORDS

unconventional monetary policy, transmission, reserve-induced portfolio balance channel

#### JEL CLASSIFICATION

G11

#### OTHER WORKING PAPER VERSION(S)

Christensen, Jens and Signe Krogstrup. 2016. [A portfolio model of quantitative easing](#). Federal Reserve Bank of San Francisco Working Paper Series 2016-12.

Christensen, Jens and Signe Krogstrup. 2016. [A portfolio model of quantitative easing](#). Peterson Institute for International Economics Working Paper Series 16-7.

### 2.3.10 PRICE CHANGE DISPERSION AND TIME-VARYING PASS-THROUGH TO CONSUMER PRICES

#### REFERENCE

Fleer, Rita, Barbara Rudolf and Mathias Zurlinden. 2016. [Price change dispersion and time-varying pass-through to consumer prices](#). SNB Working Papers 2016-17.

#### AFFILIATION OF THE AUTHOR(S)

Rita Fleer:  
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Mathias Zurlinden:  
SNB, Monetary Policy Analysis

#### ABSTRACT

This paper examines the relationship between the dispersion of changes in prices and the medium-run exchange rate pass-through in Swiss data. The prices considered are the elementary indices that form the basic building blocks for the construction of the CPI. The results indicate that fluctuations in the cross-sectional dispersion of changes in these price indices inform about variation in aggregate pass-through at business cycle frequencies. Because these data are readily available at monthly frequencies, they can be used in real time to help gauge the pass-through of exchange rate changes to retail prices.

#### KEYWORDS

exchange rate pass-through, heterogeneity, aggregate implications of price change dispersion

#### JEL CLASSIFICATION

E31

### 2.3.11 THE LIQUIDITY COVERAGE RATIO AND SECURITY PRICES

#### REFERENCE

Fuhrer, Lucas Marc, Benjamin Müller and Luzian Steiner. 2016. [The liquidity coverage ratio and security prices](#). SNB Working Papers 2016-11.

#### AFFILIATION OF THE AUTHOR(S)

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#### ABSTRACT

What is the added value of a security which qualifies as a “high-quality liquid asset” (HQLA) under the Basel III “Liquidity Coverage Ratio” (LCR)? In this paper, we quantify the added value in terms of yield changes and, as suggested by Stein (2013), call it HQLA premium. To do so, we exploit the introduction of the LCR in Switzerland as a unique quasi-natural experiment and we find evidence for the existence of an HQLA premium in the order of 4 basis points. Guided by theoretical considerations, we claim that the HQLA premium is state dependent and argue that our estimate is a lower bound measure. Furthermore, we discuss the implications of an economically significant HQLA premium. Thereby, we contribute to a better understanding of the LCR and its implications for financial markets.

#### KEYWORDS

Basel III, liquidity coverage ratio, high-quality liquid assets, HQLA premium

#### JEL CLASSIFICATION

G28

### 2.3.12 HOW RELIABLE ARE COINTEGRATION-BASED ESTIMATES FOR WEALTH EFFECTS ON CONSUMPTION? EVIDENCE FROM SWITZERLAND

#### REFERENCE

Galli, Alain. 2016. [How reliable are cointegration-based estimates for wealth effects on consumption? Evidence from Switzerland](#). SNB Working Papers 2016-03.

#### AFFILIATION OF THE AUTHOR(S)

Alain Galli:  
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#### ABSTRACT

According to economic theory, the intertemporal budget constraint of households implies that a permanent increase in wealth should have a positive effect on consumer spending. Given the comparatively strong increase in Swiss household wealth over the past few years, the question of the extent to which changes in wealth influence expenditures of households has become of special interest for Switzerland. In this paper, I show that while the link among consumption, wealth and income was quite strong from 1981 to 2000, it has been very unstable since 2001. This fact suggests that the gap among the three variables, i.e., the deviation from long-run equilibrium, that has opened over the last few years is less likely to close. The results apply to aggregate wealth effects as well as to separate financial and housing wealth effects. Furthermore, I document several fragility issues related to the use of the cointegration approach to estimate wealth effects. These issues highlight the importance of carefully checking the robustness of the results instead of looking just at one cointegration estimation method and only one time period. They also highlight the need for a non-cointegration approach to estimating wealth effects.

#### KEYWORDS

wealth effects, consumption-to-wealth ratio, cointegration, cay residual

#### JEL CLASSIFICATION

E21

### 2.3.13 STICKY CONSUMPTION AND WEALTH EFFECTS IN SWITZERLAND

#### REFERENCE

Galli, Alain. 2016. [Sticky consumption and wealth effects in Switzerland](#). SNB Working Papers 2016-14.

#### AFFILIATION OF THE AUTHOR(S)

Alain Galli:  
SNB, Economic Analysis (Switzerland)

#### ABSTRACT

When assessing the effect of changes in wealth on household expenditures, most empirical studies have used cointegration-based approaches. These approaches rely on the existence of a stable long-run relationship among consumption, wealth and income. However, in Switzerland no such relationship seems to be present after 2001. Motivated by this issue, this paper applies a recently suggested approach to estimating long-run wealth effects on consumption that does not rely on cointegration. This new approach relies on sticky consumption growth, which can be motivated by consumption habits or sticky expectations. In both cases, long-run wealth effects are the result of short-run reactions of households to changes in wealth which become long-lasting. Using this methodology, the estimated wealth effects on consumption in Switzerland are larger than suggested by cointegration-based estimates. Furthermore, the results show that there seems to be a remarkably high degree of consumption stickiness in Switzerland.

#### KEYWORDS

wealth effects, consumption dynamics, habit formation, sticky expectations, Bayesian estimation

#### JEL CLASSIFICATION

E21

### 2.3.14 FOREIGN PMIS: A RELIABLE INDICATOR FOR EXPORTS?

#### REFERENCE

Hanslin Grossmann, Sandra and Rolf Scheufele. 2016. [Foreign PMIs: A reliable indicator for exports?](#) SNB Working Papers 2016-01.

#### AFFILIATION OF THE AUTHOR(S)

Sandra Hanslin Grossmann:  
SNB, Economic Analysis (Switzerland)  
Rolf Scheufele:  
SNB, Economic Analysis (Switzerland)

#### ABSTRACT

Foreign economic activity is a major determinant of export development. This paper presents an indicator for nowcasting and forecasting exports, that is based on survey data capturing foreign economic perspectives. We construct an indicator by weighting foreign PMIs of main trading partners with their respective export shares. For two very trade-exposed countries (Germany and Switzerland), the paper shows that the indicator based on foreign PMIs is strongly correlated with exports (both total exports and goods exports). In an out-of-sample forecast comparison, we employ MIDAS models to forecast the two different definitions of exports. We observe that our export indicator performs very well relative to univariate benchmarks and relative to other major leading indicators using hard and soft data.

#### KEYWORDS

business tendency surveys, mixed frequencies, nowcasting, forecasting, MIDAS, exports

#### JEL CLASSIFICATION

F14

### 2.3.15 FORECASTING WITH LARGE UNBALANCED DATASETS: THE MIXED-FREQUENCY THREE-PASS REGRESSION FILTER

#### REFERENCE

Hepenstrick, Christian and Massimiliano Marcellino. 2016. [Forecasting with large unbalanced datasets: The mixed-frequency three-pass regression filter.](#) SNB Working Papers 2016-04.

#### AFFILIATION OF THE AUTHOR(S)

Christian Hepenstrick:  
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Massimiliano Marcellino:  
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#### ABSTRACT

In this paper, we propose a modification of the three-pass regression filter (3PRF) to make it applicable to large mixed frequency datasets with ragged edges in a forecasting context. The resulting method, labeled MF-3PRF, is very simple but compares well to alternative mixed frequency factor estimation procedures in terms of theoretical properties, finite sample performance in Monte Carlo experiments, and empirical applications to GDP growth nowcasting and forecasting for the USA and a variety of other countries.

#### KEYWORDS

dynamic factor models, mixed frequency, GDP nowcasting, forecasting, partial least squares

#### JEL CLASSIFICATION

E37



### 2.3.16 MACROECONOMIC SURPRISES, MARKET ENVIRONMENT AND SAFE-HAVEN CURRENCIES

#### REFERENCE

Jäggi, Adrian, Martin Schlegel and Attilio Zanetti. 2016. [Macroeconomic surprises, market environment and safe-haven currencies](#). SNB Working Papers 2016-15.

#### AFFILIATION OF THE AUTHOR(S)

Adrian Jäggi:  
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Martin Schlegel:  
SNB, Foreign Exchange and Gold (now: SNB, Singapore)  
Attilio Zanetti:  
SNB, Economic Analysis

#### ABSTRACT

In this paper, we study the reaction of the CHF and JPY to macroeconomic surprises and changes in the broader market environment before and during the crisis using high-frequency data. We show that both currencies are traditionally highly sensitive to macroeconomic surprises. This link, however, was significantly magnified during the crisis and effects persisted during times when monetary authorities implemented specific measures to limit the appreciation trend. We also find some evidence that, during the crisis, the CHF and JPY tended to respond more strongly to surprises generating an appreciation than to surprises leading to a depreciation. Both currencies also systematically respond to changes in the general market environment. This result is robust to the use of two measures of the market environment: VIX and on a novel index based on Bloomberg wires. Finally, our results suggest that negative macroeconomic surprises and deteriorations in the market environment are two distinct channels generating appreciation pressure on these two safe-haven currencies.

#### KEYWORDS

safe-haven currencies, Swiss franc, yen, macroeconomic surprises, risk

#### JEL CLASSIFICATION

F31

### 2.3.17 ON THE ROLES OF DIFFERENT FOREIGN CURRENCIES IN EUROPEAN BANK LENDING

#### REFERENCE

Krogstrup, Signe and Cédric Tille. 2016. [On the roles of different foreign currencies in European bank lending](#). SNB Working Papers 2016-07.

#### AFFILIATION OF THE AUTHOR(S)

Signe Krogstrup:  
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Cédric Tille:  
The Graduate Institute of International and Development Studies

#### ABSTRACT

We draw on a new data set on the use of Swiss francs and other currencies by European banks to assess the patterns of foreign currency bank lending. We show that the patterns differ sharply across foreign currencies. The Swiss franc is used predominantly for lending to residents, especially households. It is sensitive to the interest rate differential, exchange rate developments, funding availability, and to some extent international trade. Domestic lending in other currencies is used, to a greater extent, in cross-border lending, and for lending to resident nonfinancial firms, and is much less sensitive to the drivers identified for Swiss franc lending. Policy measures aimed at foreign currency lending have a clear impact on lending to residents. The results underline that not all foreign currencies are alike when it comes to foreign currency bank lending and the associated financial stability risks.

#### KEYWORDS

Swiss franc lending, foreign currency lending, cross-border transmission of shocks, European bank balance sheets

#### JEL CLASSIFICATION

F32

### 2.3.18 SECURITISATION, LOAN GROWTH AND BANK FUNDING: THE SWISS EXPERIENCE SINCE 1932

#### REFERENCE

Meuli, Jonas Gabriel, Thomas Nellen and Thomas Nitschka. 2016. [Securitisation, loan growth and bank funding: the Swiss experience since 1932](#). SNB Working Papers 2016-18.

#### AFFILIATION OF THE AUTHOR(S)

Jonas Gabriel Meuli:  
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SNB, Monetary Policy Analysis

#### ABSTRACT

This paper empirically analyses securitisation in Switzerland from a macroeconomic and bank balance sheet perspective based on a novel and near-comprehensive data set on a specific form of securitisation over the sample period from 1932 to 2014. The Swiss Pfandbrief is a distinct covered bond with a similar institutional framework as the U.S. Federal Home Loan Bank System.

#### KEYWORDS

securitisation, covered bonds, mortgage loans, bank balance sheet management, business cycles, financial cycle, financial stability

#### JEL CLASSIFICATION

E43

### 2.3.19 TOWARD REMOVAL OF THE SWISS FRANC CAP: MARKET EXPECTATIONS AND VERBAL INTERVENTIONS

#### REFERENCE

Mirkov, Nikola, Igor Pozdeev and Paul Söderlind. 2016. [Toward removal of the Swiss franc cap: Market expectations and verbal interventions](#). SNB Working Papers 2016-10.

#### AFFILIATION OF THE AUTHOR(S)

Nikola Mirkov:  
SNB, Economic Analysis (International)  
Igor Pozdeev:  
University of St. Gallen  
Paul Söderlind:  
University of St. Gallen

#### ABSTRACT

We ask whether the markets expected the Swiss National Bank (SNB) to discontinue the 1.20 cap on the Swiss franc against the euro in January 2015. In the runup to the SNB announcement, neither options on the euro/Swiss franc nor FX liquidity indicated a significant shift in market expectations. Furthermore, we find that the SNB's verbal interventions during the period of cap enforcement increased the credibility of the cap by reducing the uncertainty of future euro/Swiss franc rate. We conclude that the markets did not anticipate the discontinuation of the policy.

#### KEYWORDS

Swiss franc, implied volatilities, market expectations

#### JEL CLASSIFICATION

E58

#### OTHER WORKING PAPER VERSION(S)

Mirkov, Nikola, Igor Pozdeev and Paul Söderlind. 2016. [Toward removal of the Swiss franc cap: Market expectations and verbal interventions](#). University of St. Gallen Working Papers on Finance 1614.

### 2.3.20 FORECASTING EURO AREA RECESSIONS IN REAL-TIME

#### REFERENCE

Pirschel, Inske. 2016. [Forecasting euro area recessions in real-time](#). Kiel Working Papers 2020.

#### AFFILIATION OF THE AUTHOR(S)

Inske Pirschel:  
SNB, Inflation Forecasting

#### ABSTRACT

I present evidence that the linear mixed-frequency Bayesian VAR provides very sharp and well calibrated monthly real-time recession probabilities for the euro area for the period from 2004 until 2013. The model outperforms not only the univariate regime-switching models for a number of hard and soft economic indicators and their optimal linear combinations, but also a real-time recession index obtained with Google Trends data. This result holds irrespective of whether the joint predictive distribution of several economic indicators or the marginal distribution of real GDP growth is evaluated to extract the real-time recession probabilities of the mixed-frequency Bayesian VAR. The inclusion of the confidence index in industry turns out to be crucial for the performance of the model.

#### KEYWORDS

density nowcasting, real-time recession forecasting, mixed-frequency data, Bayesian VAR, regime-switching models, linear opinion pool, google trends

#### JEL CLASSIFICATION

C53

### 2.3.21 NETWORKS AND LENDING CONDITIONS: EMPIRICAL EVIDENCE FROM THE SWISS FRANC MONEY MARKETS

#### REFERENCE

Schumacher, Silvio. 2016. [Networks and lending conditions: Empirical evidence from the Swiss franc money markets](#). SNB Working Papers 2016-12.

#### AFFILIATION OF THE AUTHOR(S)

Silvio Schumacher:  
SNB, Money Market (now: SNB, Foreign Exchange and Gold)

#### ABSTRACT

This paper provides an empirical analysis of the network characteristics of two interrelated interbank money markets and their impact on overall market conditions. Based on transaction data from the unsecured and secured Swiss franc money markets, the trading network structures are assessed before, during and after the financial market crisis. It can be shown that banks in the unsecured market are connected to a lower number of counterparties but rely heavily on reciprocal and clustered trading relationships. The corresponding network structure likely favored the exchange of liquidity prior to the financial market crisis but also might have led to a lower resilience of the unsecured market. There is empirical evidence that conditions in both sub-markets were significantly driven by the individual network position of banks. The network topology likely affected the shift observed from unsecured to secured lending and the increase in risk premia for unsecured lending during the financial market crisis. This paper therefore provides further evidence on the functioning of interbank money markets and, especially, on the impact of market participants interconnectedness.

#### KEYWORDS

repo transaction, unsecured interbank money market, financial market turmoil, financial stability, Switzerland

#### JEL CLASSIFICATION

E42

### 2.3.22 PRICE EXPECTATIONS AND THE US HOUSING BOOM

#### REFERENCE

Towbin, Pascal and Sebastian Weber. 2016. [Price expectations and the US housing boom](#). SNB Working Papers 2016-06.

#### AFFILIATION OF THE AUTHOR(S)

Pascal Towbin:  
SNB, Systemically Important Banks  
Sebastian Weber:  
International Monetary Fund

#### ABSTRACT

As it has proved difficult to explain the recent US house price boom on the basis of fundamentals, many observers have emphasised the role of speculation. This kind of argument is, however, indirect, as speculation is treated as a deviation from a benchmark. Our paper identifies house price expectation shocks directly, using a VAR with sign restrictions. House price expectation shocks are the most important driver of the US house price boom. We also show that a model-based measure of changes in price expectations leads a survey-based measure. Our baseline specification leaves the question of whether expectation shifts are realistic or unrealistic unanswered. In alternative specifications, we provide evidence that expectation shifts during the boom were largely unrealistic.

#### KEYWORDS

housing market, house price expectations, speculation, housing boom, VAR

#### JEL CLASSIFICATION

R31

### 2.3.23 CAPITAL FLOWS AND THE SWISS FRANC

#### REFERENCE

Yesin, Pinar. 2016. [Capital flows and the Swiss franc](#). SNB Working Papers 2016-08.

#### AFFILIATION OF THE AUTHOR(S)

Pinar Yesin:  
SNB, International Policy Analysis

#### ABSTRACT

The Swiss franc is known to appreciate strongly during financial market turmoil, demonstrating its status as a typical safe haven currency. One possible mechanism behind this appreciation during times of global turmoil is assumed to be higher capital inflows to Switzerland. This paper attempts to find some empirical evidence for this presumption. The analysis reveals that capital flow variables are not necessarily coincident with the movements of the Swiss franc. Interest rate differentials, a traditional determinant of exchange rates, co-move only weakly with Swiss franc movements. However, a robust and stronger link between variables that capture global or regional market uncertainty and movements of the Swiss franc is observed. Specifically, the information channel rather than new cross-border investment is found to be coincident with the Swiss franc. The weak link between capital flows and the exchange rate is confirmed to some extent for some other countries.

#### KEYWORDS

exchange rate, safe haven currency, gross capital flows, net flows, private flows

#### JEL CLASSIFICATION

F31

#### OTHER WORKING PAPER VERSION(S)

Yesin, Pinar. 2016. [Capital flows and the Swiss franc](#). Study Center Gerzensee Working Papers 16.04.

### 2.3.24 EXCHANGE RATE PREDICTABILITY AND STATE-OF-THE-ART MODELS

#### REFERENCE

Yesin, Pinar. 2016. [Exchange rate predictability and state-of-the-art models](#). SNB Working Papers 2016-02.

#### AFFILIATION OF THE AUTHOR(S)

Pinar Yesin:  
SNB, International Policy Analysis

#### ABSTRACT

This paper empirically evaluates the predictive performance of the International Monetary Fund's (IMF) exchange rate assessments with respect to future exchange rate movements. The assessments of real trade-weighted exchange rates were conducted from 2006 to 2011, and were based on three state-of-the-art exchange rate models with a medium-term focus which were developed by the IMF. The empirical analysis using 26 advanced and emerging market economy currencies reveals that the 'diagnosis' of undervalued or overvalued currencies based on these models has significant predictive power with respect to future exchange rate movements, with one model outperforming the other two. The models are better at predicting future exchange rate movements in advanced and open economies. Controlling for the exchange rate regime does not increase the predictive power of the assessments. Furthermore, the directional accuracy of the IMF assessments is found to be higher than market expectations.

#### KEYWORDS

exchange rate models, exchange rate assessment, predictability, equilibrium

#### JEL CLASSIFICATION

C53

#### OTHER WORKING PAPER VERSION(S)

Yesin, Pinar. 2016. [Exchange rate predictability and state-of-the-art models](#). Study Center Gerzensee Working Papers 16.03.



# 3

## Further research activities in 2016

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This chapter reviews further research activities at the SNB in 2016.

### 3.1 SNB RESEARCH SEMINARS

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8 January 2016	<i>Robert Bichsel</i> (SNB) and <i>Toni Beutler</i> (SNB) The impact of interest rate risk on bank lending
15 January 2016	<i>Stéphane Verani</i> (Federal Reserve Board) Self-fulfilling runs: Evidence from the US life insurance industry
15 January 2016	<i>Philippe Bacchetta</i> (HEC Lausanne) Self-fulfilling debt crises: Can monetary policy really help?
29 January 2016	<i>Franz Seitz</i> (Weiden Technical University of Applied Sciences) Money and modern macro: Vicious, virtual or virtuous relationship
5 February 2016	<i>Patrick Gagliardini</i> (University of Lugano) Is industrial production still the dominant factor for the US economy?
18 February 2016	<i>Maria Silgoner</i> (Oesterreichische Nationalbank) Financial literacy gaps of the Austrian population
26 February 2016	<i>Philippe Bacchetta</i> (HEC Lausanne) Countercyclical foreign currency borrowing: Eurozone firms in 2007–2009
4 March 2016	<i>Diethelm Wuertz</i> (ETH) Stability: Does it matter? Stability concepts for a sustainable management of financial investments and resources
9 March 2016	<i>Nathan Foley-Fisher</i> (Federal Reserve Board) Securities lending as wholesale funding: Evidence from the US life insurance industry
11 March 2016	<i>Simon Gilchrist</i> (Boston University) Financial heterogeneity and monetary union
18 March 2016	<i>Francesca Carapella</i> (Federal Reserve Board) Competitive search in money markets and implementation of monetary policy
23 March 2016	<i>Eric Schaanning</i> (LSE) Fire sales and systemic risk in financial markets: Modelling, monitoring and prudential tools
5 April 2016	<i>Jens Eisenschmidt</i> (ECB) The impact of negative interest rates on bank balance sheets: Evidence from the euro area
15 April 2016	<i>Sebastian Schmidt</i> (ECB) Conservatism and liquidity traps
25 April 2016	<i>Hélène Rey</i> (LBS) Evidence from the euro area
6 May 2016 CEIS <sup>1</sup>	<i>Matthieu Leimgruber</i> (University of Zurich) and <i>Leon Wansleben</i> (LSE) Karl Brunner (1916–1989) and the Atlantic circulations of monetarism: The adoption of monetarist central banking in Switzerland
11 May 2016	<i>Emanuel Mönch</i> (Deutsche Bundesbank) In search of a nominal anchor: What drives inflation expectations?
17 May 2016 CEIS	<i>Aleksander Berentsen</i> (University of Basel) Vollgeld (Swiss sovereign money initiative)
20 May 2016	<i>Fabian Schär</i> (Synpulse Management Consulting, Zurich) Blockchain: The future of recordkeeping
27 May 2016	<i>Sebastian Doerr</i> (University of Zurich) The state of the global economy: The IMF's April 2015 world economic outlook
31 May 2016 CEIS	<i>Mark Sniderman</i> (Weatherhead School of Management, Ohio) Outlook US economy

2 June 2016	<i>Brent Meyer</i> (Federal Reserve Bank of Atlanta) The inflation expectations of firms: What do we (think we) know?
3 June 2016	<i>Andrea Vedolin</i> (LSE) Policy announcements in FX markets
8 June 2016 CEIS	<i>Mark Sniderman</i> (Weatherhead School of Management, Ohio) US labour market
10 June 2016 Roundtable discussion	<i>Mark Sniderman</i> (Weatherhead School of Management, Ohio) International monetary policy
17 June 2016	<i>Ruediger Fahlenbrach</i> (HEC Lausanne) Why do CCPs play such a small role in the US repo market and why that might change?
21 June 2016	<i>Dimitrios Tsomocos</i> (Oxford University) How do investors and firms react to an unexpected currency appreciation shock?
5 July 2016	<i>Gunther Schnabl</i> (University of Leipzig) Net foreign asset positions and appreciation expectations on the Swiss franc and the Japanese yen
12 August 2016	<i>Anjeza Kadilli</i> (University of Geneva) Measuring co-movement by a smooth transition simultaneous equation model
16 August 2016 CEIS	<i>Antoine Martin</i> (Federal Reserve Bank of New York) Implementation with a large central bank balance sheet
26 August 2016	<i>Alfred Guender</i> (University of Canterbury) The real exchange rate in open-economy Taylor rules: A re-assessment
2 September 2016	<i>Mark Mink</i> (De Nederlandsche Bank) A descriptive model of banking and aggregate demand
16 September 2016	<i>Kristyna Ters</i> (University of Basel) and <i>Jörg Urban</i> (BIS) The transmission of euro sovereign risk contagion: Evidence from intraday CDS and bond markets
14 October 2016 CEIS	<i>Zsoka Koczan</i> (IMF) Global disinflation in an era of constrained monetary policy
21 October 2016	<i>Joséphine Molleyres</i> (University of Basel) Time-varying price discovery dynamics of corporate credit default swaps and bonds
24 October 2016	<i>Seppo Honkapohja</i> (Bank of Finland) Expectations, stagnation and fiscal policy
25 October 2016	<i>Eric Swanson</i> (University of California, Irvine) Explaining the boom-bust cycle in the US housing market: A reverse-engineering approach
1 November 2016	<i>Steven Ongena</i> (University of Zurich) Measuring boom and bust: The case of the Great Crash of 1929
4 November 2016 CEIS	<i>Benedikt Braumann</i> (SECO) Macroeconomic planning
11 November 2016	<i>Mirko Wiederholt</i> (Goethe University, Frankfurt) Empirical properties of inflation expectations and the zero lower bound
11 November 2016	<i>Christof Stahel</i> (U.S. Securities and Exchange Commission) Mutual fund cash shortfall
18 November 2016 CEIS	<i>Miles Kimball</i> (University of Colorado, Boulder) 18 misconceptions about eliminating the zero lower bound (and any effective lower bound on interest rates)
18 November 2016 CEIS	<i>Miles Kimball</i> (University of Colorado, Boulder) Enabling deeper negative rates by managing the side effects of a zero paper currency interest rate
25 November 2016	<i>Jan Wrampelmeyer</i> (University of St. Gallen) Fragility of money markets
16 December 2016	<i>Klaus Adam</i> (University of Mannheim) The optimal inflation rate with firm level productivity trends

1 CEIS: Current Economic Issues Seminar



## 3.2 SNB RESEARCH LECTURES

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The SNB regularly invites experts to give research lectures on topical research areas.

### **Monetary policy in open economies, international determination of consumer prices and nominal exchange rates**

In 2016, Charles Engel (University of Wisconsin – Madison) delivered a series of lectures over five days on the topics of ‘Monetary policy in open economies, international determination of consumer prices and nominal exchange rates’.

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Tuesday, 21 June 2016	Lecture 1: Recent developments in the theory of monetary policy in open economies, part I
Wednesday, 22 June 2016	Lecture 2: Recent developments in the theory of monetary policy in open economies, part II
Thursday, 23 June 2016	Lecture 3: Recent developments in the international determination of consumer prices
Thursday, 30 June 2016	Lecture 4: Recent developments in the determination of nominal exchange rates, part I
Friday, 1 July 2016	Lecture 5: Recent developments in the determination of nominal exchange rates, part II

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### **Charles Engel**

Charles Engel is the Hester professor in the economics department at the University of Wisconsin – Madison and a research associate at the National Bureau of Economic Research (NBER). He received a BA from the University of North Carolina at Chapel Hill in 1977 and a PhD from the University of California, Berkeley, in 1983. He is best known for his research on nominal and real exchange rate movements. In addition, he is the editor of the *Journal of International Economics*. Charles Engel has published work in the *American Economic Review*, the *Journal of Political Economy*, the *Review of Economic Studies*, the *Journal of Monetary Economics* and the *Journal of Money, Credit and Banking*, among many others.

### 3.3 RESEARCH VISITORS AT THE SNB

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**Philippe Bacchetta**, 13 January–17 March 2016  
Professor, Department of Economics, HEC Lausanne

Philippe Bacchetta is Professor of Economics at the University of Lausanne. He joined the Swiss Finance Institute (SFI) in 2006, and has been an SFI Senior Chair since 2013. He holds a PhD in Economics from Harvard University. He has been a visiting scholar at the International Monetary Fund on several occasions and has worked as a consultant for numerous central banks around the world. From 1998 to 2007, he was Director of the SNB's Study Center Gerzensee. Since 2015, he has been Programme Director of the Centre for Economic Policy Research's International Macroeconomics and Finance programme. His research focuses primarily on international finance, financial crises, and monetary economics.

**Simon Gilchrist**, 7–11 March 2016  
Professor, Department of Economics, Boston University

Simon Gilchrist is Professor at the Department of Economics at Boston University, Research Associate at the National Bureau of Economic Research and International Research Fellow at the Kiel Institute. His research has been published in leading academic journals such as the *American Economic Review*, *Journal of Political Economy*, *Quarterly Journal of Economics*, *AEJ Macro* and *Journal of Monetary Economics*. He has worked as a consultant for several central banks, including the Board of Governors of the Federal Reserve System, Banque de France, Bank of Japan and Bank of Canada.

During his visit to the SNB, Simon Gilchrist advised economists in the Economic Analysis (Switzerland) team on two research projects which analyse the influence of firms' financial situation on their financing costs and on their labour hoarding behaviour.

**Mark Sniderman**, 30 May–11 June 2016  
Adjunct Professor, Department of Economics at the Weatherhead School of Management, Case Western Reserve University

Mark Sniderman's academic and professional interests are focused on macroeconomics and financial regulation, especially the roles played by central banks. He is currently studying the unconventional monetary policies being employed by central banks in the wake of the global financial crisis, as well as their newer responsibilities for promoting financial stability. Mark Sniderman joined Case Western Reserve University after a career with the Federal Reserve Bank of Cleveland, culminating in his position as Executive Vice President and Chief Policy Officer. In that role, he served as principal adviser to the bank's president for economic and financial policy issues. As a senior executive officer, he had responsibilities for leadership of the bank's economic research, public affairs, and community affairs departments; he also served on the bank's Management Committee. Mark Sniderman chaired the bank's Senior Policy Committee and was a member of its Credit Risk Management Committee.

**Massimiliano Marcellino**, 13–15 June 2016

Professor of Econometrics, Department of Economics, Bocconi University

Massimiliano Marcellino is Professor of Econometrics in the Economics Department of Bocconi University, a fellow at the Centre for Economic Policy Research and the Innocenzo Gasparini Institute for Economic Research, and the Scientific Chairman of the Euro Area Business Cycle Network. Previously, he held the Pierre Werner Chair on Monetary Union at the European University Institute in Florence, where he was also the Director of the Department of Economics. He has worked as a consultant for several central banks and international institutions, including the ECB, Bundesbank, Bank of Italy, IMF, European Commission and Eurostat.

During his two visits, Massimiliano Marcellino worked on a joint research project with two economists from the Economic Analysis (Switzerland) team, Alain Galli and Rolf Scheuefele. The project deals with hierarchical models for forecasting macroeconomic aggregates.

**Eric Swanson**, 25–28 October 2016

Professor, Department of Economics, University of California

Eric Swanson is Professor of Economics at the University of California, Irvine. In 1998 he received his PhD in Economics from Stanford University. Then he took a job with the Monetary Affairs Division of the Federal Reserve Board, doing basic research in macroeconomics and monetary economics. His research began to focus increasingly on the relationship between financial markets and the macroeconomy. In 2005, he started working at the San Francisco Fed in the Research Department. He continued to focus his research on macro finance, both theoretical and empirical. After about 15 years of Federal Reserve policy work, he decided to go back to academia to have more time for research and teaching. He accepted a position as Professor in the Economics Department at the University of California, Irvine.

### 3.4 RESEARCH CONFERENCES ORGANISED BY THE SNB

#### 3.4.1 CONFERENCES WITH THE SNB

##### 3.4.1.1 Euro Area Business Cycle Network (EABCN) Conference: 'Medium and long run implications of financial crises'

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Date	21/22 January 2016
Venue	Zurich
Organising committee	Carlos Lenz (SNB) Massimiliano Marcellino (Bocconi University, EABCN and CEPR) Attilio Zanetti (SNB) Fabrizio Zilibotti (University of Zurich and CEPR)

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- Session 1** – Insider-outsider labor markets, hysteresis and monetary policy  
by *Jordi Galí* (CREI and CEPR)  
Discussant: *Antonella Trigari* (Bocconi University and CEPR)
- Session 2** – Stagnation traps  
by *Luca Fornaro* (CREI, Universitat Pompeu Fabra and CEPR),  
*Gianluca Benigno* (LSE and CEPR)  
Discussant: *Robert Kollmann* (ECARES, Université Libre de Bruxelles  
and CEPR)
- Session 3** – Demographic structure and macroeconomic trends  
by *Yunus Aksoy* (Birkbeck College, University of London), *Henrique S.  
Basso* (Banco de España), *Tobias Grassl* (Birkbeck, University of London)  
and *Ron P. Smith* (Birkbeck, University of London)  
Discussant: *Aleksandra Halka* (National Bank of Poland)
- Poster Session I**
- Measuring financial cycles with a model-based filter: Empirical evidence  
for the United States and the euro area  
by *Irma Hindrayanto* (De Nederlandsche Bank), *Gabriele Galati*  
(De Nederlandsche Bank), *Siem Jan Koopman* (VU University Amsterdam)  
and *Marente Vlekke* (ECB)
  - Long-term TFP declines and negative real interest rates  
by *Jose Ignacio Lopez* (HEC, Paris), *Edouard Challe* (Ecole Polytechnique  
Paris) and *Eric Mengus* (HEC, Paris)
  - Job destruction without job creation: Structural transformation  
in the overborrowed America  
by *Alessandro Galesi* (Banco de España and CEMFI) and  
*Claudio Michelacci* (EIEF and CEPR)
  - Output gap in presence of financial frictions and monetary policy trade-offs  
by *Paolo Gelain* (Norges Bank), *Francesco Furlanetto* (Norges Bank) and  
*Marzie Taheri Sanjani* (IMF)
  - Business and financial cycles: An unobserved components models perspective  
by *Marente Vlekke* (ECB) and *Gerhard Rünstler* (ECB)
- Session 4** – Structural reforms and inclusive growth  
by *Philippe Aghion* (Harvard University, Collège de France and CEPR)  
Discussant: *David Hémons* (University of Zurich and CEPR)
- Session 5** – Learning about banks' net worth and the slow recovery after the financial crisis  
by *Michael Kühn* (Deutsche Bundesbank) and *Josef Hollmayr*  
(Deutsche Bundesbank)  
Discussant: *Paolo Gelain* (Norges Bank)

- Low-frequency econometrics  
by *Mark W. Watson* (Princeton University) and *Ulrich K. Müller* (Princeton University)  
Discussant: *Patrick Gagliardini* (University of Lugano)

Session 6
- Sovereign yields and the risk-taking channel of currency appreciation  
by *Hyun Song Shin* (BIS and CEPR), *Boris Hofmann* (BIS) and *Ilhyock Shim* (BIS)  
Discussant: *Philippe Bacchetta* (HEC Lausanne and CEPR)

Session 7
- Search for yield  
by *Rafael Repullo* (CEMFI and CEPR) and *David Martinez-Miera* (Universidad Carlos III de Madrid)  
Discussant: *Angelo Ranaldo* (University of St.Gallen)

Session 8
- When money crowds out capital: Stagnation in a liquidity trap  
by *Kenza Benhima* (University of Lausanne and CEPR), *Philippe Bacchetta* (HEC Lausanne, Swiss Finance Institute and CEPR) and *Yannick Kalantzis* (Banque de France)  
Discussant: *Jose Ignacio Lopez* (HEC Paris)

Session 9
- Asset pricing and the propagation of financial shocks  
by *Ivan Jaccard* (ECB)

Poster Session II
- The post-crisis slump in the euro area and the US: Evidence from an estimated three-region DSGE model  
by *Robert Kollmann* (ECARES, Université Libre de Bruxelles and CEPR), *Beatrice Pataracchia* (EU Commission, Joint Research Centre), *Rafal Raciborski* (EU Commission, DG ECFIN), *Marco Ratto* (EU Commission, Joint Research Centre), *Werner Roeger* (EU Commission, DG ECFIN) and *Lukas Vogel* (EU Commission, DG ECFIN)
- Financial crises and economic recovery: The role of structural reforms and macroeconomic policies  
by *Albi Tola* (SNB) and *Sébastien Wälti* (SNB)
- Aggregate bank capital and credit dynamics  
by *Nataliya Klimenko* (University of Zurich), *Sebastian Pfeil* (University of Bonn) and *Jean-Charles Rochet* (University of Zurich, SFI, TSE-IDEI and CEPR)
- A model of slow recoveries from financial crises  
by *Albert Queralto* (Federal Reserve Board)
- Monetary policy during financial crises: Is the transmission mechanism impaired?  
by *Galina Potjagailo* (University of Kiel and Kiel Institute for the World Economy), *Nils Jannsen* (Kiel Institute for the World Economy) and *Maik H. Wolters* (University of Kiel)
- House prices and consumer spending  
by *Guido Lorenzoni* (Northwestern University), *David Berger* (Northwestern University), *Veronica Guerrieri* (University of Chicago) and *Joseph Vavra* (University of Chicago)  
Discussant: *Cédric Tille* (Graduate Institute, Geneva and CEPR)

Session 10

**3.4.1.2 7th SNB-IMF High Level Conference on  
the International Monetary System:  
'Towards a system of multiple reserve currencies:  
Challenges and opportunities'**

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Date	10 May 2016
Venue	Zurich
Organising committee	Roberto Cippà (SNB) Lena Andresen (SNB)

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- Opening remarks** – by *Thomas J. Jordan* (Chairman of the Governing Board, SNB)
- Concluding remarks** – by *Christine Lagarde* (Managing Director, IMF)
- Panel I** – Will more reserve currencies strengthen the international monetary system?  
Lead speaker: *Claudio Borio* (BIS)  
Speakers: *Agnès Bénassy-Quéré* (Panthéon-Sorbonne University),  
*Agustín Carstens* (Central Bank of Mexico), *William Dudley* (Federal Reserve Bank of New York) and *Philip Lane* (Central Bank of Ireland)
- Panel II** – What policies can help support the internationalization of a currency?  
Lead speaker: *Menzie Chinn* (University of Wisconsin-Madison)  
Speakers: *Yi Gang* (People's Bank of China), *Stefan Ingves* (Sveriges Riksbank), *Elvira Nabiullina* (Central Bank of Russia) and *Thomas Mayer* (Flossbach von Storch Research Institute)
- Panel III** – Beyond currencies: What other options are available for reserve diversification?  
Lead speaker: *Eswar Prasad* (Cornell University)  
Speakers: *Willem Buiter* (Citigroup), *Miroslav Singer* (Czech National Bank), *Alan Taylor* (UC Davis) and *Charles Wyplosz* (Graduate Institute, Geneva)

### 3.4.1.3 SNB-IMF-IMF Economic Review Conference: 'Exchange rates and external adjustment'

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Date	24/25 June 2016
Venue	Zurich
Organising committee	Raphael A. Auer <sup>§</sup> (SNB) Ariel Burstein (UCLA and IMF Economic Review) Andreas Fischer (SNB) Pierre-Olivier Gourinchas (UC Berkeley and IMF Economic Review) Gian Maria Milesi-Ferretti (IMF and IMF Economic Review) Maurice Obstfeld (IMF) Pau Rabanal (IMF and IMF Economic Review) Philip U. Sauré (SNB)

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- Revisiting macroprudential policy in open-economy models with financial frictions  
by *Stephanie Schmitt-Grohe* (Columbia University) and *Martin Uribe* (Columbia University)  
Discussant: *Damiano Sandri* (IMF)
- Exchange rate adjustment in financial crises by *Michael Devereux* (University of British Columbia) and *Changhua Yu* (CCER, Peking University)  
Discussant: *Tommaso Monacelli* (Bocconi University)
- Are capital inflows expansionary or contractionary? Theory, policy implications, and some evidence  
by *Marcos Chamon* (IMF), *Olivier Blanchard* (PIIE), *Jonathan D. Ostry* (IMF) and *Atish R. Ghosh* (IMF)  
Discussant: *Luca Fornaro* (CREI)
  
- China's imbalances: Trade integration in a dynamic general equilibrium model by *George Alessandria* (University of Rochester), *Horag Choi* (Monash University) and *Dan Lu* (University of Rochester)  
Discussant: *Raphael A. Auer*<sup>§</sup> (SNB)
- How important are trade prices for trade flows?  
by *Logan T. Lewis* (Federal Reserve Board)  
Discussant: *Philip U. Sauré* (SNB)
  
- Exchange rates and trade: Disconnected?  
by *Marcos Poplawski-Ribeiro* (IMF), *Daniel Leigh* (IMF), *Weicheng Lian* (IMF), *Rachel Szymanski* (IMF), *Viktor Tsyrennikov* (IMF) and *Hong Yang* (IMF)  
Discussant: *Matthieu Bussière* (Bank of France)
- The case for flexible exchange rates in a great recession  
by *Gernot Müller* (University of Tübingen), *Giancarlo Corsetti* (Cambridge University) and *Keith Kuester* (University of Bonn)  
Discussant: *Giovanni Lombardo* (BIS)

**Session I:**  
Financial frictions and  
macroeconomic policies

**Session II:**  
Exchange rates, trade,  
and capital flows

**Session III:**  
Exchange rates and trade

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<sup>§</sup> No longer at the SNB

Session IV:  
Inflation dynamics

- The distributional consequences of large devaluations  
by *Javier Cravino* (University of Michigan) and *Andrei Levchenko*  
(University of Michigan)  
Discussant: *Raphael Schoenle* (Brandeis)
- International inflation spillovers through input linkages  
by *Andrei Levchenko* (University of Michigan), *Raphael A. Auer*<sup>§</sup> (SNB)  
and *Philip U. Sauré* (SNB)  
Discussant: *Ariel Burstein* (UCLA)

Session V:  
Exchange rate policies

- Sustainable exchange rates: Currency pegs and the central bank's  
balance sheet  
by *Manuel Amador* (Minneapolis Fed and University of Minnesota),  
*Javier Bianchi* (Minneapolis Fed), *Luigi Bocola* (Northwestern University)  
and *Fabrizio Perri* (Minneapolis Fed)  
Discussant: *Marco Del Negro* (New York Fed)
- Exchange rate disconnect  
by *Oleg Itskhoki* (Princeton University) and *Dmitry Mukhin*  
(Princeton University)  
Discussant: *Cédric Tille* (Graduate Institute, Geneva)

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§ No longer at the SNB



### 3.4.1.4 Karl Brunner Centenary Event

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Date	22 September 2016
Venue	Zurich
Organising committee	Thomas Moser (SNB) Marcel R. Savioz (SNB)

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- by *Thomas Jordan* (SNB) Welcome remarks
  
- Karl Brunner, scholar: An appreciation Part I  
by *Allan H. Meltzer* (Allan H. Meltzer University Professor of Political  
Economy, Tepper School of Business, Carnegie Mellon University) Commemorative Seminar
- Intellectual origins of the financial crisis  
by *Benjamin M. Friedman* (William Joseph Maier Professor of  
Political Economy, Harvard University)
- A personal tribute to Karl Brunner  
by *Charles I. Plosser* (former President of the Federal Reserve Bank  
of Philadelphia)
- Karl Brunner and the heritage of monetarism  
by *Ernst Baltensperger* (Professor Emeritus, University of Bern)
  
- Rethinking central bank design Part II  
by *Kenneth S. Rogoff* (Thomas D. Cabot Professor of Public Policy  
and Professor of Economics at Harvard University) 1st Karl Brunner  
Distinguished Lecture
  
- Streaming at [www.snb.ch](http://www.snb.ch), Research TV

### 3.4.1.5 10th SNB Research Conference: 'New perspectives on the role, instruments and effects of monetary policy'

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Date	23/24 September 2016
Venue	Zurich
Organising committee	Ernst Baltensperger (Study Center Gerzensee) Athanasios Orphanides (MIT) Samuel Reynard (SNB) Marcel R. Savioz (SNB)

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#### Opening remarks

- by *Fritz Zurbrügg* (SNB)

#### Session I (Chair: Athanasios Orphanides, MIT)

- Measuring the natural rate of interest: International trends and determinants by *Kathryn Holston* (Federal Reserve Board), *Thomas Laubach* (Federal Reserve Board) and *John C. Williams* (Federal Reserve Bank of San Francisco)  
Discussants: *Marc Giannoni* (Federal Reserve Bank of New York) and *Max Gillman* (University of Missouri St. Louis)
- The theory of unconventional monetary policy by *Roger E. A. Farmer* (University of California) and *Pawel Zabczyk* (Bank of England)  
Discussants: *Christian Hopenstrick* (SNB) and *Bernhard Winkler* (ECB)
- Floor systems and the Friedman rule: The fiscal arithmetic of open market operations by *Todd Keister* (Rutgers University), *Antoine Martin* (Federal Reserve Bank of New York) and *James McAndrews* (Federal Reserve Bank of New York)  
Discussants: *Aleksander Berentsen* (University of Basel) and *Mico Loretan* (SNB)

#### Session II (Chair: Marcel Savioz, SNB)

- Mortgages and monetary policy by *Carlos Garriga* (Federal Reserve Bank of St. Louis), *Finn E. Kydland* (University of California-Santa Barbara) and *Roman Sustek* (Queen Mary University of London)  
Discussants: *Cédric Tille* (Graduate Institute Geneva) and *Behzad Diba* (Georgetown University)
- Leaning against the credit cycle by *Paolo Gelain* (Norges Bank), *Kevin J. Lansing* (Federal Reserve Bank of San Francisco) and *Gisle Natvik* (Norges Bank)  
Discussants: *Lars E.O. Svensson* (Stockholm School of Economics) and *Tobias Cwik* (SNB)
- Macroprudential policy in the new Keynesian world by *Hans Gersbach* (ETH Zurich), *Volker Hahn* (University of Konstanz) and *Yulin Liu* (ETH Zurich)  
Discussants: *Harris Dellas* (University of Bern) and *Jörn Tenhofen* (SNB)

#### Session III (Chair: Samuel Reynard, SNB)

- Excess returns in the Swiss franc money market by *Lucas Marc Fuhrer* (SNB), *Basil Guggenheim* (SNB) and *Matthias Jüttner* (SNB)  
Discussants: *Kenneth West* (University of Wisconsin) and *Cyril Monnet* (University of Bern)
- Currency wars or efficient spillovers? A general theory of international policy cooperation by *Anton Korinek* (Johns Hopkins University)  
Discussants: *Michael Bordo* (Rutgers University) and *Jeff Campbell* (Federal Reserve Bank of Chicago)
- International inflation spillovers through input linkages by *Raphael A. Auer* (SNB; no longer at the SNB), *Andrei A. Levchenko* (University of Michigan) and *Philip U. Sauré* (SNB)  
Discussants: *Federico Mandelman* (Federal Reserve Bank of Atlanta) and *Stefan Gerlach* (BSI Bank)

#### Official conference dinner

- Introduction by *Fritz Zurbrügg* (SNB)

### 3.4.1.6 BuBa-OeNB-SNB Workshop

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Date 13/14 October 2016  
Venue Eltville  
Organising committee Emanuel Mönch (Deutsche Bundesbank)  
Martin Summer (Oesterreichische Nationalbank)  
Marcel R. Savioz (SNB)

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### 3.4.1.7 JME-SNB-SCG Conference

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Date 28/29 October 2016  
Venue Study Center Gerzensee  
Organising committee Dirk Niepelt (Study Center Gerzensee)  
Sérgio Rebelo (Northwestern University)  
Ricardo Reis (LSE)  
Marcel Savioz (SNB)  
Mark Watson (Princeton University)

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### 3.4.1.8 Joint Central Bankers Conference

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Date 15/16 November 2016  
Venue Nashville  
Organising committee Federal Reserve Bank of Cleveland  
SNB  
Bank of Canada  
Federal Reserve Bank of Atlanta

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## 3.4.2 CONFERENCES HOSTED BY THE SNB

### 3.4.2.1 HSG-Aussenwirtschaft Workshop: 'Economic integration between the European Union and Switzerland'

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Date 1 July 2016  
Venue Zurich  
Organising committee Reto Foellmi (University of St. Gallen)  
Roland Hodler (University of St. Gallen)  
Simon Evenett (University of St. Gallen)  
Raphael A. Auer<sup>§</sup> (SNB)

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<sup>§</sup> No longer at the SNB



## 4.1 RESEARCH PUBLICATIONS SORTED BY TOPIC

### 4.1.1 JEL CLASSIFICATION

#### C – Mathematical and Quantitative Methods

##### C0 – General

###### *C02 – Mathematical Methods*

- A convergent difference scheme for a class of partial integro-differential equations modeling pricing under uncertainty 17

##### C3 – Multiple or Simultaneous Equation Models; Multiple Variables

###### *C32 – Time-Series Models; Dynamic Quantile Regressions; Dynamic Treatment Effect Models*

- Impulse response analysis in a misspecified DSGE model: A comparison of full and limited information techniques 19

##### C5 – Econometric Modeling

###### *C51 – Model Construction and Estimation*

- Effects of incorrect specification on the finite sample properties of full and limited information estimators in DSGE models 18
- Impulse response analysis in a misspecified DSGE model: A comparison of full and limited information techniques 19

###### *C53 – Forecasting and Prediction Methods; Simulation Methods*

- Forecasting euro area recessions in real-time 33
- Exchange rate predictability and state-of-the-art models 35

#### D – Microeconomics

##### D4 – Market Structure and Pricing

###### *D43 – Oligopoly and Other Forms of Market Imperfection*

- Dynamic entry in vertically differentiated markets 24

###### *D44 – Auctions*

- Uniform-price auctions for Swiss government bonds: Origin and evolution 22

###### *D47 – Market Design*

- Re-use of collateral in the repo market 17

##### D8 – Information, Knowledge, and Uncertainty

###### *D82 – Asymmetric and Private Information; Mechanism Design*

- The predominant role of signal precision in experimental beauty contests 15
- Observing and shaping the market: The dilemma of central banks 25

Key:  
 Articles in research journals  
 Working papers

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## E – Macroeconomics and Monetary Economics

### E2 – Macroeconomics: Consumption, Saving, Production, Employment, and Investment

#### *E21 – Consumption; Saving; Wealth*

- How reliable are cointegration-based estimates for wealth effects on consumption? Evidence from Switzerland 29
- Sticky consumption and wealth effects in Switzerland 29

### E3 – Prices, Business Fluctuations, and Cycles

#### *E31 – Price Level; Inflation; Deflation*

- Market structure and exchange rate pass-through 14
- Price change dispersion and time-varying pass-through to consumer prices 34

#### *E32 – Business Fluctuations; Cycles*

- A real-time GDP data set for Switzerland 16

#### *E37 – Forecasting and Simulation: Models and Applications*

- Forecasting with large unbalanced datasets: The mixed-frequency three-pass regression filter 30

### E4 – Money and Interest Rates

#### *E42 – Monetary Systems; Standards; Regimes; Government and the Monetary System; Payment Systems*

- Networks and lending conditions: Empirical evidence from the Swiss franc money markets 33

#### *E43 – Interest Rates: Determination, Term Structure, and Effects*

- Announcements of interest rate forecasts: Do policymakers stick to them? 21
- Securitisation, loan growth and bank funding: the Swiss experience since 1932 32

### E5 – Monetary Policy, Central Banking, and the Supply of Money and Credit

#### *E51 – Money Supply; Credit; Money Multipliers*

- The banking sector and the Swiss financial account during the financial and European debt crises 24
- Credit cycles and real activity – the Swiss case 25

#### *E52 – Monetary Policy*

- Exchange rate floor and central bank balance sheets: Simple spillover tests of the Swiss franc 21
- Semi-parametric estimates of Taylor Rules for a small, open economy – Evidence from Switzerland 21
- Exchange rate floor and central bank balance sheets: Simple spillover tests of the Swiss franc 23
- Changing dynamics at the zero lower bound 26
- Cross-border spillover effects of unconventional monetary policies on Swiss asset prices 26

#### *E58 – Central Banks and Their Policies*

- Toward removal of the Swiss franc cap: Market expectations and verbal interventions 32

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## F – International Economics

### F1 – Trade

#### *F14 – Empirical Studies of Trade*

- The sources and magnitudes of Switzerland’s gains from trade 20
- Exchange rate and foreign GDP elasticities of Swiss exports across sectors and destination countries 20
- The speed of the exchange rate pass-through 27
- Foreign PMIs: A reliable indicator for exports? 30

### F3 – International Finance

#### *F31 – Foreign Exchange*

- Exchange rate returns and external adjustment: Evidence from Switzerland 19
- Macroeconomic surprises, market environment and safe-haven currencies 31
- Capital flows and the Swiss franc 34

#### *F32 – Current Account Adjustment; Short-Term Capital Movements*

- On the roles of different foreign currencies in European bank lending 31

#### *F34 – International Lending and Debt Problems*

- Repatriation of debt in the euro crisis 16

---

## G – Financial Economics

### G1 – General Financial Markets

#### *G11 – Portfolio Choice; Investment Decisions*

- A portfolio model of quantitative easing 27

#### *G12 – Asset Pricing, Trading Volume, Bond Interest Rates*

- Currency intervention and the global portfolio balance effect: Japanese lessons 18
- Is there a too-big-to-fail discount in excess returns on German banks’ stocks? 22

### G2 – Financial Institutions and Services

#### *G28 – Government Policy and Regulations*

- The liquidity coverage ratio and security prices 28

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## R – Urban, Rural, Regional, Real Estate, and Transportation Economics

### R3 – Real Estate Markets, Production Analysis, and Firm Location

#### *R31 – Housing Supply and Markets*

- Price expectations and the US housing boom 34

Key:  
Articles in research journals  
Working papers

#### 4.1.1.1 Keywords

Accounts, national .....	16	Expectations	
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Portfolio balance effect .....	18
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complementarities .....	14
setting .....	14
U.S. import .....	14
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Quality ladders .....	24
Regime switching .....	26
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sovereign .....	16
Safe haven .....	24
currency .....	34
Securitisation .....	32
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Speculation .....	34
Spillovers	
announcement effects .....	26
spillbacks .....	23
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Switzerland .....	17, 20, 24, 33
Taylor rules .....	21
Time-varying probability .....	26
Trade gains .....	20
Transmission .....	27
Turmoil .....	33
Variables, constrained .....	26
Vertical differentiation .....	24
Wealth effects .....	29
Yen .....	31

Key:  
Articles in research journals  
Working papers

## 4.2 RESEARCH PUBLICATIONS SORTED BY AUTHOR

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Auer, Raphael A. ....	14, 24, 24
Baeriswyl, Romain .....	15, 25
Bäurle, Gregor .....	25, 26
Bernhard, Severin .....	16, 26
Ebner, Till .....	26
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Zurlinden, Mathias .....	28

Key:  
Articles in research journals  
Working papers

## EVOLUTION OF SNB RESEARCH OVER RECENT YEARS

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This appendix provides an overview of the quantity of research articles and working papers written by SNB staff in the last decade.

### Articles in research journals

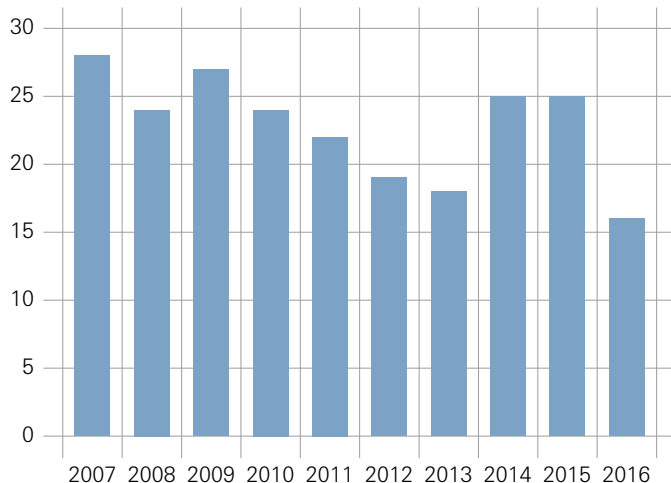
In 2016, the quantity of articles in research journals fell to its lowest level since 2007 (cf. chart 1). SNB staff have generally published between 20 and 30 articles per year, falling slightly short of this range in 2012 and 2013. A slight tendency for the number of publications to decrease can be observed for the period 2009–2013. In 2014 and 2015, however, the usual range was attained again.

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**CHART 1**

Number of articles in research journals

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### SNB working papers

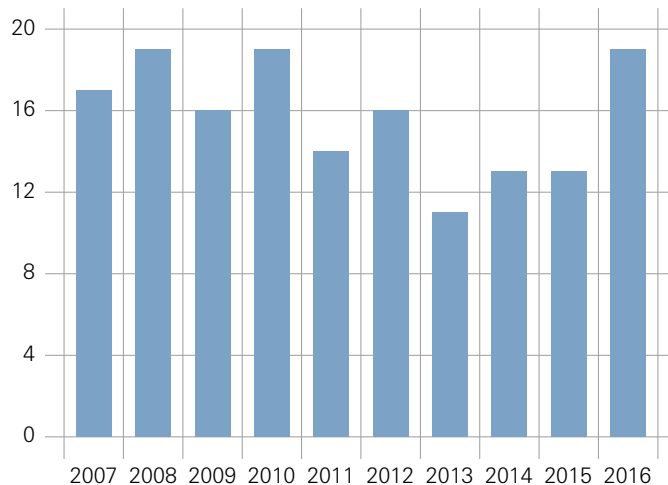
In recent years, between 10 and 20 papers written by SNB staff have been included each year in the SNB Working Papers series (cf. chart 2).

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**CHART 2**

Number of SNB Working Papers

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**Published inhouse by**  
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