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# SNB Research Update

## October 2016

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## Spotlight

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Dear Reader

One of the SNB's key tasks is to contribute to the stability of the financial system. Our duties here include overseeing systemically important payment and securities settlement systems, monitoring the Swiss banking sector and promoting an appropriate regulatory and institutional framework. To this end, the SNB participates in the Financial Stability Board and various other international task forces.

As in monetary policy matters, applied research is a prerequisite for performing stability-related duties effectively. At the SNB, research in this area focuses on improving our understanding of the causes and consequences of financial instability, on properly identifying and measuring key risk factors, and on developing and assessing suitable regulatory instruments.

The data and findings associated with such research are often confidential and, for legal reasons, can only be disclosed in the form of high-level summaries. The analysis of the Swiss banking system's exposure to interest rate risk, published as a special box in our latest Financial Stability Report, is a good – and recent – example of this kind of work.

Let me also take this opportunity to highlight the 'featured article' in this SNB Research Update – a working paper by Severin Bernhard and Till Ebner. In it, the authors explore the cross-border spillover effects of unconventional monetary policies on Swiss asset prices, thereby making an important contribution to one of the SNB's fields of research.

**FRITZ ZURBRÜGG**

Vice Chairman of the Governing Board

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

## TILL EBNER AND SEVERIN BERNHARD'S ANALYSIS OF HOW FOREIGN UNCONVENTIONAL MONETARY POLICIES AFFECT SWISS ASSET PRICES

BY ANNA CAMPELL AND THOMAS LUSTENBERGER

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As the global financial crisis unfolded in 2008, central banks around the world took policy rates close to the effective lower bound and introduced a variety of unconventional monetary policy measures to support the economy. These included – and continue to include – expanding and altering the composition of their balance sheets (quantitative easing, credit easing) and issuing guidance on the future path of policy rates (forward guidance).

But in an increasingly interconnected world, how effective are such policies, and what side effects might we encounter – with respect both to a country's domestic economy and cross-border spillovers? These important questions are being addressed in a growing body of empirical literature.

Severin Bernhard and Till Ebner have contributed to this debate with their analysis of the cross-border spillover effects of unconventional monetary policies on Swiss asset prices (SNB Working Paper 2016-09).

### Empirical framework

The authors evaluate how Swiss asset prices respond to foreign unconventional monetary policies on the day of a given announcement.

Their analysis is based on a set of 90 policy statements issued by the Fed, ECB, BoE and BoJ between 2008 and 2014. However, rather than simply using an announcement day dummy, the authors rely on a measure of policy surprise as an independent variable. This choice is motivated by the view that only the surprising part of a policy statement is likely to have an effect on financial markets. When assessing the market impact of policy announcements, it is therefore important to isolate relevant news content. Bernhard and Ebner use the change in the price of government bond futures on announcement days for this purpose.

Daily changes in the Swiss equity price index (SMI), bilateral CHF exchange rates (USD, EUR), Swiss government bonds of different maturities as well as longer-term corporate bonds feature as dependent variables in the regression analysis.



Severin Bernhard and Till Ebner

### Empirical results

The analysis reveals four main results. First, positively surprising announcements, i.e. those associated with more expansionary monetary policy than expected, tend to lead to an appreciation of the Swiss franc, higher prices for Swiss government and corporate bonds and lower prices for Swiss equities. Negative surprises, associated with policy moves that are more restrictive than expected, have the opposite effect.

Second, the effect of announcements on Swiss bond yields tends to increase with maturity. This can be seen from the figure on the next page which depicts the estimated coefficients for bond yields (vertical axis) and their maturities (horizontal axis) on announcement days.

Third, ECB announcements exert the strongest and broadest impact on Swiss bond and equity prices.

Fourth, between 6 September 2011 (introduction of the minimum exchange rate policy by the SNB) and December 2014 (the end of the sample period), estimated spillover effects tended to be less pronounced – in particular for exchange rates.

To interpret their results, the authors make use of three channels of global monetary policy transmission identified in the literature.

The exchange rate channel suggests that, on impact, foreign monetary expansion induces the foreign currency (e.g. USD) to depreciate, and hence the CHF to appreciate, in accordance with the covered interest rate parity condition. The response of bilateral exchange rates in the study bears this out.

The international portfolio balance channel suggests that asset purchases by central banks, which reduce the supply of the relevant assets, cause investors to rebalance their portfolios globally by looking for substitute assets with similar risk-return profiles. As the asset purchase programmes of central banks typically focus on longer-dated bonds, longer-term Swiss bonds are natural candidates for substitution. Thus, any announcement of an increase in asset purchases abroad may lead investors to bid up the price of Swiss bonds and, consequently, cause their yield to decrease. The authors' findings for bond yields confirm this.

The international signalling channel indicates, among other things, that if a central bank unexpectedly increases its policy efforts, this signals that the central bank has received new information regarding the state of and/or outlook for the global economy that is not yet known to market participants. This, in turn, leads them to revise down their outlook for the global economy as well as expected corporate earnings. A dampening effect on global equity prices ensues. The negative response of Swiss equities is consistent with this (and the exchange rate) channel.

### Conclusion

Severin Bernhard and Till Ebner's analysis of how Swiss asset prices respond to foreign unconventional monetary policy announcements underscores the importance of cross-border linkages in shaping asset price behaviour.

SNB WORKING PAPERS NO. 2016-09

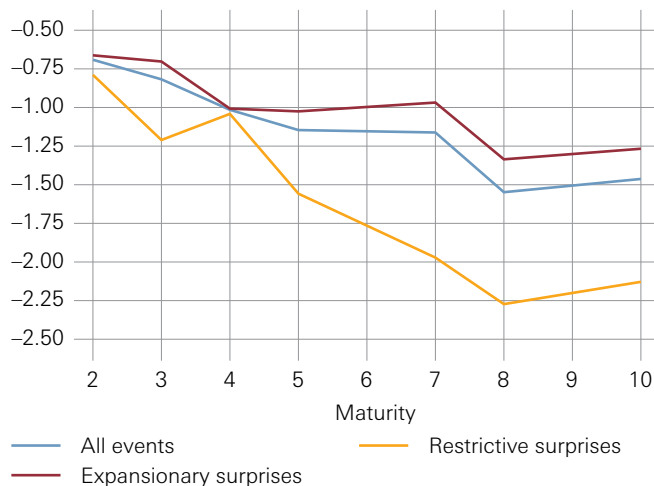
## CROSS-BORDER SPILLOVER EFFECTS OF UNCONVENTIONAL MONETARY POLICIES ON SWISS ASSET PRICES

SEVERIN BERNHARD AND TILL EBNER

SNB Working Papers are available at [www.snb.ch](http://www.snb.ch), *Research*.

### UMP EFFECT ALONG THE SWISS YIELD CURVE

Regression coefficients



Note for interpreting the coefficient of the interaction with the restrictive surprise dummy: a negative value indicates a positive asset price change because it implies the multiplication of two negative values (a negative coefficient times a negative value for the surprise measure).

SNB WORKING PAPERS NO. 2016-07

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

SIGNE KROGSTRUP AND CÉDRIC TILLE

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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 non-financial 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.

SNB WORKING PAPERS NO. 2016-08

## **CAPITAL FLOWS AND THE SWISS FRANC**

PINAR YEŞİN

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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.

SNB WORKING PAPERS NO. 2016-09

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

SEVERIN BERNHARD AND TILL EBNER

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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 boosts Swiss government and corporate bond prices, induces the CHF to appreciate, and dampens 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 EUR/CHF floor by the Swiss National Bank on 6 September 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 rebalancing channels and international signalling channels in the transmission of foreign monetary policy shocks to Swiss asset prices.

SNB WORKING PAPERS NO. 2016-10

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

NIKOLA MIRKOV, IGOR POZDEEV AND PAUL SÖDERLIND

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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 run-up 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 the future euro/Swiss franc rate. We conclude that the markets did not anticipate the discontinuation of the policy.

**THE LIQUIDITY COVERAGE RATIO AND SECURITY PRICES**

LUCAS MARC FUHRER, BENJAMIN MÜLLER AND LUZIAN STEINER

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 four 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.

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

SILVIO SCHUMACHER

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 favoured the exchange of liquidity prior to the financial market crisis but also may 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.

**CREDIT CYCLES AND REAL ACTIVITY – THE SWISS CASE**

ROLF SCHEUFELE AND GREGOR BÄURLE

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 of 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.

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## PUBLICATIONS IN JOURNALS

**ROLF SCHEUFELE** AND **SEBASTIAN GIESEN**. 2016.  
EFFECTS OF INCORRECT SPECIFICATION ON THE FINITE  
SAMPLE PROPERTIES OF FULL AND LIMITED  
INFORMATION ESTIMATORS IN DSGE MODELS

*Journal of Macroeconomics* 48(C)

In this paper we analyse 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's performance is 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.

**SANDRA HANSLIN GROSSMANN**, **SARAH M. LEIN** AND **CAROLINE SCHMIDT**. 2016.

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

*Applied Economics*

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.

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

*Aussenwirtschaft* 67(2): 31-47

In response to the financial crisis, central banks have introduced numerous unconventional monetary policies. The aim of these policies has been to sustain financial intermediation, foster the flow of credit to enterprises and households, support the monetary policy transmission mechanism, and mitigate deflationary risks. Although many of these policies were geared to the domestic economy, several studies argue that they generated international spillover effects, which are best captured in asset prices. For example, Neely (2015), Bauer and Neely (2014), and Gilchrist et al. (2014) find that unconventional monetary policy announcements by the Federal Reserve substantially reduced international long-term bond yields. Similarly, Diez and Presno (2013), Glick and Leduc (2012), and Neely (2015) find that unconventional monetary policies by the Federal Reserve also affected exchange rates and commodity prices.

THOMAS NITSCHKA. 2016.

RISK PREMIA ON SWISS GOVERNMENT BONDS AND SECTORAL STOCK INDEXES DURING INTERNATIONAL CRISES

*Aussenwirtschaft* 67(2): 51-67

This paper assesses the sensitivity of excess returns on Swiss government bond and sectoral stock indexes to risk factors during international crisis and non-crisis periods over the sample period from January 1995 to December 2014. The empirical results show that assets that were closely linked to the Swiss economy, such as government bonds or stocks from ‘non-tradable’ sectors, exhibited safe haven characteristics during the euro area sovereign debt crisis and in the non-crisis periods. This finding does not pertain to assets closely linked to international economic developments, such as stocks from tradable goods sectors.

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OTHER PUBLICATIONS

ROMAIN BAERISWYL.

THE CASE FOR THE SEPARATION OF MONEY AND CREDIT

In *Monetary Policy, Financial Crises, and the Macroeconomy*, Eds. Frank Heinemann, Ulrich Klüh, Sebastian Watzka. Springer International Publishing AG (forthcoming)

This paper argues that central banks could control consumer price inflation better by injecting money through lump-sum transfers to citizens, rather than by manipulating the credit market and interest rates. Lump-sum monetary transfers lead to less intersectoral distortion and less intertemporal discoordination than measures aimed at stimulating the credit market. They allow central banks to target inflation without building up financial imbalances.

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## PAST EVENTS

### 10 MAY 2016

#### 7TH SNB-IMF HIGH LEVEL CONFERENCE ON THE INTERNATIONAL MONETARY SYSTEM

HOST: SWISS NATIONAL BANK, ZURICH

The seventh SNB-IMF High Level Conference on the International Monetary System was held in Zurich on 10 May 2016. Thomas Jordan (Chairman of the Governing Board, SNB) together with Christine Lagarde (Managing Director, IMF) chaired the conference. Governors and Deputy Governors of 13 central banks, as well as leading economists and private sector representatives, attended this year's event. The topic of the conference was 'Towards a System of Multiple Reserve Currencies: Challenges and Opportunities'. From the SNB's side, the conference was organised by the International Monetary Cooperation team.

### 23–24 MAY 2016

#### 13TH ANNUAL NBP-SNB JOINT SEMINAR

HOST: NATIONAL BANK OF POLAND, WARSAW

The 13th annual NBP-SNB joint seminar took place in Warsaw, Poland, on 23–24 May 2016. This year's seminar focused on 'Macroprudential policy – goals, framework, analysis' and included contributions by senior economists from the SNB's financial stability department. The seminar was targeted at central bankers from Eastern Europe, the Caucasus and Central Asia. The organisation committee consisted of Paulina Gomulak (NBP) and Werner Hermann (SNB).

### 24–25 JUNE 2016

#### SNB-IMF-IMF ECONOMIC REVIEW CONFERENCE ON EXCHANGE RATES AND EXTERNAL ADJUSTMENT

HOST: SWISS NATIONAL BANK, ZURICH

The Swiss National Bank (SNB), the International Monetary Fund (IMF) and the IMF Economic Review organised a conference at the SNB in Zurich on 24–25 June 2016. The theme of the event was 'Exchange Rates and External Adjustment'. The conference provided a forum to discuss recent theoretical and empirical research on the macro- and microeconomics of external adjustment, the optimal response of monetary, exchange rate and macroprudential policies when financial frictions matter, the effects of sovereign risk, and the role of exchange rates at the sector and aggregate levels. The members of the organising committee were Raphael Auer (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), and Philip Sauré (SNB). The dinner address was given by Maurice Obstfeld, Economic Counsellor and Research Department Director at the IMF.



22 SEPTEMBER 2016

KARL BRUNNER CENTENARY

HOST: SWISS NATIONAL BANK, ZURICH

The Swiss National Bank (SNB) held the ‘Karl Brunner Centenary Event’ on 22 September 2016 to commemorate the renowned Swiss economist Karl Brunner and the lasting impact of his research on monetary economics, academia and central banking.

The event was divided into two parts: the ‘Commemorative Seminar’ and the ‘Karl Brunner Distinguished Lecture’. In part 1, Allan H. Meltzer, Benjamin M. Friedman, Charles I. Plosser and Ernst Baltensperger each gave a speech in honour of Karl Brunner and his influential work in the field of monetary economics. Recordings of the four speeches will be available at [www.snb.ch](http://www.snb.ch), *Research* from November 2016.

Part 2 marked the launch of the Karl Brunner Distinguished Lecture Series, which will be held annually to honour academics whose research is of particular relevance to central banking. The inaugural lecture entitled ‘Rethinking Central Bank Design’ was delivered by Kenneth S. Rogoff, Thomas D. Cabot Professor of Public Policy and Professor of Economics at Harvard University. Prof. Rogoff’s research on monetary policy, exchange rates, sovereign debt, financial crises and international macroeconomics has helped to improve policy analysis relevant to central banking.



Kenneth S. Rogoff

During his lecture, Prof. Rogoff claimed central banks should rethink their inflation targeting frameworks. Writing an ‘escape clause’ into such regimes would, he suggested, allow central banks to ‘engage in inflationary policy’ as required. According to Prof. Rogoff, the benefits of such an escape clause (dampening of large business cycle fluctuations) would substantially outweigh the costs (upward bias of inflation expectations). The lecture was streamed live via the SNB’s Research TV channel and is available at [www.snb.ch](http://www.snb.ch), *Research* until the end of the year.



Thomas Moser, Kurt Schiltknecht, Fritz Zurbrügg, Thomas Jordan, Peter Bernholz, Alexandre Swoboda, Dale Henderson, Benjamin Friedman, Allan Meltzer, Alex Cukierman, Ernst Baltensperger, and Charles Plosser (from upper left to lower right).

The 10th annual SNB Research Conference entitled ‘New perspectives on the role, instruments and effects of monetary policy’ was held in Zurich on 23–24 September 2016. The organisation committee consisted of Ernst Baltensperger (Study Center Gerzensee), Athanasios Orphanides (MIT), Samuel Reynard (SNB) and Marcel Savioz (SNB).

The conference is intended to strengthen central banking-related research and to promote knowledge exchange among central bank economists and academic researchers working on monetary theory and policy. There were three sessions. In the following, we highlight one presentation. The detailed conference programme and papers presented are available at [www.snb.ch/Research](http://www.snb.ch/Research).

In the first session, on Friday morning, Thomas Laubach (Board of Governors of the Federal Reserve System) presented his paper ‘Measuring the Natural Rate of Interest: International Trends and Determinants’, co-authored with Kathryn Holston and John C. Williams. Their main findings are a secular decline of the natural rate of interest and trend growth since the early 1970s and a sharp decline, since the financial crisis which has yet to be reversed. However, there is considerable uncertainty surrounding estimates for the natural rate of interest. The paper was discussed by Marc Giannoni (FRB New York) and Max Gillman (University of Missouri St. Louis).

Fritz Zurbrügg (Vice Chairman of the Governing Board, SNB) held a speech at the official conference dinner on Friday evening. In it, he explored issues facing central banks with large balance sheets.



Fritz Zurbrügg (Vice Chairman of the Governing Board, SNB) at the SNB Research Conference.

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**Welcome Address** by Fritz Zurbrügg (SNB, Vice Chairman of the Governing Board)

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**Session 1**

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**Measuring the Natural Rate of Interest: International Trends and Determinants**

Presenter: Thomas Laubach (Federal Reserve Board)  
 Discussants: Marc Giannoni (Federal Reserve Bank of New York) and Max Gillman (University of Missouri St. Louis)

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**The Theory of Unconventional Monetary Policy**

Presenter: Roger E.A. Farmer (University of California)  
 Discussants: Christian Hopenstrick (SNB) and Bernhard Winkler (ECB)

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**Floor Systems and the Friedman Rule: The Fiscal Arithmetic of Open Market Operations**

Presenter: Antoine Martin (Federal Reserve Bank of NY)  
 Discussants: Aleksander Berentsen (University of Basel) and Mico Loretan (SNB)

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**Session 2**

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**Mortgages and Monetary Policy**

Presenter: Roman Sustek (Queen Mary University of London)  
 Discussants: Cédric Tille (Graduate Institute Geneva) and Behzad Diba (Georgetown University)

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**Leaning Against the Credit Cycle**

Presenter: Gisle Natvik (Norges Bank)  
 Discussants: Lars E.O. Svensson (Stockholm School of Economics) and Tobias Cwik (SNB)

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**Macprudential Policy in the New Keynesian World**

Presenter: Hans Gersbach (ETH)  
 Discussants: Harris Dellas (University of Bern) and Jörn Tenhofen (SNB)

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**Session 3**

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**Excess returns in the Swiss franc money market**

Presenter: Basil Guggenheim (SNB)  
 Discussants: Kenneth West (University of Wisconsin) and Cyril Monnet (University of Bern)

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**Currency Wars or Efficient Spillovers? A General Theory of International Policy Cooperation**

Presenter: Anton Korinek (Johns Hopkins University)  
 Discussants: Michael Bordo (Rutgers University) and Jeff Campbell (Federal Reserve Bank of Chicago)

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**International Inflation Spillovers Through Input Linkages**

Presenter: Philip Sauré (SNB)  
 Discussants: Federico Mandelman (Federal Reserve Bank of Atlanta) and Stefan Gerlach (BSI Bank)

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### 13–14 OCTOBER 2016

#### BUBA-OENB-SNB WORKSHOP

HOST: DEUTSCHE BUNDESBANK, FRANKFURT

On 13–14 October, the Deutsche Bundesbank (BuBa), the Oesterreichische Nationalbank (OeNB) and the SNB held a joint workshop in Frankfurt. Three researchers from each central bank presented work in progress, with topics including policy uncertainty, cash and credit demand, long-term interest rates, and macroprudential tools and policy. At this workshop, Christian Grisse (SNB) presented his paper ‘Lower bound beliefs and long-term interest rates’, co-authored with Signe Krogstrup and Silvio Schumacher. Stefanie Behncke (SNB) presented her paper ‘The Effects of Macroprudential Policies on Bank Lending and Risks’. Thomas Lustenberger (SNB) spoke on ‘Testing Morris & Shin’, a paper he co-authored with Enzo Rossi. Christian Grisse (SNB) was the discussant of the paper ‘Below the zero lower bound – a shadow-rate term structure model for the euro area’ by Andreea Vladu and Wolfgang Lemke. Pacal Towbin (SNB) discussed the paper ‘Changes in Prudential Policy Instruments – A New Cross-Country Database’ by Esther Segalla. Gregor Bäuerle (SNB) discussed the paper ‘Cross-country differences in home ownership: A cultural phenomenon?’ written by Stefanie Huber and Tobias Schmidt. The organising committee consisted of Sandra Eickmeier (BuBa), Martin Summer (OeNB) and Marcel Savioz (SNB).

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### UPCOMING EVENTS

### 15–16 NOVEMBER 2016

#### JOINT CENTRAL BANK CONFERENCE (FEDERAL RESERVE BANK OF CLEVELAND, BANK OF CANADA, FEDERAL RESERVE BANK OF ATLANTA, SNB)

HOST: FEDERAL RESERVE BANK OF ATLANTA, NASHVILLE

### 21 SEPTEMBER 2017

#### KARL BRUNNER DISTINGUISHED LECTURE

HOST: SWISS NATIONAL BANK, ZURICH

### 22–23 SEPTEMBER 2017

#### SNB RESEARCH CONFERENCE

HOST: SWISS NATIONAL BANK, ZURICH

#### PUBLISHER

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